Multi-sensory environment for elderly people suffering from dementia at Kustaankartano

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First of all I want to thank Finland because they gave me the opportunity to study for free, if we stop and think about it in any other part you can get this chance of studying and getting a degree, we just have to take this chance. Chances sometimes just appear once.

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Abstract:

This project was done after an inquiry from Kusstankartano. The idea came after discussed some possibilities; to design and create enhancements with Snoezelen methods that could be used by anyone. The aim of the project was divided in two; the use of non-pharmacological therapeutic methods to improve the quality of life for the demented patients with the help of a multi-sensory surrounding environment and the rehabilitation of these patients through reminiscence therapies that stimulate their senses with a holistic way following Snoezelen principles, using aromatherapy and bright light therapies. Aromas will be added to specific items, they might explore in this therapeutic room and they can enjoy having a relaxation moment and improvement of mood when feeling anxiety or angry avoiding feelings of depression and loneliness.

The research questions were: How therapeutic multi-sensory environment affects the ability to interact with the elderly demented patients and their carers? The second question was: How does the sensory system from elderly demented patients react towards a non-pharmacological therapeutic surrounding?

For this purpose the research method of analysis was content analysis, focused on the results from other authors; where they applied Snoezelen methodology to patients that improved on many aspects of their life. The material was taken from articles and books, it was read, and analyzed carefully. From the most suitable material the Snoezelen theories were brought down and categories and subcategories were formed to give the exact findings from the benefits from these alternative and complementary therapeutic approaches and how carers could improve the sense of well being from their patients in a holistic way. The results were to create a space where sensory system of demented patients will get stimulated through designed enhancements and images found from nature and from young adults enjoying of the outdoor markets in Finland in 1939 .

Keywords:	Multi-sensory, environment, quality of life, reminiscence, holistic care, dementia, stimulation, Snoezelen, Kustaankartano centre, non-pharmacological approach, anxiety, loneliness, depression.
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Detta projekt initierades som en följd av en förfrågan från Gustavsgårds åldringshem. Idén diskuterades beträffande möjligheterna att med hjälp av Snoezelen-metoder skapa och utveckla ny utrustning som kan användas av vem som helst. Målet med projektet uppdelades i två delar: - Användande av non-farmakologiska terapimetoder för att förbättra livskvaliteten hos dementa patienter med hjälp av en multisensorisk omgivning och - rehabilitering av patienterna genom reminiscens-terapier som stimulerar deras sinnen på ett holistiskt sätt med användande av arom- och klarljusterapier. Aromer fogas till specifika detaljer som patienterna eventuellt varseblir i terapirummet för att därmed kunna njuta av en stund av avkoppling med en förbättring av humöret vid känsla av oro och ilska som följd och därmed undvika känslor av depression och ensamhet. Frågeställningarna som undersöktes var: - Hur påverkar en multisensorisk omgivning förmågan till kommunikation mellan äldre, dementa patienter och deras vårdare? - Hur reagerar äldre dementa patienters känslosystem för en non-farmakologisk terapeutisk omgivning? Som forskningsmetod användes för detta ändamål tillfredsställelse-analys som fokuserade på resultat hos andra författare som använt sig av Snoezelen-metodiken på patienter som blivit bättre i flere avseenden av sina liv. Materialet togs ur artiklar och böcker, studerades och analyserades omsorgsfullt. Av det lämpligaste materialet spjälktes Snoezelen-teorierna upp och kategorier och underkategoprier bildades för att därmed åstadkomma exakta slutsatser av nyttan med dessa alternativa och kompletterande terapeutiska tillvägagångssätt och hur vårdare kunde förbättra känslan av välbefinnande hos sina patienter på ett holistiskt sätt. Resultaten var att skapa ett utrymme där dementa patienters känslosystem stimuleras genom utvecklade hjälpmedel och bilder påträffade hos unga vuxna som uppskattar utemarknaderna i Finland år 1939.	
Nyckelord:	Multisensorisk, omgivning, livskvaliteten reminiscens-terapier, holistiskt sätt, dementa, stimulati, Snoezelen, Gustavsgårds åldringshem, non-farmakologiska ångest, ensamhet, depression.
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Otsikko: Multisensorinen ympäristö dementiasta kärsiville vanhuksille

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Työn teettäjä: Kustaankartanon vanhustenkeskus

Tiivistelmä:

Tämä projekti on tehty Kustaankartanon vanhustenkeskuksen pyynnöstä ja heidän kanssaan yhteistyössä. Eri ideoiden läpikäynnin jälkeen projektin ideaksi syntyi suunnitella tilaa ja luoda parannusehdotuksia Snoezelen metodiikan avulla niin, että tämä olisi kaikkien käytettävissä. Projektilla oli kaksi päämäärää; käyttää ei-farmakologisia terapeuttisia metodeja hyödyntäen multisensorista ympäristöä, jolla on tavoite parantaa dementoituneiden potilaiden elämänlaatua sekä näiden potilaiden kuntoutusta aisteja stimuloivalla muistikuva-terapian avulla, jossa kokonaisvaltaisella tavalla seurataan Snoezelen metodiikan periaatteita hyödyntäen aromaterapiaa ja kirkasvaloterapiaa. Tuoksuja käytetään hyödyksi erikseen määritellyissä esineissä, joita voidaan tarkastella suunnittelun kohteena olevassa terapiahuoneessa, jonka tehtävänä on myös tuottaa rauhoittavia ja mieltä virkistäviä hetkiä potilaille silloin kun potilaat tuntevat esimerkiksi ahdistusta, vihan tunteita, masennusta tai yksinäisyyttä.

Tutkimustyön kysymyksiä olivat; 1. Kuinka terapeuttinen multisensorinen ympäristö vaikuttaa ikääntyneen dementoituneen henkilön kykyyn olla vuorovaikutuksessa huoltajiinsa ja 2. Kuinka ikääntyneiden dementoituneen henkilön aistielimet reagoivat ei-farmakologiseen terapeuttiseen ympäristöön? Tätä varten tutkimusmetodina käytettiin sisällön analyysiä, joka kohdistettiin aiempien kirjoittajien tuloksiin, joissa Snoezelen metodiikkaa on hyödynnetty potilaiden elämänlaadun parantamiseen. Materiaalia kerättiin artikkeleista ja kirjoista, jotka lukemisen jälkeen analysoitiin tarkasti. Soveltuvin aineisto Snoezelen teorioista kerättiin yhteen ja muodostettiin luokat sekä alaluokat, joista voitiin saada esiin tarkat löydökset vaihtoehtoisten ja täydentävien terapeuttisten lähestymistapojen hyödyistä ja tavoista kuinka huoltajat voisivat parantaa kokonaisvaltaisesti potilaidensa hyvin vointia. Näiden tuloksena tuli suunnitella tila, jossa potilaiden aistielimiä voidaan stimuloida tilallisten parannusten myötä sekä mm. 1939-luvulta peräisin olevilla valokuvilla suomalaisesta torimiljööstä.

Avainsanat:	Multisensorinen, ympäristö, elämän laatu, muistikuva, kokonaisvaltainen hoito, dementia, stimulointi, Snoezelen, Kustaankartanon vanhustenkeskus, ei-farmakologinen lähestyminen, ahdistus, yksinäisyys, masennus

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1 INTRODUCTION

The Snoezelen concept idea came up after being discussed at Kustaankartano institution home for ageing patients where it seems it has been very successful to implement projects for the elderly people and relatives that come and visit them there. The task was to implement a new idea for them that can be used for patients that still can move by themselves and can also be enjoyed by the bed-ridden patients with the help of the carers. As an industrial designer myself, the motivation I had was to develop a product that combined design and elderly patients, something that combines my previous background of Geronom knowledge and at the same time include my culture. As a result the final product will be an outdoor market with a Finnish and Swedish twist that will be created as a 3-dimensional object and will offer the patients and caregivers the possibility to enjoy the space as a new experience by stimulating all their senses and it will have a special focus on texture, colour and smell and will be used at Kustaankartano.

The main idea of this project is that the stimulating room at Kustaankartano can be used by anyone. Already there are 3 different rooms with a Snoezelen concept at the ward and what makes this different is that the author thought about a space demented patients can enjoy together with their caregivers, relatives and other patients through a trip experience, that in this case will be entering into an outdoor market, without leaving the building. The expected value from the project is to enhance social interactions, reduce isolation and inactivity and if possible, to also enhance self-activities such as buying items from an open market with the help of the staff members. It will also increase interaction between family members, staff and residents and this will be done through reminiscence therapy sessions at the " market room".

What makes it different from the other rooms already existing at Kuustankartano?

The idea of this room is to help and enable the patients to enjoy different colours, textures, smells and also to provide stimulation through photographs from different markets, mainly in Finland and Sweden, but also around some other countries, and to be shared together with relatives when they go and visit them. This way they can enjoy their visits through a different space instead of just being with them in their rooms or

dining room that sometimes can feel like a burden for those who go and visit their relatives at these institutions. This will also give families ideas for a more comfortable and positive visit.

At the same time Kustaankartano can decide if they want to expand the use of the room to other institutions where patients suffer from autism. The difference between the relaxing room and activation room will be different culture themes that can be changed depending on the seasons of the year and will make the users feel like being inside a market in some other part of the world. These will be provided by the different items that will be gathered there together with sights, sounds and smells in some items and different textures and at the same time, some of these items can also be taken to the patients that are in permanently bed-ridden so they will also be able to take part in this project too.

For this purpose the decision taken was to think about the project as a carer and the possibilities that could create this specifically designed space together with the tools to work with the demented patients which combined with the use of reminiscence therapies could make a difference and an impact on the quality of life of everyone. This means patients, carers and relatives of the patients from Kustaankartano. So it was taken into account to explore two different areas that are: The use of reminiscence and the impact or reaction from the sensory system towards the room created at the multi-sensory environment. For this reason there will be two different research studies in this project.

Who will use this multi- sensory room sharing the Snoezelen philosophy and where?

It is known globally the size of the ageing population is growing in accelerated steps and this is true of Finland also. This means that more action has to be taken to produce more services for the older population. Many elderly people in Finland are suffering from mental disorders and as a result more social services for them are required with skilled people that understand the world of the ageing population as well as mental disorders. This opens a new opportunity for those home centres like Kustaankartano care centre which has already taken this into account and has started different projects to improve the quality life of the patients that live there.

By already creating two Snoezelen unit rooms and a garden for the patients that live in the dementia unit, it is a good example of how things are changing towards a more dignified life, regardless of the mental condition of the patients, with a better understanding of the care from these patients at Kustaankartano. The head nurse from the unit, has seen the improvement of the patients there but is concerned that there are patients who cannot go to these special units to relax or calm, so one idea was to create something that could also be used by the bed-ridden patients as well as be enjoyed by the rest of the patients too.

The head nurse has an artistic eye making allowing more open ideas when thinking about this project and has seen the things that could improve the quality of life from the patients at the unit. For example, a sensory wall in the dining area. When she was told about the opportunity to have a student from Arcada she was happy due to the good results the previous Arcada projects had shown. She understood the need of activating many of the patients because they have a white room that mainly works for relaxation, and a green room that works for stimulation. There is also a garden that patients can enjoy during the summer time so this project had to accomplish many requirements including activation and enjoyment too.

The 300 patients that will be using the special units are located in the dementia ward in Kustaankartano and they are divided in three different groups: The first group are residents of the dementia unit that are patients with memory problems. In the second group, there are patients that come and stay at Kustaankartano for short periods but are living in their own homes. The second group also includes patients with dementia. The last group has patients that live at Kustaankartano and that suffer from reduced levels of cognition and have some impairments too. Also in unit are permanently bed-ridden patients that also need activation and therefore could also enjoy the benefits of Snoezelen. However, when making the whole project, the idea was also to create the kind of units that could also be used by those patients that do not have mental disorders but are isolated. The project would mean they could have some sort of weekly activity to avoid feelings of loneliness and further depressive symptoms.

2 BACKGROUND

2.1 Snoezelen concept

Snoezelen has been defined as the sensory wake up through a nearby sensory experience. It is a primary activity in a place where the environment is built with diffused lights and sweet music that creates calmness and security, stimulating all the senses. ”Snoezelen is the recreation of true life moments to different people”(www.handycat.com) . Also, the concept of Snoezelen has improved therapies in countries like Holland, Belgium, The USA, Germany, Italy, The Kingdom and France. The design and development comes from Holland at the Dutch Institute of Haarendael, Hargenber i Piussoord, where they had designed a useful tool for therapeutics and assistants of people suffering from some incapacity. When put together the word Snoezelen in Dutch means impregnate and dream. Since its beginning, it has become a new way to approach the issue about the disabled world, creating improvements on relaxation and multi-sensory stimulation.(www.handycat.com)

The Snoezelen concept is based on the environment and has specific characteristics that are to do with the use of multi-sensory therapies. One of the first aims about a multi-sensory area is to learn how carers can meet again with disabled people and try to establish a better relationship that can be improved after many sessions at just such a therapeutic space. The multi-sensory rooms in most of the cases are built in a physically closed space: a room where we as carers can arrange different items to stimulate all the senses, and therefore build an environment that will provide relaxation and protection. (www.snoezelen.net)

2.1.1 The history behind Snoezelen

The concept idea from Snoezelen was originally designed in the 1970´s in Holland and was mainly designed for people who suffer from mental disorders. In the beginning the idea was designed for children but due to the huge success, it was also introduced to the demented elderly patients in institutions. Snoezelen helps these kinds of patients by

stimulating their senses. The concept idea from Snoezelen comes from the combination of two words in Dutch: ”suffelen” which means sniffing and ”doezelen” which means dozing or snoozing. Snoezelen is about controlled multi-sensory stimulation through the use of light effects, colours, sounds, music, scents, etc. and all the combinations of different materials that can be explored with the senses and without verbal communication. So therefore Snoezelen can be a very helpful non-directive therapy for people with profound autism. (Hulsegge & Verheul 1987).

2.1.2 Snoezelen elements

For the authors Hulsegge and Verheul (1987) it was very important to continue with the diffusion of the Snoezelen concepts used since the 1970´s with people suffering from dementia. The clinical application of Snoezelen has been extended from the field of learning disability to dementia care over the past decade. The rationale for its use lies in providing a sensory environment that places fewer demands on intellectual abilities but capitalizes on the residual sensory motor abilities of people with dementia (Buettner 2009). Practitioners are keen to use Snoezelen in dementia care, and some encouraging results have been documented in the area of promoting adaptive behaviours (Baker 2003).

2.2 Previous research on Snoezelen and dementia

Baillon, S. (2002) has been one of the authors that concentrate on the functions of the senses in reaction to therapies such as being exposed to multi-sensory therapy and has explained that usually these types of therapies take place in a dedicated room where patients experience a range of un-patterned visual, auditory, smell and tactile stimuli (Baker et al 2003). These rooms are designed to give a feeling of comfort and safety which are interventions towards a better care. Here the patient can relax, explore and enjoy the surrounding. Multi-sensory therapy is a relatively new intervention which is closely related to the ideas behind sensory stimulation therapy.

The concept which originated in the Netherlands in the 1960´s, in the field of learning disabilities was first described in the UK by Hulsegge & Verheul (1987). The term Snoezelen remains in common use.

The aspects of multi-sensory therapy consist of relaxation, stimulation and a failure-free, non-directive, response to the individual enabling rapport building. The provisions of a multi-sensory therapy are via stimulation through the senses that are visual, aural, tactile, olfactory, and gustatory and there will be a control and choice from the individual. However there are many conventional therapies from other fields of care that are unsuitable for those patients with severe and multiple physical and mental limitations because they place expectations on the patient to attempt and achieve something that is potentially beyond their abilities. In addition, people with severe and multiple handicaps often experience very limited psychological and sensory stimulation, particularly in institutional care and have limited degree of control and choice in all aspects of their lives (Baillon 2002). Recently the use of this intervention has extended throughout the world and it is becoming increasingly available within the mental health facilities like the community facilities and residential homes. This includes also portable versions of equipment that is usually found in a dedicated multi-sensory unit involving the patient to incorporate aspects of the philosophy of multi-sensory therapy into the entire care environment This is one of the requirements of this research project for Kustaankartano; it has to be something that can be enjoyed by anyone.

2.3 Conclusion from previous research

A Snoezelen multi-sensory environment (MSE) incorporates a specialized selection of sensory equipment and materials that may help clients adapt their responses to sensory stimulation and to advance education and therapy goals. Each Snoezelen sensory environment is created to meet the needs of specific populations according to age and ability. The blend of sights, sounds, textures, aromas and motion provide stimulation of the primary sensory systems and may be modified to meet each patient´s sensory needs.

This environment is designed to offer patients suffering from some mental disorders or with special needs through challenging conditions and the opportunity to exercise choice through action. These safe, non-threatening environments bridge cognitive, perceptual, behavioural, and physical impairments, as well as other limiting conditions to provide a sense of empowerment. Moreover these environments allow clients to enjoy a wide range of sensory experiences, either passively or actively, that enhance therapies, learning and relaxation.

Furthermore, in a Snoezelen space the patients choose the experiences that they enjoy the most. In some cases they can interact freely with the different components to create positive environments, control the level of sensory stimuli, adapt responses to sensory stimulation, experience easer transition to task and perform and behave in a more functional manner.

Patients with Dementia and the environment

There has been a lot of research on the person-environment from the dementia care point of view. Studies have shown that the progression of intellectual deterioration in people with dementia who were cared for in a homelike special care unit was slower than in people cared for in a nursing home, that creating a homelike environment can positively affect interaction and behaviour and produce less confusion and anxiety in individuals with dementia, and that enriching the environment with nature scenes, sounds, and smells, has been associated with positive effects on individuals behaviour and mood. It is shown that to promote adequate behaviour and feelings of safety and homelikeness among individuals with dementia it is important the consciously using of the physical environment as a therapeutic tool, that in this case will be by enriching the environment with symbols of the homelike and familiar and by creating calm and safe places in which interaction is supported. (Edvardsson 2009).

2.4 Dementia

Dementia is a decline in mental abilities or cognitive functions such as memory, language, reasoning, planning, recognising, or identifying people or objects. This decline is beyond what might be expected from normal ageing. These symptoms eventually impair the ability to carry out everyday activities such as driving, household activities, and even personal care such as bathing, dressing, and feeding.

Dementia is a common clinical syndrome characterized by a decline in cognitive function and memory from previously attained intellectual levels, which is sustained over a period of months or years. The deterioration is so severe that it impairs the affected individual´s ability to work and to perform activities of daily living, including communication. Cummings and Benson state that at least three of the following five areas of mental activity must be involved: language, memory, visio-spatial skills, emotion or personality and cognition, abstraction, calculation and judgement (Lubinski 1995).

The probability of suffering from dementia increases with age. Dementia mostly occurs in the second half of life, often after the age of 65. Dementia is usually caused by degeneration in the *cerebral cortex*, the part of the brain responsible for thoughts, memories, actions and personality. Death of brain cells in this region leads to the cognitive impairments that characterise dementia. Some causes of dementia are treatable. These include, among others: head injury, brain tumours, infections (such as meningitis, HIV / AIDS, or syphilis), simple and normal pressure hydrocephalus (when the fluid in which the brain floats is collecting outside or in the cavities of the brain, compressing it from outside), hormone disorders (that is, disorders of hormone-secreting and hormone-regulating organs such as the thyroid gland), metabolic disorders (such as diseases of the liver, pancreas, or kidneys that disrupt the balances of chemicals in the blood), hypoxia (poor oxygenation of the blood), nutritional (vitamin) deficiencies, drug abuse, or chronic alcoholism. Unfortunately, most disorders associated with dementia are progressive (inducing a gradual decline of functioning). Usually progresses slowly. Making an accurate diagnosis in its early stages can be difficult. (http://www.dementia.com).

Dementia can be caused by one medical condition or by multiple medical problems. Some types of dementia can be cured partially or completely with treatment. The degree of reversibility often depends on how quickly the underlying cause is detected and treated. Other types of dementia are irreversible and cannot be cured (e.g., dementia due to Alzheimer's disease). Most dementias are caused by Alzheimer's disease (accounting for about 50-70% of all dementia cases) and vascular disease (about 15-20% of all cases). The author will concentrate most of the discussion on dementia due to Alzheimer's disease because this condition is the most common. However, the term dementia is not a synonym for Alzheimer's disease. Dementia is a broader term and refers to any brain syndrome resulting in problems with memory, orientation, judgement, and communication (http://www.dementia.com).

2.4.1 Effects of Dementia in elderly patients

Short-term memory loss

All of us forget things for a while and then remember them later. People with dementia often forget things, but they never remember them. They might ask you the same question over and over, each time forgetting that you've already given them the answer. They won't even remember that they already asked the question.

Difficulty performing familiar tasks

People who have dementia might cook a meal but forget to serve it. They might even forget that they cooked it.

Problems with language

People who have dementia may forget simple words or use the wrong words. This makes it hard to understand what they want.

Time and place disorientation

People who have dementia may get lost on their own street. They may forget how they got to a certain place and how to get back home.

Poor judgement

Even a person who doesn't have dementia might get distracted. But people who have dementia can forget simple things, like forgetting to put on a coat before going out in cold weather.

Problems with abstract thinking

Anybody might have trouble balancing a chequebook, but people who have dementia may forget what the numbers are and what has to be done with them.

Misplacing things

People who have dementia may put things in the wrong places. They might put an iron in the freezer or a wristwatch in the sugar bowl. Then they can't find these things later.

Changes in mood

Everyone is moody at times, but people with dementia may have fast mood swings, going from calm to tears to anger within a few minutes.

2.4.2 Diseases that causes dementia.

Alzheimer's disease

Alzheimer's disease is the most common form of irreversible dementia. Alzheimer's disease and is a physical condition. The mental and emotional symptoms are a direct result of a set of catastrophic changes in the brain that lead to the death of brain cells. This degeneration is irreversible. It is estimated that Alzheimer's disease comprises 25 to 35 percent of all dementias and up to 50 percent of chronic progressive dementias.

Alzheimer's disease is a slowly unfolding, progressive disease that can be divided into three stages. The mild stage or early stage is typically characterised by impairments of mental abilities as well as mood swings. In the moderate stage or mid-stage, behavioural disturbances usually increasingly develop, whereas physical problems are dominant in the severe stage or late-stage. The individual course of the disease is, however, very variable. Alzheimer's disease is not reversible, and there is no known cure. There are, however, medications that can slow down its progress. Also, some prevention methods might reduce the risk of developing the disease. (http://www.dementia.com).

Three features mark out this pathology:

First there is a general loss of neurones and hence of synaptic connections and this produces a big loss, up to 40 percent of all neurones might be lost when dementia is really severe. Second there is an atrophy of the brain shown as shrinkage of the outer volume and an enlargement of the inner ventricles which were occupied by cerebro-spinal fluid. Thirdly, there are certain signs of the degeneration of cell structure, which become visible at a microscopic level and these also appear in the brains of people who have died with Parkinson's disease. (http://www.dementia.com).

Diagnosis

There are standard tests that are the most reliable focus exclusively on cognitive impairments.

Tests of short-term memory are particularly easy to administer, but tend to give higher prevalence figures than test that are multifaceted, partly because they blur the boundaries between dementia and simple memory impairment. The translation of tests from one language or another often involves hidden cultural bias.

Among those over 85 years old, around 15 percent might be expected to have dementia. There appear to be more prevalence differences according to sex, with the possibility that Alzheimer's disease may peak at some point in the mid-80s more often in women than men (www.dementia.com).

Care giving for patients suffering from Alzheimer's disease

Also in professional care giving, care providers need to accept the fact that those cared for will gradually become more dependent. It had been suggested that a distinction between reducing stress-related behaviour and curing the disease is important. Such distinction helps care providers develop an attitude towards residents as normal, yet disabled, people whose quality of life needs to be maintained rather than a sick people who need to be cured. Good care has been found to lead to improvement. (http://www.dementia.com).

From the social point of view

The cognitive alterations associated with AD lead to a gradual loss of self and perception, including self -awareness, self -esteem, and self -cohesion. Also AD is related to changed experience of time, which has been pointed out as threatening to ones sense of identity. The person with an AD experience of the self comes to feel strange and unfamiliar when the timeline of the past, present, and future becomes fragmented, which can cause Anxiety. (http://www.dementia.com).

Symptomatology:

It is estimated that the major clinical features associated with Alzheimer's include severe memory deficit which is also it's most commonly recognized symptom. Bayles and Kazniak state that memory changes associated with demented Alzheimer's tpe (DAT) are different from those of normal ageing. They found that both episodic and semantic memory are compromised. Patients have difficulty with delayed and immediate recall of information. These memory difficulties manifest themselves in difficulties with orientation of time, place and person as well as difficulty in learning and retaining new material. Another major clinical feature is impairment in communication. Other symptoms of DAT include difficulties with visio-spatial skills, such as solving problems, cognition including calculation and abstraction, motor systems and neuropsychiatric or personality dysfunctions. (http://www.dementia.com).

Lewy body

Lewy Body Disease is comprised of a spectrum of diseases involving an array of dementia and motor symptoms. The disease is commonly referred to by a number of names, such as *Lewy Body Disease*, *Lewy Body dementia*, *dementia with Lewy Bodies*, or *diffuse Lewy Body Disease*.

Identifying Lewy Body Disease can be challenging if one is unfamiliar with its pathology, because the dementia is similar to that of Alzheimer's, while many symptoms appear to mimic Parkinson's. However, there are notable distinguishing characteristics. Unlike people with Alzheimer's or Parkinson's disease, patients exhibit:

- strong psychotic symptoms (hallucinations)
- day-to-day symptom variability.

In addition, Lewy Body disease is twice as common in men as in women (Alzheimer's occurs equally in both genders) and is rarely genetically linked.

What are Lewy Bodies?

Lewy Bodies are abnormal structures in the mid-brain: microscopic protein deposits found in nerve cells that disrupt the brain's normal functioning, causing it to slowly deteriorate. They were first discovered in 1912 by Frederick Lewy, a colleague of Alois Alzheimer (for whom Alzheimer's disease is named).

While the presence of Lewy bodies in the mid-brain has long been recognized as the hallmark of Parkinson's disease, in the 1960s Lewy Bodies were discovered in the cortex (the brain's outer layer) of people with dementia.

People with Lewy Body disease have Lewy Bodies in both the mid-brain and cortex. Lewy Body disease patients often have the plaque characteristic of Alzheimer's disease, while people with Alzheimer's may also have cortical Lewy Bodies. This overlap leads to frequent misdiagnosis. (http://www.dementia.com).

Signs and symptoms of Lewy Body Disease

Many of the symptoms of Lewy Body disease bear a striking resemblance to Alzheimer's or Parkinson's. However, a physician familiar with LBD will be alert to the following signs that the illness is in fact Lewy Body disease:

- Mental decline: reduced alertness and lowered attention span.
- Recurrent visual hallucinations, usually related to people or animals. These hallucinations occur in 80% of LBD patients, often at night.
- Poor response to antipsychotic medications known as neuroleptics, which are usually given to people with mental health problems. In the case of a Lewy Body disease patient, however, this class of drugs may actually amplify rigidity and confusion, and can even cause sudden death.
- Increasing problems handling the tasks of daily living.
- Repeated falls.
- Sleep disturbances, including insomnia and acting out dreams.
- Delusions or depression.

Fluctuations in autonomic processes, including blood pressure, body temperature, urinary difficulties, constipation, and difficulty swallowing. (www.helpguide.org).

Vascular dementia

Vascular dementia is a degenerative cerebro-vascular disease that leads to a progressive decline in memory and cognitive functioning. It occurs when the blood supply carrying oxygen and nutrients to the brain is interrupted by a blocked or diseased vascular system. Vascular dementia generally affects people between the ages of 60 and 75, and affects more men than women.

The most common type of vascular dementia is multi-infarct dementia (MID), which is caused by a series of small strokes, or "mini-strokes," that often go unnoticed and cause damage to the cortex of the brain, the area associated with learning, memory, and language. These mini-strokes are sometimes referred to as transient ischemic attacks (TIAs), which result in only temporary, partial blockages of blood supply and brief impairments in consciousness or sight. Over time, however, the damage caused to brain tissue interferes with basic cognitive functions and disrupts everyday functioning.

Multi-infarct dementia causes loss of functioning to specific areas of the brain, impairing some neurological and mental functions and not others. When vascular dementia occurs with other types of dementia, such as Alzheimer's disease, it is known as "mixed dementia."

Signs and symptoms of vascular dementia

Signs and symptoms are varied and usually reflect increasing difficulty to perform everyday activities, such as eating, dressing, shopping, etc. Possible signs and symptoms of vascular dementia include: (Fig.2)

Physical signs/symptoms	Behavioral signs/symptoms
• Memory problems; forgetfulness. • Dizziness. • Leg or arm weakness. • Lack of concentration. • Moving with rapid, shuffling steps. • Loss of bladder or bowel control.	• Slurred speech. • Language problems. • Abnormal behavior. • Wandering or getting lost in familiar • surroundings. • Laughing or crying inappropriately. • Difficulty following instructions. • Problems handling money.

Figure 2 Physical and behavioral sign and symptoms of Vascular dementia (http://www.dementia.com).

2.5 Activities towards non Passive Behaviour in the elderly with Dementia

It has been seen that passive behaviours are among the most common behavioural symptoms of dementia, and most nursing home residents will show passivity at some point during the disease. However these types of patients are vulnerable to the effects of isolation and inactivity and are at a high risk for further cognitive and functional decline (Kolanowski 2008). Many carers do not view passive behaviours as problematic because they throw more attention to patients with behaviours like agitation and aggression.

Recreational activities have been used in research studies to reduce passive behaviours and prevent functional decline. Individuals with dementia may not be able to engage in activities they once found enjoyable, and some others may lead to frustration because of the difference between others skills for example chess and the feeling of the person that loose on the game is totally different to the one that wins. Kolanowski (2008) suggest that activities tailored to the functional ability and prominent aspects of the resident´s personality results in higher levels of engagement and less passivity than do non-tailored activities.

2.6 Human Sensory System and Ageing population

2.6.1 The somatic system and special senses

The sensations and projections in a sensory system

A definition of sensation is that it is a perception, in other words a feeling that occurs when sensory impulses are interpreted by the brain. Because all the nerve impulses that travel away from sensory receptors into the central nervous system are alike, different kinds of sensations must be due to the way the brain interprets the impulses rather than to differences in the receptors. In other words, when a receptor is stimulated, the resulting sensation depends on what region of the brain receives the impulse (Jhon W 1981). As an example, the impulses reaching one region of the brain are always interpreted as sounds, and those reaching another portion are always interpreted as touch.

At the same time that a sensation is created, the cerebral cortex causes the feeling to seem to come from the stimulated receptors. This process is called projection, because the brain projects the sensation back to its apparent source. Projection allows a person to pinpoint the region of stimulation: thus, the eyes seem to see and the ears seem to hear (Jhon W 1981).

2.6.2 Function of the senses

To better understand why the sensory system is important even for the elderly people suffering from dementia the author wanted to make a reference on how the senses work inside the human body due to the fact that sensory receptors vary from individual to individual.

Before the nervous system can act to control body functions, it must detect what is occurring inside and outside the body. This information is gathered by the sensory receptors, which are sensitive to changes taking place in their surroundings.

The receptors are divided into two main categories the first group are widely distributed throughout the skin and deeper tissues and generally have simple forms. These receptors are associated with the somatic senses of touch, pressure, temperature and pain (JhonW 1981). The second group are parts of complex specialized sensory organs that are responsible for the special senses of smell, taste, hearing, equilibrium, and vision that for this project will be very important to understand so we can activate them through the sensory room specially design for elderly people suffering from different levels of dementia. The author will be mostly concentrating on the sense of smell, sight and hearing.

2.6.3 Sensory development and changes

Sensory changes can have a tremendous impact on your lifestyle. You may have problems with communication, enjoyment of activities, and social interactions. Sensory changes can contribute to a sense of isolation. All of the senses receive information of some type from the environment (light, sound vibrations, and so on). This is converted to a nerve impulse and carried to the brain, where it is interpreted into a meaningful sensation. Everyone requires a certain minimum amount of stimulation before a sensation is perceived. This minimum level is called the threshold. Ageing increases this threshold, so the amount of sensory input needed to be aware of the sensation becomes greater. Changes in the body part related to the sensation account for most of the other sensation changes (www.healthcentral.com).

2.6.4 Sensory system effects on human beings

Regardless of health, changes occur within the body and in its surroundings, sensory receptors are stimulated, and they in turn, trigger nerve impulses. These impulses travel on sensory pathways into the central nervous system to be processed and interpreted. As a result, a person experiences or perceives a particular feeling or sensation (Jhon W 1981).

Sense of smell

The sense of smell is associated with complex sensory structures in the upper region of the nasal cavity. The smelling, or olfactory, receptors are similar to those for taste in that they are chemoreceptors, stimulated by chemicals dissolved in liquids. These two senses function closely together and aid in food selection, since food is usually smelled at the same time it is tasted (JhonW 1981). When sensory receptors are subjected to continuous stimulation, many of them undergo and adjustment called sensory adaptation. As an example when a person enters a room where there is a strong odour, he or she experiences sensory adaptation. At first the scent seems intense, but it becomes less and less noticeable as the smell (olfactory) receptors adapt.

Sense of hearing

As a definition it is the organ of hearing, the ear, which has external, middle, and inner parts. In addition to making hearing possible, the ear functions have a sense of equilibrium.

The ears have two jobs. One is hearing and the other is maintaining balance. Hearing occurs after vibrations cross the eardrum to the inner ear. They are changed into nerve impulses and carried to the brain by the auditory nerve. The balance (equilibrium) is controlled in a portion of the inner ear. Fluid and small hairs in the semi-circular canal (labyrinth) stimulate the nerve that helps the brain maintain balance. As people grow old, the ear structures deteriorate. The eardrum often thickens and the inner ear bones and other structures are affected. It often becomes increasingly difficult to maintain balance.

With the help of sense of hearing (auditory sense) a person becomes orientated to their environment and gains information about things happening around them. The sense of hearing registers different sounds, classifies the altitude and strength of voices and also helps locating where the voices and sounds are coming from and what is causing that kind of stimuli. Some hearing loss is almost inevitable. It is estimated that 30% of all people over 65 have significant hearing impairments (www.healthcentral.com).

Sense of sight

Although the eye contains the visual receptors, its functions are assisted by a number of accessory organs. These include the eyelids and lacrimal apparatus, which help protect the eye, and a set of extrinsic muscles, which move it. Vision occurs when light is processed by the eye and interpreted by the brain. Light passes through the transparent eye surface (cornea). The pupil is an opening to the eye interior. It becomes larger or smaller to regulate the amount of light that enters the eye. The coloured portion called the iris is a muscle that controls the pupil size. The inside of the eye is filled with a gel-like fluid. There is a flexible, transparent lens that focuses light on the retina (the back of the eye). The retina converts light energy into a nerve impulse that is carried to the brain and interpreted.

With ageing the pupil may react more slowly in response to darkness or bright light. The lens becomes yellowed, less flexible, and slightly cloudy. The fat pads supporting the eye decrease and the eye sinks back into the socket. The eye muscles become less able to fully rotate the eye.

As humans age, the sharpness of the vision (visual acuity) may gradually decline. Glasses or contact lenses may help correct age-related vision changes and elderly people may eventually need bifocals.

Almost everyone older than 55 needs glasses part of the time. However, the amount of change is not universal. Only 15% to 20% of older people have bad enough vision to impair their driving ability, and only 5% become unable to read. The most common problem is difficulty focusing the eyes a condition called Presbyopia. (www.healthcentral.com).

Also, in the ageing population occurs an eye disorder called glaucoma which sometimes develops as a person ages, and if diagnosed early, glaucoma can usually be treated successfully with drugs, laser therapy or surgery that promotes the outflow of aqueous vitreous gel. A relatively common eye disorder, particularly in older people, is cataracts. Here the lens slowly loses its transparency and becomes cloudy and opaque. In time the person may become blind (Jhon W 1981).

2.7 Malfunction of the senses

Olfactory impairment

Partial or complete loss of smell is called anosomia. This condition may be caused by a variety of factors including inflammation of the nasal cavity lining, as occurs during a head cold. It might be a result from excessive tobacco smoking, or from the use of certain drugs, such as epinephrine and cocaine (Jhon W 1981).

Hearing impairment

Partial or complete hearing loss can be caused by a variety of factors, including interference with the transmission of vibrations to the inner ear (conductive deafness) or damage to the cochlea, auditory nerve, or auditory nerve pathways(sensor neural deafness). This last impairment is caused by exposure to excessively loud sounds, by tumours in the central nervous system, by brain damage as a result of vascular accidents, or by the use of certain drugs (Jhon W 1981).

Hearing may decline slightly, especially that of high-frequency sounds, particularly in people who have been exposed to a lot of noise when younger. This age-related hearing loss is called presbycusis. The sharpness (acuity) of hearing may decline slightly beginning around the age of 50, possibly caused by changes in the auditory nerve. In addition, the brain may have a slightly decreased ability to process or translate sounds into meaningful information.

Hearing and vision changes are the most dramatic, but all senses can be affected by ageing. Fortunately, many of the ageing changes in the senses can be compensated for with equipment such as glasses and hearing aids or by minor changes in lifestyle (www.healthcentral.com).

The sense of vision and ageing population

Some age related eye changes may begin as early as the 30s. Ageing eyes produce less tears and dry eyes can be quite uncomfortable. Many people find relief by using eye drops or artificial tears solutions. All of the eye structures change with ageing. The cornea becomes less sensitive, so injuries may not be noticed. By the time people turn 60, their pupils decrease to about one-third of the size they were when they were 20. (Jhon W 1981).

3 AIM OF THE PROJECT AND RESEARCH QUESTIONS

Main Aim for the whole research project

For this research project the aim will be the use of non-pharmacological therapeutic methods to improve the quality of life of demented, elderly patients at Kustaankartano with the help of a multi-sensory surrounding space and reminiscence therapies that will activate the elderly through stimulation of the senses with a holistic point of view, improving relationships between carers and patients.

The research questions to start with this research are:

How therapeutic multi-sensory environment affects the ability to interact with elderly demented patients and their carers?

How does the sensory system of elderly demented patients react on a non-pharmacological therapeutic surrounding?

However, it was important to mention that in this research project there will be two study parts with different aims towards a search for the same result that will be the improvement of quality of life from the patients or users. This will be divided so that one study will concentrate on the response from a multi-sensory user-design space that is focused on how design has to do with our surroundings and that through theories it will accomplish a space that could be used by everyone regardless of the physical condition based on that specific enhanced space design.
The second part of the project will focus on reminiscence theories towards holistic care of demented patients through different complementary therapies such as aromatherapy and bright light that will focus on the homeliness and the memories of the past from the elderly patients suffering from dementia at Kustaankartano.

Aim for the multi- sensory user-design environment study

For this multidisciplinary challenge, the author will suggest the use of non-pharmacological therapeutic methods that will be able to be performed the multi-sensory space. These therapies will include the use of reminiscence therapies and the use of aromatherapy that will be described later.
The final suggestions from the design idea will be proposed, tested, analysed and refined before building it on the real designated space.

The idea is to give more tools to geronoms and they can give this tools to carers at hospitals and houses for elderly people and could even be useful tools for elderly people living independently and in some cases supervised by other professionals such as occupational therapists and rehabilitation therapists too. In the other hand this will be an opportunity in the design service area where industrial and product designers may have another point of view about who are the possible users of these type of spaces that will include innovative methods for new therapeutic areas creating a better understanding of the needs that impaired people have and for this service experience it will be absolutely necessary to create a cooperation between the geronoms and the designers.

Aim for the reminiscence study

In this part of the research report the author will focus on the reminiscence therapies that will be helpful to activate the demented elderly from Kustaankartano and will also provide better tools to the carers when they need to understand their patients from a holistic point of view to prevent them from social isolation and depression.

Through the use of reminiscence in the activating multi-sensory room the aim is to create some good experiences at a market square where perhaps some of the patients, for example those with less severe brain malfunctions, can remember when they use to go out to the market and had a cup of coffee and remember the odours whilst surrounded by friends or relatives. It will be possible to re-create that effect in this sensory room due to the fact that it will look and feel like an outdoor market with the use of aromatherapy and visual stimulations requirements that have been specifically considered by the author for this research.

To make this possible the author will give the definitions for many terms used concerning to reminiscence; from many of the previous research found where reminiscence therapies have been applied.

4 CONTENT ANALYSIS

Content analysis is a method that will use communications as units of analysis. Verbal or behavioural data is classified, summarized, and tabulated in order to understand:

- The communication process itself.
- The interiors behind the communication.
- The effect of the communication upon the audience.

This method investigates one of more of the following:

- The sender (who);
- The message (what);
- The means of transmission (how);
- The audience (tho whom);
- Why (encoding the intention of the sender);
- The effect (decoding responses to the message).

The encoding and decoding process requires inference or reasoning to analyse the data and thus may be the most intellectually demanding of all techniques of data analysis (Fox 1981).

The steps in content analysis include:

- Selecting the unit of content to be analysed;
- Selecting theory to guide the formulation of categories and coding rules;
- Developing the categories;
- Collecting the observations;
- Analysing and interpreting the findings.

Content analysis may consist only of counting words, for example the number of times a particular word is used to describe something. The sampling process may include random sampling to select words, phrases, sentences, paragraphs, sections, chapters, books writers, or contexts to be studied.

The system of classification or coding used must be carefully established and tested before data collection begins, and the system must anticipate a qualitative analysis,

especially if data will be processed by computer. Also, this method is useful to measure attitudes, as well as to identify patterns of communication between health personnel and clients (Seaman 1982).

Basic ideas of Content Analysis

When analyzing the research material, it has to be done step by step, following rules of procedure, devising the material into content analytical units.

Categories in the center of analysis: The aspects of text interpretation, following the research questions, are putted into categories, which were carefully founded and revised within the process of analysis. Then it comes to the criteria of reliability and validity where the procedure has the pretnesion to be intersubjectively comprehensible, to compare the results with other studies in the sense of triangulation and to carry out checks for reliability.

Within the framework of qualitative approaches it would be of central interest, to develop the aspects of interpretation, the categories, as neas as possible to the material, to formulate them in terms of the material. For that scope qualitative content analysis has developed procedures of inductive category development, which are oriented to the reductive processes formulated within the psychology of text processing (Mayring 2000).

5 THEORETICAL FRAME

For this research report, it was important to describe all the possible concepts of the meaning of a demented patient to design for and understand all the contents of knowledge that could be helpful to achieve this goal. It will be crucial to find scientific information about activating the elderly patients through the use of non-pharmacological therapies to stimulate the elderly people's sensory systems.

The theoretical frame will help to understand what is already known from previous scientific research-based information. The author will focus on theories concerning a holistic care point of view towards elderly demented patients suffering from dementia, and how Snoezelen theories have been implemented to help these kind of patients.

One of the main theories that the author decided to use for this theoretical frame are related to a holistic point of view towards an ageing society.

Holistic care

In this chapter the author tries to bring out different ways to increase the quality of life of demented patients where they are seen as human beings and not just elderly demented patients. To understand this, it is important to understand the meaning of care. From the theorist Jean Watson, caring is held as a moral ideal that entails a commitment to a particular end. That end is the protection and enhancement of human dignity and preservation of humanity in a chaotic, rapidly changing health care system (Watson 1988).

The ethics of moral caring and curing allows time and space for seeing and feeling. These are two main ideals that will make the multi-sensory space a place of enjoyment for carers and patients alike. Here everyone is allowed to explore the enhancements and express their feelings about what it is like to spend time in this specially designed space for them at Kustaankartano.
Caring is attending and relating to a person in such a way that the person is protected from being reduced to the moral status of an object. Here the demented patients will be

treated as human beings, having their feelings considered and not just misunderstood with the wrong attitude of reducing them to mentally impaired people. So then caring becomes the ethical principle by which curing interventions are measured. Caring becomes the moral end, by which curing is only a means (Watson 1985).
According to Watson's point of view about caring for an elderly population she mentions that old age will be made meaningful by the social and individual meaning we bring to it, not simply by better medical technology. We must set limits. A decent life and a good old age seem to me adequate goals to aim for and goals that are feasible. As a good and sensible balance, we can provide a much higher quality of care for the elderly, but this must be done at the price of limiting life-extending technology (Watson 1985).

In some other publications like *Changing services for older people* by Walker (1996), the author found that for some carers there are some tasks required while taking care of elderly patients that are considered as hard, making it sound that caring was an entirely negative experience or that they were at the point of giving up. But perhaps the same carers also gained rewards most commonly from happiness and appreciation from the older person. When the elderly are able to express their feelings towards some activity done with their carers, this is a pleasurable and enjoyable experience which creates a strong sense of closeness towards their patients making it a good experience and increasing motivation from the carers towards the older patients.
Here it was mentioned also that carers commented on emotional care, such as spending time with the older person, was an important part of the caring relationship, though it was not always easy when the person in question was confused or suffering from dementia (Walker 1996).

For this research purpose where the main users of the sensory room will be demented patients from Kustaankartano, it is important to consider that the space will be designed to be a barrier free space where it is clear that there is no rush to perform tasks and that it will be an explorative room with different activities that elderly patients can perform with their carers suggesting that it should be a place to enjoy and it should not make a patient agitated if they do not accomplish certain tasks from the activities given there.

So for this purpose the author decided that there will be two studies to discuss. Firstly we will consider the environment and the users which are carers, patients and relatives visiting patients at Kustaankartano as well as what are the desired results to be achieved from this project. Secondly, the study will consider the reminiscence therapies used to provoke good memories from the elderly patients making it seem like more of a space they usually visited when they were young and with the help of reminiscence will, create good feelings when otherwise they might be feel restless, agitated, bored, anxious or even aggressive.

Figure 1 shows the important factors of quality care for nursing home residents (appendix 1).

6 MULTI-SENSORY STIMULATION AND SPACE DESIGN STUDY

Service-design addresses services from the perspective of clients, it is what those people that will use them want to have. It aims to ensure that service interfaces are useful, usable and desirable from the client´s point of view and effective, efficient and distinctive from the supplier´s point of view (Miettinen 2009). In this case the considerations will apply to elderly demented patients that will interact with the space and the ability that caregivers must have to ensure that every time they access one of the sensory rooms with the patient, the need for relaxation or activation from these patients is fulfilled.

Important factors to consider when developing and applying design processes

Understanding the service-design challenge means understanding the users, the environment and applicable technologies according to Miettinen (2009) Whenever the author thinks about who the potential client will be, with some possible mental disabilities, it will be very important to make a first plan that will include observing, profiling, creating empathy for the users as well as participating with the users and being visually active during the whole process.

Then the design process will start by creating ideas, prototyping, evaluating and improving after analysing the interaction by the users in the space included for this purpose from both the patients and the caregivers during the process. This will be possible just by implementing new ideas for the use of the space, maintaining and developing the services.

The importance of understanding elderly demented patients before starting with a service design project

An interactive design process is based on a cyclical process of understanding what elderly clients need and the possibility to create tools to enhance their quality of life independently or in institutions. In this case the clients will be elderly people and carers at Kustaankartano care home for elderly people where some patients suffer from different types and levels of dementia. It was found according to Brown (2008) that as

the designer of the multi-sensory space as in this case, it is necessary to feel empathy for the others, notice things that other do not and utilise this to inspire innovation. Design thinkers create novel solutions that dramatically improve existing ones. They have the optimism to challenge, expose questions and explore constraints and apart from this they collaborate alongside other disciplines, which in this case will be thinking as a geronom, with a designers point of view to create this unique environment for Kustaankartano.

The author might be able to create a space that will fulfil all the requirements and characteristics needed to activate the elderly patients living in this institution despite the level of dementia each of them might be suffering. Value creation and interaction processes are thus central to service design, in fact there is research done (Miettinen 2009) where it is proposed that service design can be used as a tool for designing a more sustainable society where the focus will be on the public sector, in this case non-governmental organisations and citizens are co-creating services together. The organisation has the ambition to achieve a more patient-centred approach to healthcare. "*Experience design helps the national health services to get there*" according to Miettinen (2009). This will give a better understanding of the project that is intended to start in Kustaankartano institution and will provide value through human interaction, creating relations and understanding processes between the designer, the geronom, the carers and the patient. In this specific task design thinking will lead to innovative methods and tools to create value propositions for services by working in multidisciplinary teams, using visual and creative thinking as a source of innovation in the research and creation process.

From the beginning step by step

The customers´ journey, in this case the patients and carers, will lead to better understanding of the whole research process and here many questions will be answered through all the steps of the design process. (Miettinen 2009) proposes a five-phase design research plan that includes, discovering, conception, designing, building and implementing similar to Engine´s three phases, identify, build and measure (Engine 2009). This will be also similar to Mager´s four-phase process, discovery, creation, reality check and implementation (Miettinen 2009).

So this means that in spite of the design process for the research method that the author will use, the result will be the same and the idea is the same: to discover what can be useful and motivating for the patients and the Kustaankartano institution. In this case they will be the target group together with the care givers of the institution. Then at the concept phase, many ideas will be brought forth by the brainstorming method where everything will be written down in order to make a good selection of the best possible ideas. Here everything is valid. At the creation point and design phase will be the product design part that will include a variation of different possibilities and materials that can be the most suitable for the final prototype and further final product.

6.1 Material

For the two studies, that are multi-sensory environment and reminiscence therapy, the author looked for research articles that included studies and theories about the use of Snoezelen and elderly patients suffering from some sort of dementia. Also the focus on the interaction between the caregivers and the patients in a therapeutic environment that included some sort of 3-dimensional therapeutic or physical enhancement was important for the author.

The search for the research material started at the electronic journals available at Arcada Library through the NELLI database which showed the amount of research material available in the different databases many times and in which some of them, like Ebsco for example, it was possible to find good and new material (2008). Although in some cases after finding the suitable material it sent the author to the pricing list of such articles, the prices of which made it difficult to get some information.

Some of the keywords that helped for the database search were searched through Boolean logic that means they were synonyms combined with the word OR or AND, and in some other cases they were truncated keywords like the word elder or elderly where together with the words multi-sensory, dementia, Snoezelen, visual, tactile and olfactory stimulation. The search was directed to journals that had to do with psychology and gerontology with information in English. In some journals and many articles there was a relation between the use of non-pharmacological therapies such as stimulation to calm down the effects of agitation and anxiety through the use of

aromatherapy combined with reminiscence therapies to promote positive effects on demented patients in long term facilities by bringing down memories from childhood or motherhood through aromas.

The research material was first searched for at electronic databases starting with Google scholar and from there, after finding some articles that contained one or more of the search words such as elderly, older people, Snoezelen, sensory stimulation, environment, dementia, non-pharmacological interventions, activities, long term care institutions, Alzheimer's diseases and many others, it was important to open other more specific databases with scientific based research. Among these databases where the author found most of the articles that were free if subscribed to their journals was the British Medical Journal (BMJ) where there was some freely accessible material and some of the newest material had to be paid for by members of the BMJ group after registration. A total of 15 articles were choosen for this reaserch project.

Most of the articles concerning elderly people and multi-sensory environment were found on gerontological journals due the relevance they had to do with elderly people and at the same time were sources was from scientific based material. In the search there were many articles found but in some cases it was only possible to read the abstract, making it difficult to obtain them unless the author belonged to some institution. Although many research articles had on the main title one of the search words for this research, perhaps the main substance of the information was not relevant for this research.

Decision making on where the material will be taken from what was found after searching on the database from JOGonline where it was quite well explained when looking for certain keywords, but when trying to open the articles online, became a problem. The solution was to find them manually on printed versions from the same Journal of Gerontology and from different scientific based gerontological and nursing journals at the age Institute in the centre of Helsinki (Ika insttituti). The material was read and in some cases the author's considerations about some information was taken into account and in some other cases was deleted. For this study about multi-sensory environments many articles were found in different volumes and printed versions from the Journal of Gerontological Nursing from 2007 till 2009.

Table 2 Search process of scientific articles for Multi-sensory Environment

Search Keywords	**Database**	**Hits** **375**	**Chosen articles** **9**	**Chosen articles**
Title: (dementia or Alzheimer AND Topic: multi-sensory AND environment type of research (article) in English Less than 5 years old	JOGonline Journal of Gerontological Nursing 35(5) 2009	3	1	1.Use of Multi-sensory Environments in the Home for People with Dementia (Cheryl & Riley-Doucet, 2009)
Title: Environments AND Older People or Elderly Less than 5 years old	JOGonline Journal of Gerontological Nursing 34(6)2008	27	1	2.Therapeutic Environments for Older Adults: Constituents and Meanings(Edvardsson 2008)
Title: Non-pharmacological Interventions AND Dementia Less than 5 years old	JOGonline Journal of Gerontological Nursing 35(3) 2009	25	1	3.Effectiveness of Community-IBased, Nonpharmacological Interventions for Early-Stage Dementia.(Burgener, Buettner, Beattie andRose 2009)
Title: Activities AND Older People or Elderly Less than 5 years old	JOGonline Journal of Gerontological Nursing 34(4)2008	84	1	4.A Revised Index for Social Engagement for Long-Term Care (Debby ,Gerritsen, Steverink, Dinnus Frijters, Hirdes, Ooms, and Ribbe 2008)
Title: Activities AND Older People or Elderly Less than 5 years old	JOGonline Journal of Gerontological Nursing 34(1) 2008	84	1	5. Puppy Love for Older Adults (Johnson Rebbeca A. & Gayer Andrea 2008)
Title: Health AND Dementia Less than 5 years old	JOGonline Journal of Gerontological Nursing 35(3)2009	80	1	6. Promoting Health in Early-Stage Dementia : Evaluation of a 12-week Course (Buettner & Fitzsimmons 2009)
Title: Health AND Dementia Less than 5 years old	JOGonline Journal of Gerontological Nursing 35(3) 2009	80	1	7.Cognitive Training for Early-Stage Alzheimer's Disease and Dementia (Yu, Burgener, Cunningham, Buettner, Beattie, et al. 2009).
Title: Long term facilities AND Care AND Elderly Less than 5 years old	JOGonline Journal of Gerontological Nursing 33(11) 2007	153	1	8. Initiating Person-Centred Care Practices in Long-Term Care Facilities (Crandall, White, Schuldheis &Talerico 2007)
Title: stimulation AND Elderly AND quality of life Less than 5 years old	IMUSE own research data base. University of Sunderland 2007	3	1	9. Visual-Music Vibrations: Improving quality of life for the elderly and children with special needs. (Ellis, Brown and Van Leeuwen 2007).

The findings from the searches in table 2 can be found in appendix 2.
Here are the 9 articles that the author chose for this study. Although there were more articles, the most suitable ones for this purpose appear in this table and further more in the appendices are the findings and results from each of them with more detail.

6.2 Results

In this case the author will address the clients, the elderly patients and staff from the Kustaankartano institution. Also, she must be capable of visualising what kind of interest appears from an object that will be created for the patients suffering from dementia at Kustaankartano. The author also needs to formulate all sorts of possibilities such as shape, form and function, materials, distinctive elements to create attention, interpret possible problems that might happen in the future such as object life-span, care, how the object is used, observe the reactions from the clients and behaviour towards the designed object, take notes and evaluate it before a final prototype and further creation of the product.

The results from the search on the databases focused mainly on the fact that these 9 articles had to do with elderly people regardless of their mental health and how they will become integrated into a therapeutic environment due to the different therapies applied in such space and due to the enhancements these places have for them. The articles that were selected were read two or three times to understand and create interventions to form the categories, and subcategories which contained ideas ,frases and words that were repeated many times and were underlined with a different colour . Then, from that the selection, the author went on to choose the ones with more appropriate content and which had to do with activation or enhancements regarding the spaces that had some three dimensional enhancements for elderly and the reactions from the patients towards this space.

Table 4. Categories and results of Multi-sensory environment

Activity	Interventions	Sub categories (findings)	Categories (results)
	Multi-sensory environment	Emotional experience from the multi-sensory environment through: -Exploration -Expression	-Increase of sense of well being
Interaction between demented elderly people and a multi-sensory environment	and	through:	and
	Therapeutic environement	-Interpersonal relationships -Assessment -reduced anxiety	-From isolated to communicative and -From inward to interactive

Table 4 Categories of the Multi-sensory study can be clarified by referring to the diagram found in appendix 3

These results suggest that when exposing the demented patient to interaction within a multi-sensory environment the carers can work within the same multi-sensory space and that will simultaneously work as a therapeutic environment where it will be possible to observe the emotional experiences that will occur after being exposed to these type of spaces. It will create an impact on the way they will interact with their carers and others. The possible and expected outcomes from the patients after receiving this type of therapy are a sense of well being, a sense of trying new things or perhaps new performance from the activities they liked the most and this will also be shown through an obvious reduction of anxiety and an improvement in communication.

Interaction between design and elderly people

Although much of the literature supporting the use of a Multi-sensory environment (MSE) in people with dementia remains anecdotal most reports indicate that the use of environmental modalities to promote a sense of well-being and reduce anxiety and

agitation in people with dementia has been increasingly accepted in nursing homes (Melillo 2005). The MSE has been discussed in nursing literature as a successful environmental modality used in long-term facilities to produce a sense of calm in people with dementia and has been shown to be an acceptable alternative therapy in the care and treatment of people with dementia. It has also been reported to aid in communication and improvement of interpersonal relationships. (Melillo 2005)

For this purpose the author (Melillo 2005) in his research used a qualitative research design. The sample was participants older than 65 years old with a confirmed medical diagnosis of dementia and their primary caregivers. A portable Snoezelen kit was provided with specific sensory equipment chosen according to the cognitive impairment and some of these equipment descriptions were a bubble tube, evening breeze, chase light string, plasma ball, solar effects projector, stereo and speakers for music, vibrating tube and aroma air spray. Semi- structured interviews were performed together with patients and caregivers for about 45 minutes where they explained the experiences of using this non-pharmacological therapy instead and the findings had shown that environmental modalities can promote a sense of well-being and reduce anxiety and agitation in people with dementia.

Caregivers at home described themselves as feeling more connected with their mental impaired relatives while interacting with them in the multi-sensory environment and that interpersonal relationships were improved. Also the behavioural changes in the person with dementia after the exposure to the MSE were described as more relaxed and responsive to the environment and other family members. These results were compared with some findings described in the literature. Baillon (2002) found that long-term care residents demonstrated an increase in relaxation and a reduction in restlessness during sessions and were also more alert and less bored or inactive after sessions. Relationships with others were better afterwards too. On the negative side, findings had shown that some caregivers had one major frustration, which was that the MSE did not appear useful in providing a ”distraction” for their relatives that would provide the possibility to leave the resident alone and allow the relative to have a rest (Cheryl & Riley-Doucet 2009).

6.3 Categories of the Multi-sensory interventions

6.3.1 INCREASED SENSE OF WELL BEING

Through a Multi-sensory Environment

This will be the area that the author will be more focused on because for the Kustaankartano institution, the final project will be a multi-sensory 3-dimensional environment for elderly people where they will be able to enjoy stimulation of all the sensory systems together with their caregivers and relatives.

According to Cheryl & Riley-Doucet (2009) in a pilot study research about the use of multi-sensory environments in the home for people with dementia, it was found that the use of Snoezelen equipment was a very good experience for caregivers and demented patients when they tried it at home with a certain time limit that the author found that it can be enlarged with frequent use of the equipment and in some cases the therapy could be given at least twice a day or to prevent restlessness and agitation.

For one study was important to find the negative and positive effects of the use of multi-sensory environments at home from a group of patients where it followed up the behaviours of the person with dementia, the caregiver burden and family interpersonal relationships. Here it was also found that the use of an MSE to promote a relaxing and calm environment at home, helped the person with dementia attend more to their immediate surroundings, and to improve family interactions.

Through Exploration

It was found that it is important to state that exploration, not only of facts but of feelings and meanings, should be a feature of communication with older people. The evidence suggests that professional communication is often limited to the necessary for finding a

practical solution to a specified practical problem (Rowlings 1985). Thus the emotional, social and developmental aspects of older people´s lives have often been ignored. Again, the use of exploratory techniques requires sensitivity and judgement, and should not be applied unnecessarily or prematurely. However, providing the opportunity for exploring areas of life other than those central to the practical problems of daily living is recognition of our acceptance that older people are not one-dimensional, but have inner lives and interpersonal relationships like other people (Huges 1995).

Emotional experience from the multi-sensory environment

On the research articles a study from Cheryl & Riley-Doucet (2009) refers to a group of caregivers that after realized an observation process of the patients with dementia that were exposed to the multi-sensory environment. They found that the patients were more relaxed and cooperative during the sessions and at some point it was also reported that many of this patients even enjoy the time they were using the multi- sensory space for some amount of time. The average age of the users from this study was 83 years old and they were mainly elderly women with dementia, most of which were widowed.

The environment is one of four grand concepts of nursing (Cheryl & Riley-Doucet 2009). The MSE consists of elements that will stimulate the visual, auditory, tactile and olfactory system usually offered to patients in a specially designed room or environment through a variety of lights, music, aromas and tactile objects. Although there were positive and negative sides during this pilot study research. The aim of this study was to find out whether the possibilities of the use of an MSE at home would provide a better experience for the caregivers while reducing stress when their demented relatives suffered from agitation and anxiety. An emphasis was made on the importance of customizing the sensory stimulation to suit the enjoyment of the person with dementia. There was the concern about the use of Multi-sensory therapy as a non-pharmacological therapy instead. (Cheryl & Riley-Doucet 2009).

6.3.2 From inward to interactive

Through Therapeutic Environments

It has been discussed about the therapeutic environment that health and well-being can be improved by supportive surroundings, as people are in constant relationship with the environment. Florence Nightingale is recognized as the first nurse theorist to focus on the environment´s role in nursing. She stated that the main function of nursing is to aid the body´s own means of recovery by enhancing the therapeutic function of the environment (Watson 1998).

In more recent caring literature, theorists such as Watson (1985) have focused on the inter-relationship between human beings and their environment. The participants described that the physical environment, people´s doing and being in the environment and the organizational philosophy of care were interwoven and interacting dimensions, which together created what was described as the spirit, climate, or atmosphere of the environment. (Edvarsson 2008),

According to the research from Edvarsson (2008), the physical environment was the stage for, influenced, and to some extent, regulated interaction and behaviour in the settings. In a research study Edvarsson (2008), found the meaning of therapeutic environment, and it also gave interpretations of the data collected in Swedish health care where three main categories were found. These are the physical environment, peoples doing and being in the environment and an organizational philosophy of care. The findings from this study can contribute to nursing practice by providing a conceptual basis for reflection and evaluation how the physical environment, staff´s doing and being, and the organizational philosophy of care cooperate to support well-being among older adults living in long-term care facilities. (Edvarsson 2008).

Through Assessment

According to Huges (1995), the assessment is fundamentally important to health and welfare practice, due to the fact that it provides the basis for an intervention and gives the criteria on how effective an intervention can be. In this case it will evaluate the

quality of intervention the carers are giving to the patients if poor, limited or superficial assessments result in partial, inadequate or unsuitable responses to users and carers. A good basis for an intervention comes from a professional knowledge and experience to a specific need.

The process of assessment incorporates a number of key components and involves the assessors (including users and carers) bringing to view a wide range of observational, communication, interpersonal, cognitive and analytic skills, and is all about understanding. The concept of quality of life of older people has been the subject of considerable research and academic interest (Huges 1995). The concept of risk has been recognized as being important in so far as older people have been defined as dependent or vulnerable. However the concept offers a starting point for the development of an approach to assessment which is systematic, holistic and incorporates the principle of user and carer participation. From this starting point, the purpose of multidisciplinary assessment becomes the assessment of quality of life and risk. (Huges 1995).

The scope of assessment will vary between individuals and be dependent upon a range of factors from the quality of life and the nature or level of risk faced by a carer and a patient or user.
The content of the assessment should integrate the user and carer perspectives at all stages of the process, and not simply add on their views at the end. The factors or aspects of life which determine quality of life:

The framework for a good assessment according to Huges (1995) should include:

- Regard the older person and carer if appropriate as a human being and the centre of a network of personal, familial and social dimensions, which together determine his or her quality of life and level of risk.
- Provide a mechanism for identifying the perspectives and views of the user and carer, and other professionals, on each of these dimensions.
- Incorporate an approach which examines each dimension not only in term of deficits (needs and risks), but also in terms of the strengths and resources which enhance quality of life and reduce risk.

6.3.3 From being isolated to communicative

Through Interpersonal Relationships

It was observed that although patients in the geriatric psychiatric day treatment program sat next to one another for 6 hours a day, they did not interact with one another and that the group sessions offered throughout the day did not provide specific activities to encourage social interaction among the patients (Field 2008). According to the research about the use of reminisence through group activities, it was found that the activities in the group reminiscence therapy intervention developed the awareness of older adults as individuals with talents, interests, self-identity, and capacity for sharing with others from the staff point of view and this means that they enjoyed this new intervention and were pleased with it in their program´s activities where they also saw that patients enjoyed it a lot. (Field 2008).

Another research (Debby 2008) aimed for a better understanding of the behaviour among elderly patients in long term facilities and here it was observed how they interacted with others and those with mild dementia were identified and graded with social behaviour instruments where some of the considerations observed were; if they were actively making contact with others, the reaction to others, their conversational skills, attitudes during interaction, the interest in the environment, the social relationships and initiation of activities.

The focus of the study was the point of interest on the ability to interact by demented elderly with non-pharmacological strategies where it was suggested the creation of Health promotion programs. These findings identify well-supported non-pharmacological treatments for persons with early-stage dementia and implications for a national health care agenda to optimize outcomes for this growing population of older adults. Findings focused on four major domains that were the creation of early-stage support groups, cognitive training and enhancement programs and exercise programs. (Buettner 2009).

The research from Crandall (2007) focused the attention on a key concept guiding for a methodological approach where there were suggestions for a person-centred care culture

change among residential homes for elderly patients where the most important was a deeper understanding about what person centred care is, the characteristics needed to support it, and ways to help organizations achieve and sustain this goal. Elements of person-centred care included person hood, knowing the person, maximizing choice and autonomy, comfort, nurturing relationships and a supportive physical environment. (Crandall 2007).

The research from Yu (2009) focused on the neuropsychological rehabilitation in Alzheimer's patients to optimize functions, minimize excessive disability risk and prevent the development of negative social psychology. To achieve this it needed continuously reality-based communication and orientation with the patient with Alzheimer’s disease throughout the day. The main focus was on cognitive training that used non-pharmacological intervention designed to improve cognition. And here the focus was on daily living activities where they engaged patients to perform.(Yu 2009).

6.4 Limitations of the study

In this case the limitations suggest that if these types of interventions are very popular then the carers at Kustaankartano have to organize how they will work with their patients in this space. The author suggests that at least the multi-sensory space can be used by two to three patients with one caregiver at a time with each patient because it will be divided in three different sections. For the author it is important to build the space and know through observing how this space really works with the patients in it. It is important to create a sense of well being not just for the patients, but also for the caregivers so they will also enjoy themselves while in this kind of space.

7 REMINISCENCE THERAPY STUDY

From the reminiscence background, according to the theory of Aristotle he found out that" older people live by memory rather than by hope, for what is left to them of life is but little compared to the long past" then in the late 50´s and 60´s reminiscence was regarded as symptom of mental deterioration, a failure to maintain contact with present-day reality and a potentially harmful process. Reminiscence is now regarded as a normal, if not essential, element of successful old age, an opportunity to enjoy pleasant memories from the past or to revisit unresolved conflicts and make sense of them (Scrutton 1989) here the author pointed out five reasons for its importance.
Reminiscence highlights older people´s assets rather than their disabilities, it can enhance their feeling of self-worth and self-esteem, it can help older people to recognize their individuality and identity, it can aid the process of life review and it is an enjoyable and stimulating experience. According to Scrutton (1989), elderly become less restless and less anxious about their present situation, they show a reduction in confusion and forgetfulness, they become calmer and more attentive, their mood lightens, and there is a greater willingness to share their feelings about the present with their families and relatives. This is one reason why the author will focus on the reminiscence therapies for the sensory space at Kustaankartano. Many older people gain great pleasure from reminiscence, especially those who have lost close friends.

Also from theorists Buchanan and Middleton (1994) refered on the reserch from Scrutton(1989) , it was pointed out that there has always been confusion about whether reminiscence is a recreational activity or a therapeutic technique. The two of them are mutually exclusive, reminiscence can be helpful or unhelpful and it will depend on the carer how he or she works with it and the elderly patient. Mental health problems can result in altered social and emotional behaviour and may eventually lead to personal suffering and collapse. The sensitive use of memories can help older people to retain a positive sense of self and provide a frame work for serene old age (Scrutton 1989).

Definition of Reminiscence

According to Puentes (2008), the term reminiscence is a term referring to the use of memories to accomplish various psychosocial functions and there are three kinds of reminiscence: social reminiscence, life review, and simple reminiscence. The social reminiscence will help to understand how memories can be used for individuals to fit in and interact with others. Through the use of life review, people develop an understanding and appreciation of themselves as individuals (Butler 1963). Simple reminiscence involves the use of memories to help individuals cope effectively with current stressors by letting them see how they coped with similar stressors in the past (Puentes 2002).

7.1 Material

For this part of the research the author considered the use of reminiscence and and the use of aromatherapy as complementary therapies and found material that included both reminiscence theories and aromatherapy theories used for elderly demented patients where they observed good results from both alternative or complementary therapies; so it was suggested to continue researching and working with these elements in long term care patients suffering from dementia.

Some of the articles were chosen when they had something relevant according to the authors´ research requirements. Although some of the articles used for this research were found from 2002, due the small amount of research done in the aromatherapy and the Snoezelen field, they were considered good starting points to continue from with more research in this field that includes elderly demented and the possibilities of non-pharmacological therapies.

Most of the articles made emphasis on the therapeutic environment as a tool of reminiscence therapy together with the different applications for these surroundings with the help of light and aromatherapy to improve stimulation to manage with behavioural problems such as management of anxiety, agitation etc. In addition, one of the articles used for the previous study was also taken in this group due the importance of engaging elderly people into more activities instead of getting more passive with

time. And in some cases the help of long term friends as a part of the rehabilitation of elderly patients to engage them into different kind of activities. Most of the articles from aromatherapy had been found through the BMJ (British Medical Journal) database and some of the articles had been published in some other databases such as Cochrane and Pubmed. So by joining one of these databases as a member, it was possible to access to material containing the same keywords but from different authors. The results of table 4 can be found in appendix 4.

Table 4 Search process of scientific articles for Reminiscence therapy.

Search	**Database**	**Hits** **486**	**Chosen articles** **7**	**Chosen articles**
Title: Sensory stimulation AND Dementia	Google scholar , Cochrane Library, BMJ	391	1	1.Sensory stimulation in dementia: An effective option for managing behavioural problems.(Burns,Ballard & Byrne 2002)
Title:Reminiscence	JOGonline Journal of Gerontological Nursing 34 (12) 2008	4	1	2.Promoting Positive Student Clinical Experiences with Older Adults Through Use of Group Reminiscence Therapy (Field, Roholff & Ryan 2008)
Title:Reminiscence	JOGonline Journal of Gerontological Nursing 34 (7) 2008	4	1	3.Using and Associational Trends Framework to Understand the Meaning of Obsessive Reminiscence(Puentes 2008)
Title:Environments AND Older People	JOGonline Journal of Gerontological Nursing 34(6) 2008	27	1	4.Therapeutic Environments for Older Adults: Constituents and Meanings(Edvardsson 2008)
Title: Aromatherapy	BMJ, Royal college of	62	1	5.Aromatherpy in dementia

AND Older People OR Elderly AND Dementia	psychiatrists.			(Holmes &Ballard 2004)
Title: Snoezelen AND Dementia	Cochrane		1	6. Snoezelen for dementia(Chung & Lai 2002)
	JOGonline Journal of Gerontological Nursing 34(1) 2008	2	1	7.Prescribing Activities that Engage Passive Residents: An Innovative Method (Kolanowski & Buettner 2008)

7.2 Results

The results from the search of reminiscence and elderly people focused interest mainly on the fact that the author tried to find out which were the non-pharmacological therapies or activities applied to elderly patients suffering from symptoms of depression, anxiety, withdrawal, aggression etc. In the search, the word Snoezelen appeared as a stimulation therapy of children and elderly people with some mental disorder and the words memories, stimulation through aromas, aromatherapy, and reminiscence also appeared.

The author decided the articles which had to do with the elderly and these kinds of therapies were suitable for this study. It was important to find that many authors had been concerned about the fact that in many places some symptoms of depression are cured with drugs so this research approach will try to give more options to this problem as well as alternatives for the carers. So the goal is to improve elderly patients quality of life and also improve the caring towards these patients so the carers can also find another way to care for the patients making it more of a learning process where they can improve and change all the time, making it more pleasant for everyone.

In Table 4, the main findings from each article chosen are displayed according to the content for this whole research work and how the categories get formed. However it is important to mention that some of the categories appeared in the previous multi-sensory environment study because they have the same goal that is to improve quality of life through a holistic care point of view.

Table 6. Categories and results of Reminiscence therapy

Action	Intervention	Common fact	Subcategories (expected results)	Categories (Results)
	Physical environment		Bright light	-Awareness and well being -Mood improvement through response to restlessness.
Reminiscence therapy and demented elderly		Homelikeness		
			Aromatherpy -Improved sleep	-Perception association and reaction
	Personality		Friendship among elderly people -communication	-Openness and interaction

Table 5 Categories of Reminiscence interventions study can be clarified by refering to appendix 5

These are the main findings from the reminiscence therapy study where if suggesting a care that onsets the use of reminiscence therapy to the demented elderly. We can work through the help of a physical environment that uses the homelikeness ideal that there will be elements that will make the space look like the previous home from the patient's point of view and for this photographs or other elements from home will help. Combining these elements with the use of bright light to make the physical space more likely to be a relatively relaxing place to help these patients to obtain a sense of well being and awareness, making improvements on the mood and helping them to respond to restlessness.

In the other hand if the carer decides to use the personality feature as intervention through a place that feels homely where perhaps it is a place that look like the places these patients used to visit as young adults with their friends, they will also achieve better interaction with other patients, carers and relatives and will also create a feeling of better openness to new things and events happening in their surroundings.

7.2.1 Reminiscence therapy and demented elderly

When thinking of the physical environment or space where elderly demented patients will start with some therapeutic treatment, it is important to consider how the space should be in appereance. For example, by the use of the elements in the space it may be possible to bring back memories on how the previous home of these patients used to look like thereby creating a homely feeling. It should also be considered how it should smell like. Perhaps the smell of some baked bread might bring memories from their childhood and improve their mood, many things have to be taken into account. In this case, the use of photography, light, textures, colours and the space itself will be crucial for better recovery.

Bright light is effective in the treatment of seasonal affective disorder (Avery 2001), which together with aromatherapy seem to be safe and effective and may have an important role in managing behavioural problems in people with dementia. Here, the use of aromatherapy will affect the psychological aspects of patients when getting some treatment to improve the quality of life in long term care units. Aromatherapy will help the individual to associate certain pleasant odours with things from the past and it will also be possible to improve their mental health through reminiscence. In this case, sleeping disturbances will also diminish with the use of pure essential plant oils that can be applied in different ways such as fragrances or in tissues or massaged into the skin.

When thinking about a reminiscence therapy it was found that elderly patients seemed to respond positively and enjoy learning from others that shared similar previous life experiences. Also they displayed increased skills in sharing with others, and better relationships towards others. (Field et al 2008). When considering a reminiscence therapy it is useful to think that it will be a starting point for contact, it will provoke

memories from the past. It can help the patients to find themselves as a meaning in their early lives.

From here the author will concentrate on two areas, at first will analyze the physical environment and how it affects the individual through homeliness and which are the elements needed to make this possible and that in this case with the help of bright light therapy and aromatherapy it will be possible to achieve more goals towards improving the elderly quality of life. On the other hand will focus on the personality of the elderly people and how this affects the interactions among them and their carers and how it can improve through openness to new experiences and friendship among elderly patients and carers.

7.3 Categories of Reminiscence therapy interventions study

7.3.1 Awareness and well being

Through Physical environment

During the whole process of the data collection, from the observations about the therapeutic environment it was found that environments that incorporate familiar objects, that facilitate patients understanding of what is happening, and in which caring is done through the physical environment were described as therapeutic and as supporting of homeliness. When the author (Edvardsson 2008) pointed towards the interpretation from the interviews done, it had that therapeutic environment means being in a place in which it is possible to recognize oneself and experience as a whole, a connection to others via significant things and place.

When considering something new in the surroundings, the patients became aware of the space and forgot about their illnesses and thought about something else. Objects like paintings, aquariums, etc. shift focus from oneself to the environment. This helped the patients gain energy and helped them to forget about their own situations for however short moment (Edvardsson 2008). When considering scents and sounds for the outdoor market in the literature it was found that these contributed to impressions of the

environment and influenced the well-being of both patients and staff improving their everyday activities and quality of life. For example the smell of baking or the familiar scent of coffee in the afternoon could contribute to an experience of recognizing oneself in the environment and facilitating the feelings of homeliness.

Through Homelikeness

The word homelikeness varies depending on the culture and country from each individual and has been debated in literature if it means the use of furniture from certain eras or does it involves routines, actions and events that happened at certain times for each person. It was shown that receiving care in a dark, environment in the basement of a building was described by interviewed patients as conveying symbolic meanings of shamefulness and stigma (Edvardsson 2008). In contrast, familiar objects such as flowers, curtains, tablecloths and furniture brought back meanings of everyday life, in which illness was less in focus. Also it was found in literature that the physical environment influenced interaction and behaviour. This means that the environment could support the possibility of creating and maintaining social relations by creating a better space to receive visitors and enhance social interaction. This will be the case of the final outdoor market square, where the idea is to create a room where by working with 3-dimensional objects with textures and scents, every visitor of the space could enjoy it from different points of view according to Snoezelen concept. At the same time it would have the option of interaction via social space between patients of Kustaankartano, caregivers, and relatives of the patients.

7.4.2 Mood improvement through response to restlessness

Through bright light therapy

Bright light is effective in the treatment of seasonal affective disorder, together with aromatherapy seems to be safe and effective and may have an important role in managing behavioural problems in people with dementia.

In one of the studies from sensory stimulation in demented patients from (Holmes 2004), it was found that the use of bright light was effective when sitting in front of a

light box with the entire visual angle subtended by the light source. Here it was explained that the amount of light is important (up to 10 000 lux compared with average office light which is 300 lux). Some patients were exposed to this type of light and in three controlled trials it was found that the effect of bright light on sleep disturbance and behavioural disorders in dementia help with restlessness, but a particular positive and beneficial role in managing sleeping disturbances was also found in people with dementia through this light therapy.

7.4.3 Perception, association and reaction

Through Aromatherapy

Aromatherapy is the use of pure essential oils, highly fragrant essences extracted from plants by distillation. The application of plant essential oils in aromatherapy has been recorded for thousands of years, and knowledge of the distillation and application of the essential oils to improve general well-being and specific health problems was introduced into Europe as early as the 10th century. Plants such as lemon balm, lavender, chamomile, bergamot, neroli and valerian, have been used in medical herbalism specifically for their perceived beneficial effects on mental health problems such as anxiety and depression. Concerning the improvement of dementing illnesses, lavender and lemon balm are of particular interest on account of their supposed sedative and/or cognitive enhancing properties and more recently, because of emerging supportive neuro-chemical and clinical studies (Holmes & Ballard 2004).

From the psychological aspects of the aromatherapy it was found that a number of psychological responses to fragrant odours are possible, but they include the individual´s perception of whether a particular odour is pleasant or unpleasant and the individual´s past associations with that odour. Over the past few years a number of clinical trials have compared aromatherapy mainly with the use of lavender or lemon balm with inactive treatment and it was proved that there was a significant impact on behavioural problems in patients with dementia without side effects.

For many patients, as they have their own way of perceiving the odour, the associations will differ from person to person and this also means differences on the psychological effects of odours and how it will affect and influence the treatment. The authors Ludvigson & Rottman (1989) and Degel & Koster (1999) found out that a high concentration of most odours, even when in small quantities may be considered pleasant, can be unpleasant. This also means that cognitive functioning and concentration tasks were affected by lavender. The marked association of odours with emotional response is due to the prominence of afferent links from the olfactory bulb to the amygdala, where emotional significance is attached to incoming stimuli (Holmes &

Ballard 2004). Each person has a different way to experience an odour and this will affect the way to respond to it, for some will be pleasant and for others unpleasant.

On the other hand the difference between psychological mechanisms and pharmacological mechanisms for aromatherapy will be on the fact that here it will not be any perception of the odour included, but the effects will come from the compounds of the odour entering the body and acting directly on the brain when we inhale and this will be detected through the lungs or olfactory mucosa. In the case of demented patients the aromatherapy might have its effects in the absence of any psychological perception of the smell since they may be anosmic because of the early loss of olfactory neurons (Vance 1999).

Sleeping improvement

The clinical studies report according to different authors (Ballard 2002) that the use of aromatherapy oils for the treatment of behavioural problems in people with dementia is largely unexplored in case control studies. In one of the earliest investigations made by Henry et al (1994), a cross-over study in nine patients to look at the effects of lavender on sleep patterns in dementia, it had shown an increased duration of sleep. Then later with other studies it was validated that the use of lavender oil was as effective in controlling poor sleep patterns as was the drugs these insomniac psychogeriatric patients with dementia were taking to improve their sleeping disturbances. In another study from (Brooker et al 1997) where patients with senile dementia were exposed to ambient lavender, massage with lavender oil, massage without oil and no treatment during a 3 month period in 10 sessions lasting each 30 minutes, the findings were that the patients who got massage with lavender oil showed a significant improvement in behaviour in the hour after treatment. Ballard et al (2002) made the largest placebo-controlled study where 72 patients with severe dementia were treated with lemon balm essential oil and demonstrated improvements in behavioural symptoms and also indicated secondary improvements in quality of life and activities (Holmes & Ballard 2004).

As a conclusion it is shown that improvements occur in demented patients after the exposure to lavender oil (lavendula angustifolio or Lavandula officinalis) or lemon balm

(Melissa officinalis) but as a shared problem all the authors found that the aromatherapy treatment has to be tested more on larger placebo-controlled trials and that the use of aromatherapy has no side effects on patients if used together as an adjunctive therapy with their psychotropic medication and that it cannot be used as an alternative to sedative drugs in people with severe dementia. And according to Holmes & Ballard (2004) there are several critical methodological issues to consider in trials using plant essential oils. As most people with severe dementia have lost any meaningful sense of smell, a direct placebo effect from a pleasant-smelling fragrance is an unlikely explanation for the positive effects of aromatherapy treatment. (Holmes & Ballard 2004).

7.4.4 Openess and interaction

From individuals´ Personality

According to Digman (1990) the taxonomy of personality traits known as the Five-Factors Model (FFM) consists of five major personality traits: neurotism, extroversion, openness to experience, agreeableness, and conscientiousness (Mc Crae 1996). Mainly, the author will focus her interests in the last two personality traits. In the research that was a literature review from different research articles; it was shown that extroversion and openness comprise an individual´s style of interest and are domains associated with leisure interests so in the case of extroversion the personality domain reflects the amount of social stimulation preferred by the individual; here the facets found were warmth, assertiveness, activity, excitement seeking, and positive emotions. In the case of openness it is a personality domain that reflects a need for novelty and a curiosity of the world (Mc Crae 1996). Openness includes the facets of fantasy, aesthetics, feelings, openness to action, openness to ideas, and openness to values. People who are high on this trait enjoy the unconventional, whereas those who are low on this trait prefer the more familiar. So for this project it will be important to provoke feelings of well being surrounded by a friendly space, new for many of the users in a high sensory environment where the users will be able to enjoy it despite the level of dementia they suffer.

Clinical observations have long suggested that personality change is a feature of

dementia. Early studies indicate that individuals with dementia become significantly more passive and less spontaneous after onset of the disease. (Mc Crae 1996).

Through Friendship among elderly people

For nearly everyone, it is very important to have friends and is prevalent in middle age and later life. Many people who have a lack of family members tend to compensate by turning close friends into fictive kin. People at the middle of their environment's safe range can have friends of a wide variety of ages, and those at the top end of the age range can have friends only their age or younger. Adults for example are generally not open to age integrated friendships. (Armstrong 1990).

However, people in their late 70´s and older, tend to develop younger friends, perhaps as a shield against loneliness (Armstrong 1990). In a longitudinally study it was found that it was difficult for the oldest-old people to sustain a high quality friendship that they perhaps had enjoyed in their earlier lives due disabilities.

Compared with women, men have fewer friendships and do less to maintain friends, but older women tend to have close friends other than their husbands.

Long-term friends are the only ones with whom elderly people can reminisce about their childhood or early adulthood with. Short-term friends help us through immediate changes in roles. When elderly people become disabled, usually only their closest friends can be expected to make the effort required to continue to include them in group leisure activities (Armstrong 1990).

Through Communication

During the research process the author found out that the skills involved in communicating with older people are essentially those required for good professional communication with adults generally, with the important fact that they must be applied within the context of understanding of the experience of ageing and the impact of ageism. At the level of interpersonal interaction, this implies at the outset a power differential between worker and older person which may interfere with communication, and therefore particular account needs to be taken of it. The skills employed in any one encounter will also vary according to the purpose, content, and abilities where it can be

seen if the older person experience any impediments to communication and can be psychological, physical, and mental (Huges 1995).

Communication it is the most fundamental level in a social process. The focus is mainly on talking rather than on listening. Communication theory however, stressed that effective listening and attending to non-verbal communication, conversational themes, and contexts are even more essential to successful communication.
Elderly people generally do not expect personal care from their friends, they tend to appreciate getting it more than they do from family, whom they see as obligated to provide care, in the other hand getting social support when needed has positive effects on a person´s sense of well being. Social support can also reduce the need for institutional care (Huges 1995).

7.5 Limitations of the study

Obsessive reminiscence

When the psychodynamic processes associated with simple reminiscence are interrupted or individuals are unable to complete the process because of a lack of psychosocial resources or overwhelming stress, individuals can become stuck on certain memories and begin to obsess or ruminate about them (Lo Gerfo 1980). Discussions of obsessive reminiscence tend to focus on the disruptive and distressing behaviours associated with this phenomenon. As a result of this focus, obsessive reminiscence is identified as non-purposive and dysfunctional.

Here it was found that there are three kind of reminiscence: informative, evaluative, and obsessive. Following discussions of the first two, it was noticed that both informative and evaluative reminiscence can become obsessive and dysfunctional. This negative view of obsessive reminiscence as a dysfunctional activity was also discussed by Puentes (2008). There were statements of guilt, despair, or bitterness about one´s past as evidence of obsessive reminiscence.
A nursing intervention that is often used with elderly patients it is defined in the nursing interventions as ”*using the recall of past events, feelings and thoughts to facilitate*

pleasure, quality of life or adaptation to present circumstances" by Dochterman (2004). It has the potential to reduce social isolation, improve cognitive functioning and depression, and increase self-esteem more effectively when provided for six to 12 sessions lasting 30 to 45 minutes each and when the group members have the same interests. The use of photographs is more effective in improving well being than goal-directed crafts or games or groups with no structured activity. (Puentes 2008).

For this research it was important to emphasise on the roll that nurses have towards the demented patients where with the help of an associational trends framework nurses can understand obsessive reminiscence that requires the effective synthesis of several fundamental nursing skills; development of effective interpersonal skills, effective listening, and using the client's personal history to provide a context for interpreting the cognitive and affective themes of the communication process. In all cases, good listening will be a clue for better understanding regardless of the mental condition from the demented patients.

8 CRITICAL DISCUSSION OF THE PROJECT

With the previous analysis from the research done, the author will try to design an effective method and the tools to help to improve the quality of life from the demented patients in a long term care at Kustaankartano. Here with the help of design for all, together with the holistic care theories will be an effective way to help patients change from being dependent through sessions at the multi-sensory space designed specifically for them. It will be responsive and the goal is that the patients could even be more independent while being exposed to the sensory room.

A lot will depend on the motivation to use these tools from the caregivers, and one of the ideas is to make them feel more comfortable when working on the therapies with the demented patients and that also they can enjoy the space that will try to avoid the feelings of burden if the patient is not responsive.

The idea to activate these patients will be through the exploration of their environment by enhancements designed specifically to be enjoyed and a space free of failure so it doesn't matter if they accomplish a task or not given by the caregiver. In some cases the idea will be that patients can also express if they like to be there and which are the enhancements they liked the most during a certain time inside of this sensory space.

The space will allow preferably from 1 to 3 patients together with their caregivers because it will be divided in 3 different sections that will include a space to have some place to sit and enjoy some audio-visual elements, another part will allow the patient to try to select items that they will be able to feel and smell and the third part will be a place where users can sit and enjoy some snack because the view looking out from the space will be a room that will look like an outdoor market in which normally fruits, flowers, coffee and buns (pulla) are sold, making it also a space to enjoy and explore from different sensory points of view. It will also stimulate through soft sounds from the sea and seagulls and will include some audio-visual elements from different images of Finland taken during 1939, just before the war with buildings remaining in the images and people looking happy when enjoying the summer in Finland.

For this project it was quite challenging to find the pictures from 1939 that show elderly people before the war time which is one of the issues that will be important to work with while performing reminiscence therapy through visual contact with these pictures. Perhaps some of these patients can remember nice things from their childhood and young adult-hood. Some other images from the audio-visual elements will include elderly people in some other countries surrounded by items that they can taste, smell, touch, and try so in this sensory room also there will be items that the patients can have for their duration of time there.

When doing the research review it was quite tough to find information that included all the categories needed combining the words multi-sensory, demented, elderly, stimulation, etc. and was quite recently published. There was a lot of information but mainly discussing topics found in anecdotal studies so more research was always suggested. More research would mean this room will be an opportunity for someone else to continue and measure the improvements done by some of the patients from Kustaankartano.

Many of the articles found on the databases just displayed the abstract and it was impossible to obtain the information unless purchased online and with the permission to use it for an amount of time making it quite frustrating for the author to obtain all the information that might have also been good for this research. So many of the articles needed were found after sitting for almost a whole day in a library and searching the most recent articles published on gerontological journals. This made it easy to obtain the material but afterwards, it was difficult searching in each of the journals for relevant information. When approaching to the methodology of research the author thought that this project could have been performed as a longitudinal study where after designing and building the room; measurements from the elderly patients using the multi-sensory space could be observed and analysed perhaps the use of questionnaires to measure those results and interviews, but unfortunately at Kuustankartano they have a lack of economical resources to start with the project, so for now it will stay as a next future idea and as soon as they get enough budget they will start building the project. So for this matter the method chosen was Content analysis so just material from previous researches were analysed and categories were formed, here the author faced the problem on understanding if the methodological approach was inductive or deductive. To

understand more which was the approach used on this research the author will show which are the two differences from deductive and inductive as figures in appendices 6 and 7.

Practical solutions for the sensory room

The achievement of this project also will be a more patient-centred approach to health care using design thinking that will lead to the innovation of tools to create value propositions for services where multidisciplinary teams will try to improve the elderly patients quality of life in a more holistic way that could it be perhaps in a just plain empty room where demented patients might feel isolated, anxious etc. This suggest that many professional skilled people will be working to create the multi-sensory space. For some it will be the outlook of the room itself, for others it will be the therapeutic approach, for others it will be to observe and measure the responses towards the exposure from the patients to these kind of therapies etc.

The space that will be designed with Snoezelen methodology it is inside the dementia ward from Kustaankartano, already it is used as a relaxation space where the colour is creamy yellow and have some furniture like a comfortable armchair and a bed that patients use, and also the room gets some homeliness feeling made with some plants by the window.

Here the proposal will be to design a market where with build up panels that will have 1:1 size or human size pictures and in the centre of the room will be placed a tree, surrounding the trunk of the tree there will be placed 4 sits for 2 patients and 2 care givers, and hanging from the tree will be placed the items that will have texture and smell and can be touched by the patients. Also in this room it will be a bed that will have the effect of a relaxation space and the whole room itself will be transformed with some panels that will have different nature images that can be change according to the season of the year and in the other side of the panels will be the pictures from the outdoor markets, from 1939. Here a slide show will be played whenever the carers and the patients want to play it on a screen, and the whole room will be fixed with speakers to get relaxing sounds or music. Images of the room can be found in appendix 8.

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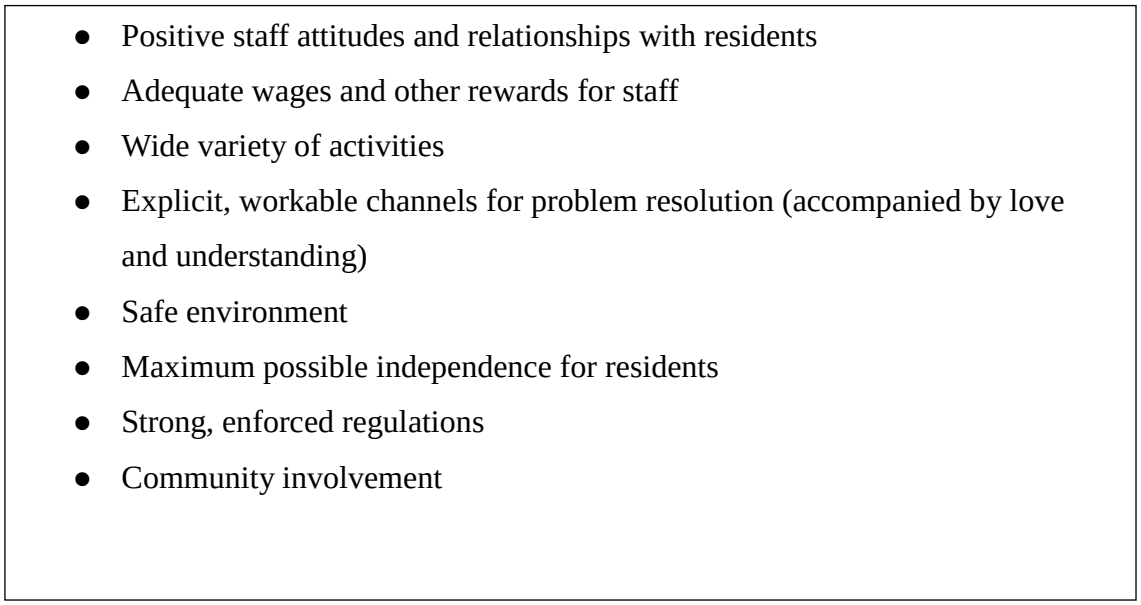
APPENDICES

Appendix 1

Figure 1 Nursing Home Residents: Important Factors for Quality of Care



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Appendix 2

Table 3 Results from process of scientific articles of the Multi-sensory environment

These are the results and findings obtained from each of the articles chosen for the multisensory environment where although they have in common the same key words such as multi-sensory, environment, dementia, Snoezelen, aromatherapy, stimulation of the senses, therapies, etc. There were differences on the findings according to what the author was looking for, however the main goal for the author's research was covered with this material.

Table 3 Results from process of scientific articles of the Multi-sensory environment

Article	**Author**	**Method used by the author**	**Sample**	**Results**
1.Use of Multi-sensory Environments in the Home for People with Dementia	**(Cheryl & Riley-Doucet 2009)**	**-Qualitative method of in-depth semi-structured focused interviews, demographic questionnaire**	**-older than 65 year old patients. -their primary caregiver. -10 families**	**-Environmental modalities can promote a sense of well-being and reduce anxiety and agitation in people with dementia. -Care givers described themselves as felling more connected with their loved ones while interacting with them in the Multi-sensory environment, thus family interpersonal relationships were improved.**

2.Therapeutic Environments for Older Adults: Constituents and Meanings	**(Edvardsson 2008)**	**-Data collected between 2001-2004 from patients, others and health care staff**	**-The sampling technique included maximal variation and convenience sampling (Polit, Beck & Hungler, 2001) Individuals in settings representing a variation in physical environments, length of stay, and focus for care were asked to participate.**	**- The participants described that the physical environment, people´s doing and being in the environment and the organizational philosophy of care were interwoven and interacting dimensions, which together created what was described as the spirit, climate, or atmosphere of the environment.** **-The Physical environment was the stage for, influenced, and to some extent, regulated interaction and behaviour in the settings.**
3.Effectiveness of Community-IBased, Non-pharmacological Interventions for Early-Stage Dementia.(Sandra C. Burgener, Linda L. Buettner, Elizabeth Beattie, Karen M. Rose 2009)	**(Burgener, Buettner, Beattie, Rose 2009)**	**-comprehensive review from more than 150 research reports.** **-community-based multimodal treatment**	**-Findings from a comprehensive review of the research descriptions from the consensus report to the Alzheimer´s Association support groups from people suffering from early-stage of dementia.**	**-Findings focused on six major domains.** **-Early-stage support groups.** **-Cognitive training and enhancement programs.** **-Exercise programs.** **-Esemplar programs.** **-Health promotion programs.** **-Other programs not fitting into previous categories.**

				These findings identify well-supported non-pharmacological treatments for persons with early-stage dementia and implications for a national health care agenda to optimize outcomes for this growing population of older adults.
4. A revised Index for Social Engagement for Long-Term Care.	**(Gerritsen, Steverink, Frijters, Hiirdes, Ooms, & Ribbe, 2008).**	**-Exploring content validity and internal consistency in Dutch and Canadian data.** **-Reliability of this Revised ISE (Rise) was tested (Index for Social Engagement) it is an observational scale.** **-The Index for Social Engagement ISE is an observational scale that measures positive features of long-term care residents' social behaviour.**	**-Sample was taken from 14 other scales for positive social behaviour.** **-20 nursing home psychologists and physicians were asked to rate the relevance of these dimensions for measuring social engagement of nursing home residents. The dimensions that were considered sere matched with the items in the ISE.**	**-In the content validity it was found that 8 of the dimensions concerning to social behaviour were actively making contact with others. Reacting to others. Conversational skills. Attitudes during interaction. Interest in environment. Social relationships. Subjective response to activities. Initiation of activities.** **-Social engagement is an important aspect of the quality of life of long term care residents.** **-Because admission to long-term care facilities implies the necessity to adapt o other**

				people and other activities, los social engagement is very common in newly admitted nursing home residents.
5. Puppy Love for Older Adults	**(Johnson, A. & Gayer, A . 2008)**	**-Observation**	**-Elderly people from resident home that after some time started to suffer from loneliness, problems with mobility inside the elderly residence.** **-Also there were taken pets under veterinarian supervision and with specific programme to create human-animal bond.**	**-The idea of this resident home for elderly was to combine gracious retirement living with flexible health care services that changed with residents needs.** **-After the big success it was developed the TigerPlace Pet Initiative programme where 4 types of areas get together and enhance the programme, here were included students from Veterinary, a brand for pet food provides help , and bigger species of other animals come to the resident home so elderly can also enjoy from this type of animals enhancing more the activities and interactions among other residents from the same community.**
6. Promoting Health in Early-Stage Dementia :	**(Buettner, L.L., & Fitzsimmons, S. (2009)**	**-Use of quasi-experimental design.**	**-Three communities were selected to**	**-The results found from this study were that**

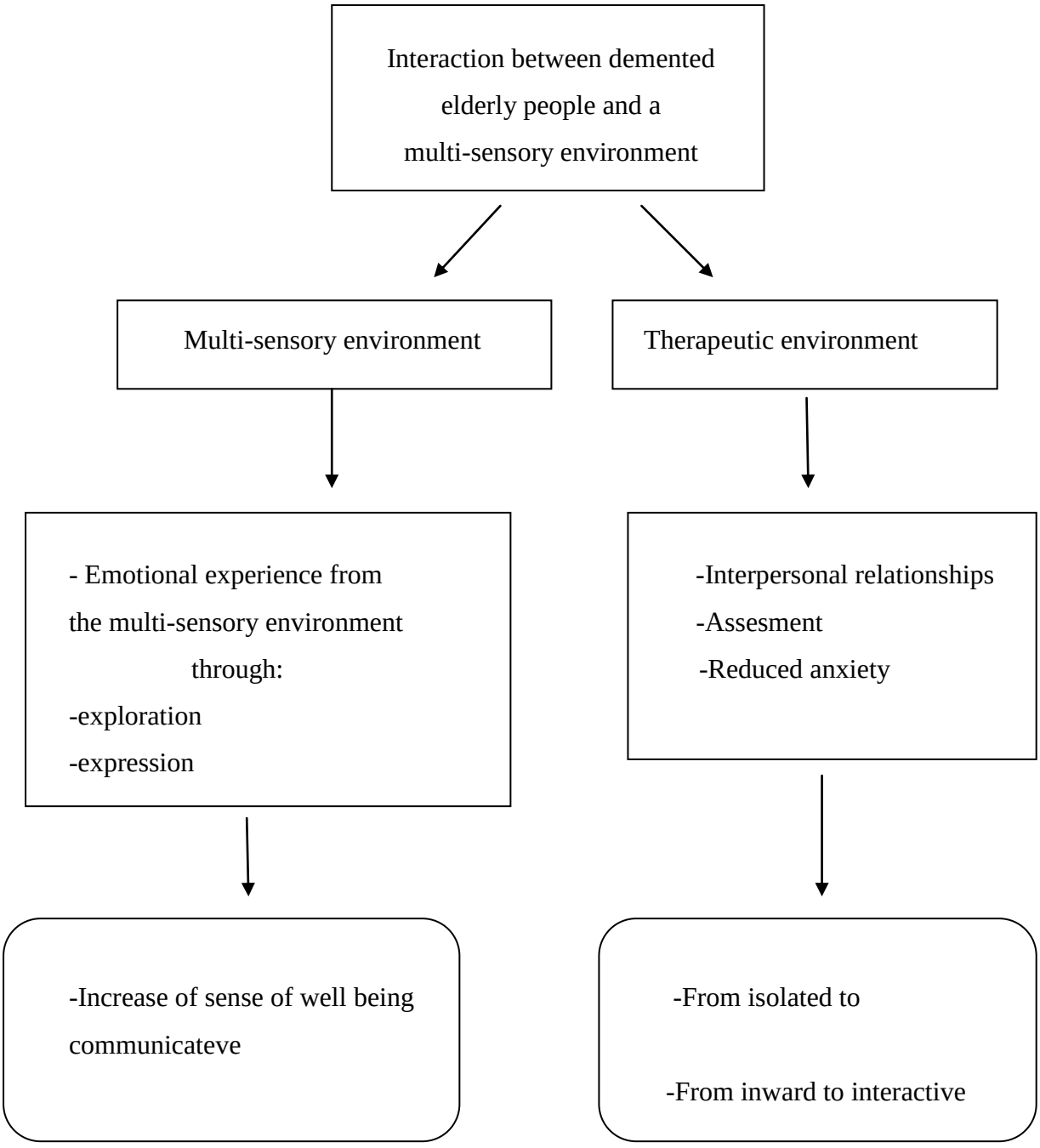
Evaluation of a 12-week Course		**-Use of the 10-item Matthias and Schwarzer, general Self-Efficacy Scale 1992).**	**offer the Health Promotion course. -Elderly people age 65 and more with new diagnoses of dementia or those confirmed with early stage dementia. -This project took place over a 2 year period with a participants recruited through Alzheimer´s Association chapters, physicians´offices, and newspaper advertisements in five locations of Florida.**	**the authors found significant positive change from pre-test to post-test. -Positive reaction from the participants towards the Health promotion course. -The treatment group showed a significant reduction in depressive symptoms.**
7. Initiating Person-Centred Care Practices in Long-Term Care Facilities	**(Crandall, White, Schuldheis, &Talerico)**	**-Method was a description of the project. And the conclusions were suggestions for the next steps in person-centred care culture change practice and research.**	**-The sample for this research was done by selecting 10 facilities from 16 and the aim for them was to receive education and couching about person-centred care, from the chosen ones there were 5 nursing facilities, 3 residential care facilities, 1 assisted living facility and 1 facility that offered both residential and assisted living.**	**-On the results each of the chosen facilities made progress in initiating new person-cantered care practices. -The extent to which person. Centred care was implemented varied. -Three exemplar facilities made significant practice changes, 4 made significant changes but more moderated and 2 others made minimal progress and 1 facility closed. -Lessons learned**

				from the person-centred care project have contributed to a deeper understanding about what person. Centred care is, the organizational characteristics needed to support it, and was to help organizations achieve and sustain it.
8.Cognitive Training for Early-Stage Alzheimer's Disease and Dementia	**(Yu, F., Rose, K.M., Burgener, S.C., Cunningham, C., Buettner, L.L., Beattie, E., et al. (2009).**	**-The method used was in this research, the critical review together with a synthesis and grade of the literature on the effects of cognitive training in individuals with early-stage AD.**	**-For this research the sample was taken from different electronic databases such as Medline (pubmed), Cinahl, psycinfo, and the cochrane library using the keywords cognition, reality orientation, Alzheimer´s disease, psychosocial factors, cognitive therapy, brain plasticity, enriched environments, and memory training.**	**-The findings support that cognitive training improves cognition, activities of daily living, and decision making. -cognitive training refers to any non-pharmacological intervention designed to improve cognition, regardless of mechanism of action.**

6. Using an Associational Trends Framework to Understand the Meaning of Obsessive REM incense.	**(Puentes 2008).**	**-The method used was interpretation of the content of obsessive reminiscence within an associational trends framework.** **-The information was incorporated into treatment plans to improve and enhance the quality of care delivered to clients together with the improvement of the interpersonal relationships.**	**-After a literature review and individual case was taken for the research sample, this case was simply called Mrs D, together with a nursing home staff with background in gerontological and mental health nursing skills**	

Appendix 3

Figure 3 Different representation from the multi-sensory environment design study



Appendix 4

Table 5 Search process of scientific articles for the Reminiscence therapies

These were the findings and results for the reminiscence therapies study where the author tried to find different possibilities to alternative and complementary non-pharmacological therapies used to stimulate elderly patients suffering from some mental disorder or in some cases were therapies used to improve the mood and attitudes from patients. Many authors gave different possibilities to alternative therapies together with the drug that has been administrated to the patient and very good results were found when working with reminiscence therapies worked with aromatherapy and the use of bright light.

Table 5 Search process of scientific articles for the Reminiscence therapies

Article	**Author**	**Method used by the author**	**Sample**	**Results**
1. Sensory stimulation in dementia: An effective option for managing behavioural problems.	(Burns, A., Ballard, C .& Byrne, J. 2002)	-observation -use of lemon balm (melissa officinalis) and lavender oil (Lavendula officinalis) used either inhalation or skin application to the patients.	- demented patients with different levels of dementia and other mental disorders.	-A wide range of alternative approaches has been tried, including multisensory interventions such as Snoezelen, but reports have essentially been qualitative and based on small number of patients. -Two exceptions are aromatherapy and bright light treatment, which have emerged as promising treatments. -A big emphasis on the excellent tolerability of aromatherapy with is in contrast to many of the pharmacological treatments in the group o f patients. - Bright light is

				effective in the treatment of seasonal affective disorder, together with aromatherapy seem to be safe and effective and may have an important role in managing behavioural problems in people with dementia.
2.Aromatherpy in dementia	(Holmes,C. Ballard, C. 2004)	-Data collected from different clinical trials. -Cross over study -Case study with a randomised controlled trial of the relaxing effects of a lavender aromatherapy massage with videotape of the sessions of 1 hour.	-9 demented patients with sleeping disturbances using lavender oil. -Second study showed 4 patients with senile dementia that were exposed to a 3 month period in 10 sessions. -The third case took 21 patients with dementia where patients were taken randomly where they were allocated on aromatherapy and massage, aromatherapy and conversation, and massage only	-suggestions that the use of lavender oil was as effective in controlling poor sleep patterns as was their usual long-term drug treatment. Verifying some results found from wolf & Herzberg (1996) with the same effects. Here the patients got massage with lavender oil and showed a significant improvement in behaviour in the hour after treatment. -For this 3rd case aromatherapy and massage showed the greatest reduction in the frequency of excessive motor behaviour. -As a conclusion from this observational study it was suggested more investigation of the potential role of aromatherapy in the clinical treatment of

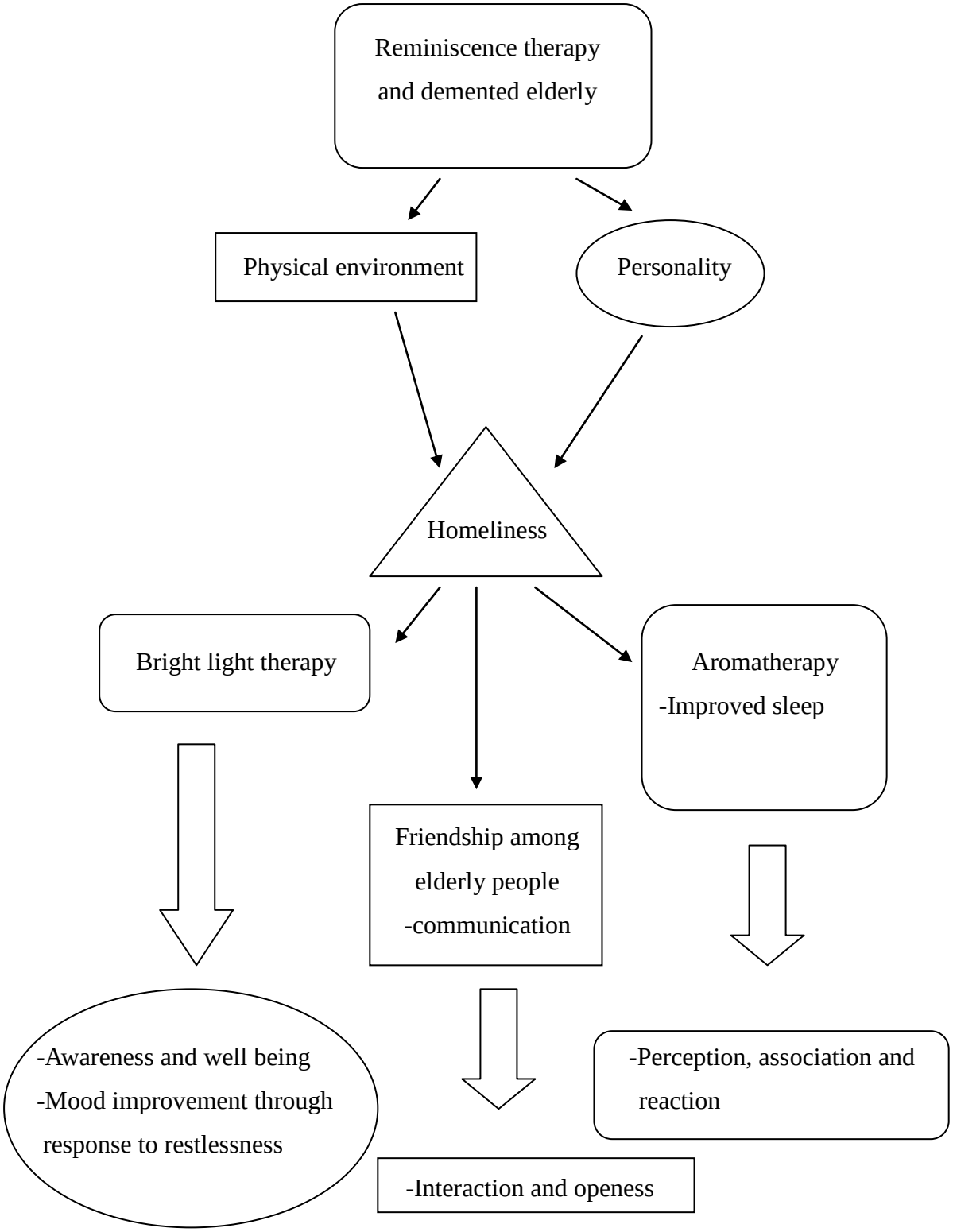
				behavioural and psychiatric symptoms in people with dementia.
3.Therapeutic Environments for Older Adults: Constituents and Meanings	(Edvardsson 2008)	-Data collected between 2001-2004 from patients, others and health care staff	-The sampling technique included maximal variation and convenience sampling(Polit, Beck,& Hungler,2001) Individuals in settings representing a variation in physical environments, length of stay, and focus for care were asked to participate.	- The participants described that the physical environment, people´s doing and being in the environment and the organizational philosophy of care were interwoven and interacting dimensions, which together created what was described as the spirit, climate, or atmosphere of the environment. -The Physical environment was the stage for, influenced, and to some extent, regulated interaction and behaviour in the settings.
4.Promoting Positive Student Clinical Experiences with Older Adults Through Use of Group Reminiscence Therapy	(Eris, F Roholff, Ryan, E. 2008)	-Geriatric care students identified a health problem that was modifiable by a nursing intervention (social isolation) and used support groups with reminiscence-based activities to address the problem. -They used group reminiscence therapy sessions, themes, activities, group product, and observations.	- Students in collaboration with psychiatric faculty and nurse preceptor, elderly patients and health staff were asked to participate for the nursing intervention. -They got help for the group support from a manual developed by the National Alliance for Mental Illness (NAMI) with support manual group model that provided step by	-Elderly patients seemed to respond positively and enjoy learning from others that shared similar previous life experiences. Also they show increased skills in sharing with others, better relationships towards other.

		-Support groups met for 30 minutes one day per week.	step guide for conducting a support group for individuals with severe mental illness.	
5.Prescribing Activities that Engage Passive Residents: An Innovative Method	(Kolanowski A. & Buettner, L. 2008)	-Integrated review of literature. -In depth assessment of residents´ pre-morbid personality. -Use of Five-Factor Model (FFM) (Digman, 1990)	-Individuals with dementia were asked to rate their own personality at three points from early-stage dementia to 42 months.	-The provision of activity services in the long-term care settings has changed from being just seen as diversive activities to resident-centred therapeutic interventions, that meet the mental, physical and psychosocial needs of the residents. -Authors are challenged to demonstrate the effectiveness of non-pharmacological interventions for meeting needs expressed through behavioural symptoms, such as passivity, in nursing home residents with dementia.
6.Using and Associational Trends Framework to Understand the Meaning of Obsessive Reminiscence	(Puentes 2008)		-Assessment of and individual case called Mrs D	-Communication it is the most fundamental level in a social process. -The focus is mainly on talking rather than on listening. -Communication theory however, stressed that effective listening and attending to nonverbal communication, conversational themes, and contexts are even more essential to successful

				communication. -Nurses use of an associational trends framework to understand obsessive reminiscence requires the effective synthesis of several fundamental nursing skills: development of effective interpersonal skills, effective listening, and using the client's personal history to provide a contact for interpreting the cognitive and affective themes of the communication process.
7. Snoezelen for dementia	(Chung 2002)	-Systematic review -Quantitative synthesis of data -Use of behavioural and mood disturbance scale (BMD)	-elderly over 60 suffering from dementia. -Snoezelen or multi-sensory programmes used as an intervention.	-The results found on these trials were in direction of favouring treatment. -Very little data were available for the analysis -A systematic review of evidence for the efficacy of Snoezelen in the care of people with dementia is therefore needed to inform future clinical applications and research directions.

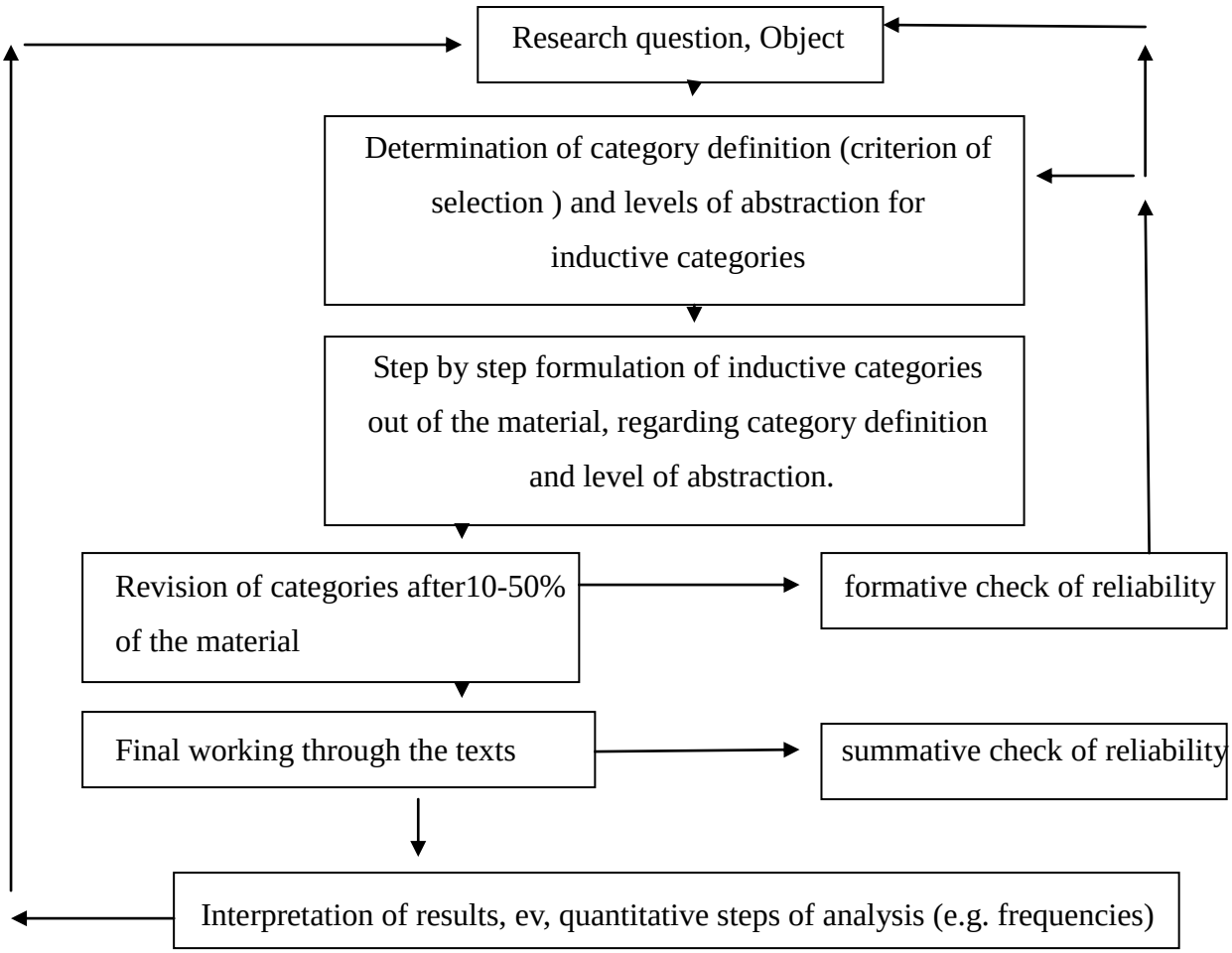
Appendix 5

Figure 4 Different representation from the reminiscence study therapy



Appendix 6

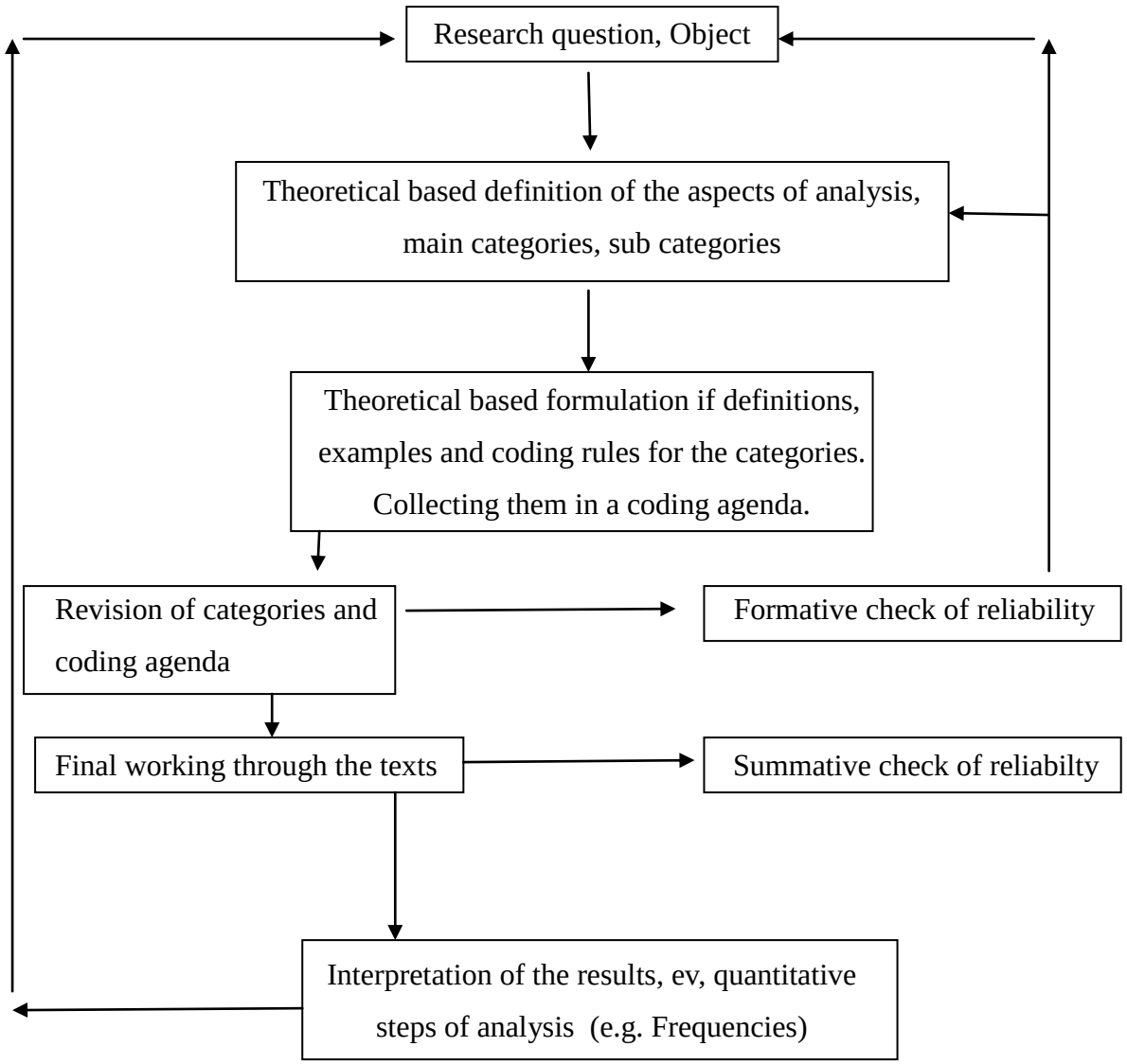
Figure 5 Step model of inductive category development from (Mayring 2000).



The main idea of the procedure is, to formulate a criterion of definition, derived from theoretical background and research question, which determines the aspects of the textual material taken into account. Following this criterion the material is worked through and categories are tentative and step by step deduced. Within a feedback loop those categories are revised, eventually reduced to main categories and checked in respect to their reliability. In the research question suggests quantitative aspects (e.g. Frequencies) can be analysed. (Mayring 2000).

Appendix 7

Figure 6. Step model of deductive catefory application (Mayring 2000).



The main idea here is to give explicit definitions, examples and coding rules of each deductive category, determining exaclty under what circumstances a text passage can be coded with a category. Those category definitions are putted together within a coding agenda.

Appendix 8

Images of the room at Kuustaankartano before the enhancements. Here it has been used this space as a relaxing room. Images taken by Viviana Piipponen.

Appendix 9

Images from the room after applying the enhancements and Snoezelen equipment. Made with 3D-dimensional tools by Sampo Piipponen. (2010).

Figure 1. Interior of the Multi-sensory room with the nature panels. (3D drawings Sampo Piipponen. 2010).

Figure 2. Interior of the Multi-sensory room with the nature panels. (3D drawings Sampo Piipponen. 2010).

View from the entrance of the room with the door on the left side and the panels that will surround the room to make another appereance.

Figure 3. Interior of the Multi-sensory room with the nature panels. (3D drawings Sampo Piipponen. 2010).

Figure 4. View from the room with the window on the other extreme of the room and the door on the right side.

View from the room with the panels that have the images from outdoor markets in Finland during 1939.

Figure 5. Interior of the multi-.sensory room with the outdoor market panels.
(3D drawings Sampo Piipponen. 2010).

Figure 6. Another view from the same room that has the real window with daylight in the back of the room.