Human Factors in Aging and Special Needs, Vol. 88, 2023, 40–47
https://doi.org/10.54941/ahfe1003660

Life Stories – Developing an Interactive Solution for Reminiscence and Communication

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ABSTRACT

Life stories are gathered information about a person, for example history, preferences, or habits. The method is often used in healthcare and care with the aim to support personalized care. This paper describes a project that explores how life stories can be gathered and made available by using interactive digital technology in new ways that supports a multi-sensory experience. Two workshops were conducted with participants from elder care, researchers, and designers. The aim with the first workshop was to frame the concept and to gain a deeper understanding of important aspects to consider. The aim with the second workshop was to gain a better understanding of the different user groups. The insights from the workshops are presented with respect to content, users, usage and interaction with different user groups. Important aspects that were brought up was ownership of the solution. This aspect is important since it is likely to affect what kind of information the users are willing to share. The kind of information a person is willing to share are also dependent on if it is friends, family or care giving personnel that will have access to the information. Further, it will be necessary to decide about how the solution will be used and if its focus should be on presenting information about a person's history or if the focus should be on creating value in the moment.

Keywords: Life stories, Older adults, Co-creation, Design, Technology usage

INTRODUCTION

The population in the world is aging fast and the number of people over 60 years of age has increased rapidly in recent years in most countries and is expected to increase further in the coming decades (United Nations, 2015). The introduction of new technology will have an important role in meeting the needs of older adults and it has the potential to improve quality of life (Soar, 2010). Life stories are gathered information about a person, for example history, preferences, or habits. The method is often used in healthcare and care to support personalized care (Andersson and Ogge, 2017). The method could be especially valuable for people with cognitive impairments or dementia since for these groups it could be difficult to convey preferences and wishes (Rehn, 2015). The life story should support both the older adult in conveying

his/her identity and the care giver in understanding the individual beyond diagnoses and need for care (Dahlin Olofsson, 2020). The life stories can also be a tool for strengthening social identity (Turner, 1999) and increasing a sense of belonging. The stories are often created in a meeting between the older adult, the care giver, and the relatives. The stories are often gathered on paper (Bräcke diakoni, 2020).

The aim of the project described in this paper is to explore how these life stories can be gathered and made available by using interactive technologies in new ways that supports a multi-sensory experience. Through an iterative and user-driven process the project will develop an interactive solution that conveys the feeling of identity and belonging; and that contributes to evoking memories, inspire activities and conversations. Further, the solution should also contribute to an increased social participation and control over the own care situation. Finally, the solution should be useful and accessible to the care givers in their daily work.

BACKGROUND

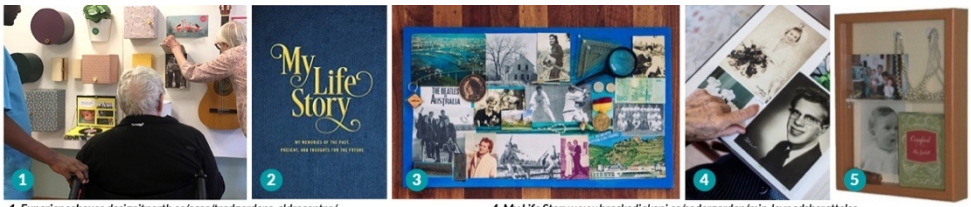
Sensory experiences can both create well-being for older adults and help the personnel to gain an understanding of the individual more easily (Karlsson Sjölander, 2019). For example, music and personal playlists can be used to increase well-being for older adults (ABC Science, 2020). Studies have shown that multisensory environments are an important resource in, for example, dementia care (Collier and Jakob, 2017).

Many organizations in healthcare and care already use the method life stories in a non-digital way. These can be in the shape of books, boards or boxes that evoke memories and increases the interaction between older adults, relatives, and care givers in nursing homes (see figure 1).

There are also solutions aiming at supporting conversations between people with dementia and their relatives. The aim with this kind of solutions is to trigger conversation topics in a way that do not demand that the older adult to remember things from the past (Rönntoft, 2018) (see figure 2).

There are several digital solutions for conveying life stories. They could have the form of digital books or videos or as clickable information about a person's needs and preferences (see figure 3).

Further, there are examples of interactive solutions that address other senses than vision. For example, Vita, which is an interactive cushion that plays



1. **Experienceboxes** designitnorth.se/case/tradgardens-aldrecentra/
2. **Memory board** www.goldencarers.com/reminiscing-how-to-create-a-memory-board/5484/
3. **My Life Story** www.amazon.com/My-Life-Story-Memories-Keepsakes/dp/0785839119
4. **My Life Story** www.brackediakoni.se/sodergarden/min-levnadsberattelse
5. **Memory box** www.beaucare.com/insights/keep-memories-safe-with-a-dementia-memory-box

Figure 1: Examples of life story books, boards and boxes.

Figure 2: Pebbles – a solution that consists of a tray with various tactile stones where different images on the stones trigger conversation topics.

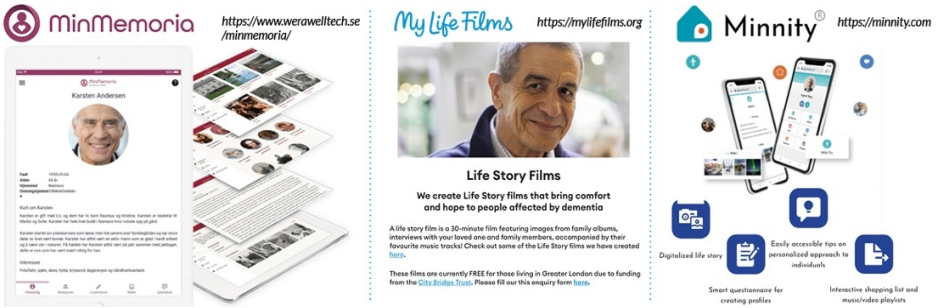


Figure 3: Digital solutions conveying life stories.

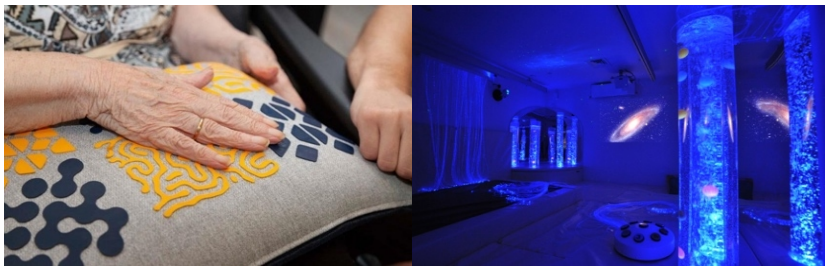


Figure 4: a) The Vita cushion b) Example of a sensory room.

a sound when it is touched upon, emphasizing on the importance of sound to increase well-being for people with dementia (Houben, 2020) (see figure 4a). Even entire rooms have been designed to support multisensory experiences. These rooms consist of different sensory stimuli and could be used by people with different cognitive impairments (Worcester Snoezelen, 2020) (see figure 4b).

PROJECT APPROACH

During the project described in this paper, we explore how different technologies can support a sensory experience that conveys a person's identity. Different types of visualizations, tactile elements, and audio-based solutions such as holograms, sensors, interactive projections, smart textiles, directional sound, and sound players will be explored and considered to be included in the prototype. The project will result in a physical prototype where users

actively interact and test the solution in a real context (Buchenau and Fulton Suri, 2000). The solution will show how life stories can be made available and how they can create experiences that can evoke memories, inspire activities and create new conversations.

The solution will be the result of co-creation with users and stakeholders, and the project will apply research in design in a user-cantered and iterative innovation process. Design methods and design thinking (Buchanan, 1992) will be applied in the project to develop a testable prototype that provides design ideas about how the needs can be met. The overall approach is based on Co-Creation or Co-Design (Prahalad and Ramaswamy, 2004), where technology development takes place in collaboration with the people who will use it, this to capture the needs, benefits and values of the technology being developed.

Participants representing younger seniors living in their own homes and older adults living in nursing homes will be included in the project. The younger seniors will contribute with insights about how they want to create their life story and use them in their own future, and the participants from the group representing older adults will contribute with insights about their current situation, challenges, and opportunities. The intention is that the developed solution should be introduced to younger seniors and continue to be used during the entire aging process, which will both increase the possibility to gather and update content; and to make it easier to learn to use the application.

A further important aspect in the project is to work with design methods that create added value for the participants and create the feeling of being able to contribute to the development of new technology (Sjölinder, 2020). Involving older adults in development can also increase commitment and motivation as well as lower the thresholds for implementation (Rebola and Hermann, 2017; Sjölinder, 2020). By supporting older adults in testing new technology in safe contexts, knowledge, self-confidence, and motivation to use new solutions also increases (Rogers et al., 2014).

FRAMING THE CONCEPT

To gain a deeper understanding of important aspects to consider in the forthcoming work, a first workshop was conducted within the project group. The participants consisted of representatives of care giving organizations, organizations providing education within the field, designers and researchers. The participants were split into 3 groups of 4–5 participants. Each group was led by a facilitator that asked questions and took notes. The discussion focused on possibilities and aspects to consider when developing a solution for gathering and use of life stories that supports a multi-sensory experience. As an inspiration to start the discussion the participants were given keywords such as Senses, Motivation, Data, Integrity, Interaction, Content, Purpose, Possibilities, Challenges, Place, Pain Points and Time. There were also keywords for the possible users such as Elderly-elderly, Younger elderly, Relatives, Personnel and Substitutes. The discussions were also based on possible goals

with the solution such as Experience for multiple senses, Support for person-cantered care, Usefulness and accessibility, Convey a sense of identity, Bring back memories, Convey a sense of belonging, Increase participation in social contexts, inspire activity, Contribute to well-being, Spark conversation and Participation in one's own care. To not focus on problems or solutions, but still collect them, a "problem parking" and "Idea parking" were used. The aspects that were discussed are presented below.

Content

During the workshop the participant raised the question of whether the solution should convey who a person is or who they once were. As human beings we constantly change and adapt to new circumstances in life, which should be reflected in how life stories are collected and used. This led to further discussions about what is the "right" story and how a story can be dynamic and change over time. Another important aspect to consider are, what kind of information a person wants to be gathered and shared with others. This question also relates to the fact that this information might remain after the person has died. A further questioned that was raised were who will have access to the solution and who will be able to see a person's life story. As human beings we often care about our identity and what parts of us we present to others. Presumably we also want to be in control of what sides of ourselves that we show to different people. For example, the things a person would like to reveal to a friend or a relative or to a care giving personnel might be completely different. Therefore, a solution like this needs provide the possibility to control which part of the information can be seen by different users. The aspect of gathered data and privacy is also closely related to who the primary users are (beside the older adult) and who the owner of the solution is. For example, it can be a tool that mainly are used by the care giving personnel or a tool that supports conversation with friends and family.

Other aspects that was discussed were which type of content that is important to collect (what creates value) and in which formats the information should be conveyed, for example as texts, images, sounds or tactile elements. If it is possible to use existing databases of, for example art and music, the usage of this material can support the stories that are told.

Users

With respect to the older adult as the primary user, it was discussed when in life to start to use an application like this. The earlier a person starts to use the application, the larger control they will have over the information that is gathered. If the usage starts earlier in life the application could also be used by other user groups, for example by people that after an accident become unable to convey their wants and needs.

Another aspect that was discussed was cultural belonging and different languages. A solution like this must take into consideration cultural differences both regarding how it should work and what kind of information that should be gathered. Further it needs to provide possibilities to adapt to different languages, and can even be a support for communication if the older

adult and the care giving personnel have challenges in communicating in the same language.

Finally, in relationship to other possible user groups, there are also younger people with different disabilities that have challenges in expressing what they want and what they like. Taken this into consideration, the question was raised to which extent this affects the kind of content that is collected, and in which way and with whom the information is shared.

Usage

The context of the usage was also discussed during the workshop. The question was if the main goal with the solution should be conveying a specific life story or if it should have its focus on creating value in the moment. In relationship to this it was also discussed what qualities a solution like this should have and which aspects that would be important to include. Finally, if the focus should be in creating value in the moment, the challenge will be to design a method that supports possibilities to capture what is happening during the usage.

INVOLVING STAKEHOLDERS

To create an innovative and inclusive solution that meet real needs among the stakeholders - elderly, relatives, personnel and business developers in healthcare and technology companies - must be involved in the process in different ways based on role, ability and needs.

As the primary user "older adults" is not a homogenous group, and there is great variation of both technical experience, needs and conditions, the project will engage several participants both from the younger group of older adults living at home and older adults in special housing. In a second workshop the project group reflected on important aspects to consider when involving the primary users in terms of older adults and personnel/substitues. The aspects that were discussed are presented below.

Older Adults

One way to engage participants is to use existing services and activities that are organized by private actors as well as civil society and the public sector. For example retirement homes, home care, pensioners' and relatives' associations, public meeting places for older adults and course activities. As the actors cannot give out contact information about the older adults, it will be important to identify "key persons" that can provide support in organizing the first meetings with the intended users. During the workshop an emphasis was also placed on the importance of creating a diversified group in terms of culture and language, in addition to gender, digital experience and physical and psychological conditions. Different cultures and languages between the older adults and the personnel/substitutes can be a challenge in terms of understanding the older adults' needs and preferences. They are therefore an important aspect to consider. The outcome of the workshop also revealed the importance of brainstorming sessions and discussions among different stakeholders. Important aspects to bring into these discussions are how to engage

the participants and how to create value at several levels. To engage the different user groups, the participants need to find their contribution meaningful and that their participation add value to them.

Personnel and Substitutes

With respect to personnel and substitutes, it was suggested to use their experience in creating social relationships with the older adults they are taking care of. Several different aspects of creating social relations were identified and discussed. Further, the participants in the workshop mentioned that one of the most important aspects when involving and engaging personnel in the development of new technology is to make sure that they are given enough time to participate. Otherwise, it will just be a task that increases the workload and make their work harder. Finally, it was pointed that the project's goal and purpose need to be communicated with the managers and personnel so that they see the value of participating.

DISCUSSION AND CONCLUSION

There are some important aspects to consider when conveying life stories. To be able to decide what kind of information the users would like to provide, it will be crucial to determine who will own the solution. The kind of information a person is willing to share are dependent on if it is friends, family or care giving personnel that will have access to the information. Further, it will be necessary to decide about how the solution should be used and if its focus should be around presenting information about a person's history as described by Andersson and Ögge (2017) or if it should create value in the moment as a way to focus around a person's identity (Turner, 1999; Dahlin Olofsson, 2020).

To be able to get answers to questions above the next step will be select relevant user groups. Both older adults and relatives will be part of the process. In addition, younger people will be involved in the work with reasoning about what king of information they would like to be gathered and stored about them for purposes used later in life. If the focus of the service will be usage by care giving personnel different categories within this group will also participate as possible users.

One important aspect within the project is to work both in an inclusive way and to create value for the participants during the design process. Therefore, participants will be invited to the entire process and be giving the opportunity to socialize with each other. A large focus will be given to set up a framework that both supports an enjoyable design process and results in a tool that is perceived as meaningful and fun to use.

ACKNOWLEDGMENT

The authors would like to thank all the participants in the workshop for contributing to fruitful discussions.

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