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Advantages and Limitations of Older-adult Volunteer Facilitators Conducting a Well-being Course in the Provision of a University's Open Studies in Japan

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Abstract

As the population of those aged 65 years and above has sharply increased in recent years, the issue of ways in which their potential manpower as 'volunteers' and 'workers' can be utilised has been receiving excessive attention in the Japanese society. This study thereby intends to indicate the advantages and disadvantages for elderly volunteers by employing a case study of two female elderly volunteer facilitators. These women have launched a 'well-being' course as a pair in a university's open studies programme, comprising giving brief lectures on various topics and later facilitating small group discussions among the participants to stimulate their brains through social participation and conversation. The participatory observations and informal interviews with these older volunteer facilitators before and after the course were undertaken by the author, who was supervising their roles as a researcher in the process of the course. The study found that these older volunteers can demonstrate competent leadership, particularly in facilitating effective conversations in each of the groups by referring to their life experience and vast knowledge about human nature. Yet, difficulties were observed in terms of classroom control, such as how to deliver a convincing speech, how to respond to unexpected reactions from participants and how to treat those with special needs. It is therefore suggested that the institution seriously deliberates over and defines the role of 'volunteers' in this context and considers to what extent they should be further trained so as to be resilient while encountering various challenges.

Keywords: Older Adults, Volunteer, Facilitators, University's Open Studies

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Introduction

With the world's largest proportion of people aged over 65, constituting approximately 28% of its total population in 2019¹, Japan is facing unprecedented societal and cultural issues. As healthy living in later years is being emphasised, volunteer participation has become increasingly popular among the older Japanese population in the past three decades². However, the quality of the services that these elderly volunteers can offer has become a growing research area.

In Japan, 'volunteering' became popular much later than in other industrial countries, with a clear emergence around the 1970s³. Yet, since earlier times, reciprocal help has been a custom in each community through *houshi*, a system of mutual assistance⁴. In every Japanese town, there is a neighbourhood community association that plays an active role in promoting *houshi* through activities such as organising festivals or cleaning up public areas⁵. However, as this custom also partly means 'to offer something as an object of worship', it has been historically regarded as obligatory rather than purely 'voluntary'⁶. Apart from this, although 'volunteers' were found to be around orphanages in the first half of the 20th century, it was not until after World War II that volunteerism began to prevail. With the development of social welfare legislation in the early 1950s, Social Welfare Councils were established at both prefectural and municipal levels; therefore, since then, the original form of volunteering in Japan has been associated with social welfare and the medical and health fields, e.g. providing aid in hospitals or helping physically challenged individuals⁷.

In the 1970s, when daily housework was being replaced by technologically advanced home appliances, people had more leisure time, resulting in an increase in the number of those who were willing to be involved in volunteer activities⁸. It was at this timing that prefectural and municipal 'Volunteer Centres' were opened in Social Welfare Councils to consult, diffuse, coordinate and provide training for volunteer activities⁹.

*The materials written by Japanese ministries, municipalities, organizations and authors listed above are originally written in Japanese, and if the English title is not specified or unclear in their original materials, it is translated by the author.

¹ Cabinet Office of Japan. (2019). *Annual Report on the Ageing Society FY 2019*. (24th ed.). Tokyo: Cabinet Office of Japan.

² Fujiwara, Y. et al. (2005). Effects of Volunteering on the Mental and Physical Health of Senior Citizens: Significance of Senior-Volunteering from the Viewpoint of Community Health and Welfare. *Japanese Journal of Public Health*, 52(4), 294.

³ Nakayama, A. (2007). *The Emergence of Volunteering*. Mie: Mie University Press, 59.

⁴ Nihei, N. (2010). Overcoming the Demise of Volunteering: Addressing the Present from the History of "Principles". *Annual Review of Tokyo Voluntary Action Center 2010*. Tokyo: Tokyo Voluntary Action Center, 14-19

⁵ National Centre for the Promotion of Volunteering and Civic Engagement. (2010). *Report on the Survey Results on Nationwide Volunteer Activities*. Tokyo: National Social Welfare Council.

⁶ Arasaki, K. (2005). What is Volunteering? (Volunteer katudo toha?). In (Edited by Okamoto, E.), *Introduction to Volunteering* (Volunteer no susume). Kyoto: Minerva Shobo (Publisher), 24-25.

⁷ National Social Welfare Council. (n.d.). *100 years' History*. Retrieved from <https://www.shakyo.or.jp/tsuite/gaiyo/anniversary/history/showa2.html>

⁸ The Japan Forum. (2008). Volunteer Activities Are Becoming Familiar. *Takarabako*, No.17.

⁹ Iwamoto, Y. (2011). Issues Facing Regional Social Welfare Council Volunteer Centers in View

With the government's administrative reform in the 1980s, volunteering commenced to be more focussed, had minimal government control and was more in line with private sector dynamism¹⁰. In the 1990s, volunteer activities expanded in association with the political emphasis on lifelong learning¹¹, with some companies focussed on becoming more engaged with the community¹². Further, the common natural disasters in Japan—earthquakes, typhoons, tsunamis, floods and volcanic eruptions—gave rise to many volunteers for disaster relief activities such as running soup kitchens, transporting and sorting aid supplies, cleaning up the areas, helping to operate evacuation centres and providing information to the victims. For example, after the Great Hanshin-Awaji Earthquake Disaster in 1995, more than 1.49 million volunteers visited the area within 3 years and 4 months¹³. Nowadays, every time there is a catastrophic disaster, volunteers are expected to supplement the public services when the central and local governments are unable to meet the demand.

With the expansion of the Volunteer Centres' roles, since 2000, Japan's focus has been on civic engagement, which includes volunteer activities and all civic activities involving non-profit organisations¹⁴. By this time, the volunteering concept had spread to school and private companies, which required more information on volunteering services to be available across the nation¹⁵. At present, there are many corporate volunteer groups, non-profit organisations and individuals working in various areas such as social welfare, health, international affairs, environment, education, art and culture, sports, disaster relief and consumer issues. Therefore, over the past 40 years, there has been a substantial increase in the number of older adults engaging in formal organisational volunteering in Japan, with 7,068,403 registered in 2017, accounting for 5.56% of the total population¹⁶. Approximately 80% of the volunteers in 2017 were housewives and older people with no regular jobs, with those in their 60s (41.4%) being the largest volunteer age group¹⁷.

With this nationwide background, this study intends to indicate the advantages and disadvantages for elderly volunteers by employing a case study of two female elderly

of the Relationship between Regional Social Welfare Council Volunteer Centers and Private Sector Volunteer Centers: Disputes Spanning Founding and Historical Background which Raise Questions for the Present. *Japanese Journal of Human Welfare Studies*. (An In-House Journal of Kwansei Gakuin University), 4(1), 108.

¹⁰ Ad-Hoc Committee of Administrative Survey. (1982). The Third Report on Administrative Reform.

¹¹ Lifelong Learning Committee within Japanese Government. (1999). Report of Lifelong Learning Committee: How to Apply One's Learning Experience.

¹² Irie, E. (2007). The Interface between Voluntarism and Lifelong Learning. *Annual Research Review of the Faculty of Contemporary Social Studies*, Nagasaki Wesleyan University, 5(1), 53-54.

¹³ Yasutomi, M. (2015). News Reporting on Disaster and Volunteers. *Kobe Gakuin Journal of Contemporary Social Studies*, 137-138.

¹⁴ National Social Welfare Council. (2001). Five years' Plan on the Promotion of Volunteer Activities and Civic Engagement (Second Phase).

¹⁵ Central Council of Education (Japanese Government). (2002). Report on the Promotion of Volunteering Activities among Young People.

¹⁶ National Social Welfare Council. (2019.4). *The Number of Volunteers and Its Transition in Japan as of April, 2018*. Retrieved from <https://www.zcwvc.net/>

¹⁷ National Centre for the Promotion of Volunteering and Civic Engagement. (2010). *Op.cit.*

volunteers who have launched a ‘well-being’ course as a pair in the university’s open studies programme to stimulate their brains through social participation and conversation.

Methodology

This empirical study examined a 10-week Open Studies course called ‘Enjoy Chatting and Prevent Frailty!’ conducted by two older female volunteers, aged 79 and 67, at the Centre for Lifelong Learning within University A in Japan. The course comprised brief lectures on various topics and the facilitation of small group discussions to stimulate the participants. As these two women had previously completed a 2-year leadership Open Studies course at the university, they had gained the right to lead their own course on a voluntary basis. The 79-year-old volunteer had been an executive board member of an international association in her local community for a long time, had just graduated with a Master’s degree in English literature from University A and had been taking care of her retired university professor husband, who is now in a nursing home. The 67-year-old volunteer used to work as a public health nurse and has wide knowledge and expertise in health issues. Both women live off a pension and have socioeconomically wealthy backgrounds. Since their children left home, they have been very proactive in socialising with others to enhance their social networks.

There were 16 adult participants (6 males and 10 females): two females aged 54 and 57 years; four females aged 60, 65, 67 and 68 years, and one male aged 66 years; four females aged 72, 72, 73 and 74, and five males aged 72, 74, 77, 77 and 77. In all, 13 participants were retired, and three of them—one female aged 74, one female in 65 and one male aged 66—were self-employed. As one female participant had a hearing difficulty, she was accompanied by two summary scribes. During the course, 16 participants were divided into three to four small groups, each of which was facilitated by the two female volunteers. The participants were encouraged to form new groups with different people each time they came to class. Although the course was voluntary, the university officially incorporated the course into their regular curricula; therefore, it was delivered at the same university site as the regular open courses given by university academic staff.

The participatory observations and informal interviews with the older facilitators were undertaken before and after the course by the author, who was also supervising their facilitator roles during the course. Additionally, the participants’ completed course evaluations that had a few structured questions and some open-ended questions were referred to. After reviewing relevant literature, the outcomes of these three surveys (interviews with volunteers, participant evaluations and author observations) were consolidated to elucidate the study’s advantages, limitations and future challenges.

Literature Review on Older Volunteers

There have been several studies in several different areas that have explored volunteering in older adults over the last few decades. Several studies have found that there are physical, mental and psychological health benefits to volunteering for older

adults, with the main effects being found to be the following¹⁸: increased life satisfaction, increased self-esteem and self-assessed health, lower mortality risk, lower functional dependence, lower levels of depression, higher levels of contentment, higher protection against role-identity absences in major life domains (partner, employment and parental), enhanced role continuity, enhanced self-concept, better social support systems, higher social independence and interdependence through the development of new social networks and an improved sense of usefulness.

Volunteering motivation has also been widely examined. Compared with the younger generation who are more motivated by career concerns, older volunteers have been found to be motivated by the following¹⁹: altruism, the need to increase their self-esteem by feeling useful and productive, a need to fulfil their moral obligation to society and using their talents and expertise, a need for companionship, peer support, a sense of purpose and personal growth, a desire to be productive, a willingness to acquire new skills, a need for personal satisfaction, the availability of flexible volunteer options, intergenerational volunteering opportunities, opportunities for older unemployed and training programmes, 'blessings', improvements in educational attainment and health, favourable shifts in the public attitude towards ageing and older people, the increased value to be gained from volunteering and expanding opportunities for older volunteers in the public and private sectors.

Research has also focussed on general volunteering trends and the demographics of older volunteers, from which it was found that 'the elderly are more likely to participate in their late 60s, but their participation is likely to decline beyond that age'²⁰. However, it has been observed in Japan that many older adults aged in their 70s and 80s are staying active and are still willing to be volunteers, regardless of their physical condition.

However, although there has been a great deal of research on older volunteers over the last three decades, few studies have investigated the correlation of type, content or quality of volunteer activities for older volunteers, particularly in a more formal university setting.

¹⁸ Below are examples of this category.

Lum, T. Y. and Lightfoot, E. (2005). The Effects of Volunteering on the Physical and Mental Health of Older People. *Research on Aging*, 27(1), 31-55.

Wheeler J. A. et al. (1998). The beneficial effects of volunteering for older volunteers and the people they serve: a meta-analysis. *International Journal of Aging and Human Development*, 47(1), 69-79.

¹⁹ Below are examples of this category.

Okun, M. A. et al (1998). Motivation to Volunteer by Older Adults: A Test of Competing Measurement Models. *Psychology and Aging*. 13(4), 608-621

Dury, S. (2014). To Volunteer or Not: The Influence of Individual Characteristics, Resources, and Social Factors on the Likelihood of Volunteering by Older Adults. *Nonprofit and Voluntary Sector Quarterly*, 44(6), 1107-1128.

²⁰ Kim, S. and G. Hong. (1998). Volunteer Participation and Time Commitment by Older Americans.

Family and Consumer Sciences Research Journal, 27(2), 155.

Analysis

Overview of the Course

The course was conducted at one of the oldest Lifelong Learning Centres at a national university (University A) in Japan. This centre conducts approximately 100 courses each year, most of which are conducted by academic researchers from University A, with others being external actors. As these courses are provided within the university, the course contents need to be at a university level, preferably be research-based and differ from the ordinary lifelong learning opportunities outside the university²¹. However, most courses are non-credit and humanities-, social science- or health promotion-based, with subjects such as language learning, choral singing, calligraphy, training for marathons, literature, history, international relations, politics and community engagement. A large majority (80%) of students tend to be between 50 and 90 years old, have retired from a stable job and have no serious financial or health problems²².

The duration of the course under observation in this study was 10 weeks and had a small fee, with the chosen topics covering diverse aspects of society as follows: 1. Self-Introduction. How to entertain Myself. What is Frailty?; 2. Pseudoscience: Divination, Psychic ability and Supernatural Power: Why do people believe in those?; 3. Dementia: What is it?; 4. Lessons from Children's Literature, namely, The Grimm Fairy Tales, Aesop Fables, Andersen's stories, etc; 5. Old Learner's Social Participation; 6. Child Abuse: Child Raising and Custody; 7. Intestinal Microbiota: Are you well with it?; 8. Increase of Foreign Workers in Japanese Society; 9. Can You Stand Up with Healthy Bones? and 10. Gay Marriage: Why does Japanese Law still Ban It?. It was intended that the wide range of topics would more effectively stimulate the brains of the older participants.

Although 'role-identity absences in major life domains could be a risk factor for older adults' well-being'²³ and therefore could be a volunteering motivator, in this case, the course was not developed to improve the volunteers' 'own' well-being; rather, it was developed to enhance the well-being of 'other' older adults. In the interview with the 79-year-old volunteer facilitator, she said that the original idea for the course came to her at the public library when she observed that a number of elderly people came to the library every day without any clear purpose. She saw that they seemed to be apathetic, out of energy and tended to be nodding off the whole day, even though they were cautioned not to do so by the library staff. Noticing that the number of these elderly people had gradually increased in recent years, she wanted to encourage them

²¹ Thomas, E. Europe, the European Union and University Continuing Education. In Osborne, M. and Thomas, E. (Eds. 2003). *Lifelong Learning in a Changing Continent: Continuing Education in the Universities of Europe* (pp.1-14). Leicester: National Institute of Adult Continuing Education.

²² Suzuki, N. (2014). Characteristics of Mature Students in the Center for University Extension within the University of A, Findings from the Preliminary Questionnaire Surveys for Annual Public Hearings 2008-2010. *Journal of the Centre for University Extension* (within University of A), 23, 21-33.

²³ Greenfield, E.A. and Marks, N. F. (2004). Formal Volunteering as a Protective Factor for Older Adults' Psychological Well-Being. *Journal of Gerontology*, 59B(5), S258.

by helping them make use of their knowledge, expertise and skills. Therefore, she was motivated to develop this course and invited her 67-year-old friend with a background in health science to assist her.

Advantages

Most of the 10 course evaluations were positive, with 9 out of 10 participants saying they were satisfied or partly satisfied with the course. There were no dropouts throughout the course, with 10–12 participants attending every class on average depending on the topic. The positive comments included being able to share the community issues with others and deepen their understanding, consideration of the participants' attitudes and understanding, good explanations, useful handouts, reasonable fees, variety of interesting topics, earnest facilitator attitudes and a good opportunity to listen to the life philosophy of others. Overall, most participants hoped there would be a continuation of this course.

The volunteer facilitators said that it had been interesting to learn from the participants through the various topics and that they had learned that as everyone has wisdom, life skills, knowledge and their own experiential philosophy of life, they could all contribute to improving the society. The 79-year-old volunteer facilitator said that she had to study hard for each class by researching and reading various sources on the topic and mentioned that it was a daunting task to prepare for the possible questions that may be asked and develop appropriate handouts. Therefore, although it was unexpected, the more she devoted herself to this preparation, the more she felt that she herself had benefited from the course because it had kept her busy thinking about various topics, which had then improved her own well-being. She said that she wished to continue providing the course so that participants could develop more global perspectives. However, these comments were only expressed by the older volunteer; the younger volunteer did not share these feelings and admitted to feeling pressure every time.

The researcher's observation was that both female volunteers were able to demonstrate competent leadership and were particularly skilled at facilitating effective conversations in each of the groups by referring to their life experiences and their vast knowledge of human nature. Their communication skills with the participants improved week by week, and they began to speak with more confidence. As the course progressed, the discussions became more relaxed and the participants became more familiar. As both the volunteers and participants were of similar ages and all had some philosophical considerations regarding life, it was found that there was a degree of mutual assistance, for example, in some cases, the participants helped the volunteers stimulate the conversations.

Limitations

Some of the negative participant comments were the volunteers' limited knowledge about the topics, inadequate information on each topic (including dated information), insufficient classroom controls (inappropriate reactions and misleading comments on various questions), limited appropriate topics, outdated knowledge, improper wording in some cases, old-fashioned presentation style and a laissez-faire approach to motivating conversation in the groups. Apart from the formal evaluation, some male

participants wrote that the course was not interesting.

Although both volunteer facilitators had had a strong willingness and a passionate attitude towards developing and running this course, the 67-year-old volunteer said that she had felt uneasy when she heard about the female participant with hearing difficulties; however, the older volunteer facilitator commented that she would have liked to learn how to approach this participant by understanding her particular case. During the course, the younger volunteer facilitator claimed that she had run into a number of difficulties when seeking to communicate and respond to participant questions and comments and that she had gradually lost confidence in conducting this kind of course. However, the older volunteer facilitator said that apart from the difficulties in balancing the roles of the volunteer facilitators, as neither of them were professional in delivering knowledge to ordinary people, it was difficult to attract the participants' interests in the themes and to effectively motivate conversations using stimulating questions, leading to some quiet/tough classes. The older volunteer facilitator also confessed that the participants tended to confine their conversations to mundane issues familiar to their daily lives even though she had hoped that they could gain a broader perspective from the volunteer facilitators' brief lectures and disconnect from their ego's hold. Nevertheless, the older volunteer facilitator was still positive and expected to deliver the same course with new topics in the following year with a newly appointed 80-year-old male volunteer with a teaching background.

As no formal training had been offered to the graduates of the leadership course that the two female volunteers had completed, the researcher offered to give them a special 3-hour individual session on how to be a good facilitator. However, it appeared that they needed more time to appropriately facilitate the class, as their lack of skills in this area sometimes hindered the group discussions as neither of them appeared to be fully aware as to why the participant conversations never gained altitude/steam. During the course, the volunteer facilitators appeared insecure about the topics and their background, delivering a convincing speech or responding to unexpected participant reactions. As there was one participant with an auditory impairment in this course who was always accompanied by two summary scribes, the volunteer facilitators' requirements were higher than in a normal classroom. Further, regardless of the actual status of the volunteer facilitators, as most participants were regular users of the lifelong learning centre within University A, their course expectations were higher than for courses conducted outside the university campus. Therefore, if volunteer facilitators are to continue to conduct their own courses within the university, to ensure course quality, the university should increase its volunteer facilitator interventions by determining the aptitude of each volunteer and providing appropriate training.

Conclusions

Because of Japan's rapidly ageing population, the number of older adults participating in volunteer activities has increased. This study sought to elucidate the advantages and limitations of older volunteer facilitators for a university's open study course. Though the research scale was quite limited, it was found that the older volunteer facilitators were able to demonstrate competent leadership skills and were particularly good at facilitating effective conversations in each of the groups by referring to their lifelong experiences and vast knowledge of human nature. A direct helping

relationship was observed between the volunteer facilitators and the participants, which could possibly lead to higher community well-being. However, the volunteer facilitators had insufficient classroom control, were not always able to deliver convincing speeches or respond to unexpected participant reactions and were unsure on how to treat those with special needs. Further, they provided inadequate information on each topic and had a laissez-faire approach to facilitating the conversations.

Therefore, it is suggested that the institution seriously think about the following. First, to ensure that this type of volunteering is meaningful, building knowledge about this kind of volunteering should be considered more seriously. Currently, as the volunteer facilitators are left to their own devices, it is difficult to recruit and retain older volunteers. Therefore, training opportunities for older adults should be provided based on their past experience and expertise to empower the volunteers, and it is important to develop specific strategies and guidelines to ensure older adults keep volunteering.

Second, as older volunteers have accumulated life experiences, expertise and social networks, the institution should see them as community resources that have the strengths and economic and/or social values (social capital) to enhance community well-being.

Third, as the responsible body for the course, the institution needs to determine the age to which older adults could volunteer and be resilient. Although it is important to respect psychological willingness, the institution should realise that there are physical vulnerabilities and possible risks, especially when dealing with those aged over 80; however, volunteering should not be limited by actual age.

Fourth, although agency-structured educational activities for older adults are a minor element of their learning, given that they prefer to manage learning for themselves, further studies should consider to what extent this learning environment could influence both volunteer and participant expectations.

Faced with the unprecedented challenge of a super-aged society, Japan, which has the highest percentage of people over 65 years old in the world, needs to take advantage of the new trend of older volunteers; however, further research is needed within actual contexts to assess the correlations between the social aspect of volunteering, the meaningful nature of volunteering and the mental and physical condition of volunteers.

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System Innovations in Design for Aging - A Research-Driven Multi-Stakeholder Framework for Transforming Health Systems

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Abstract

In many cases design approaches use a systemic point of view in order to gain insights that inform the process of developing new products and services or improve existing ones. At its best, design uses research methods as well as scientific evidence and creativity tools to tackle wicked problems in fields such as sustainability or health care. However, in order to have a long-term and effective impact design approaches must not only use a systemic point of view for isolated innovations but need to create or at least facilitate system innovations. Following the ideas of Geels and Schot (2007), Kemp et al. (1998) and Bizer and Führ (2015), system innovations are created at the intersection of technological, social and institutional areas requiring a high level of stakeholder engagement and using a transdisciplinary mind set. While this approach is state of the art in current research on design for sustainable development, it offers great potentials for design in the context of health care and aging. This paper presents a framework comprising of suitable methods and starting points for design research and practice to create, initiate and facilitate system innovations in the context of health and wellbeing.

Keywords: System innovation; transdisciplinarity; research-driven design; evidence-based design; salutogenic design; psycho-socially supportive design; design for aging; health care design; design research, design methodology

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Introduction

According to the United Nations (2019) people above the age of 65 are the fastest-growing age group worldwide. At the same time, due to improving standards in hygiene and healthcare, life expectancy is constantly rising causing the number of persons aged 80 years or above to be projected to triple, from 143 million in 2019 to 426 million in 2050 (UN, 2019). This demographic shift not only changes the proportions of various age groups but leads to a societal development from what can be described as the “fourth generation” (Higgs and Gilleard, 2015) as the classical phase of retirement can be divided into a more active and independent phase and a rather dependent and cared phase.

From a societal point of view, this development poses both chances and challenges to the overall population as it raises questions concerning access to services, engagement and participation in society as well as special offers and demands for healthcare and nursing. Many disciplines have created a versatile set of both conceptual and technological solutions as well as evidence concerning single elements of these challenges. For instance, for decades, care giver strain has been regarded as a severe danger for public health (Schulz and Beach, 1999). At the same time an increasing body of knowledge shows the profound effects the built environment can have on various aspects of aging ranging from walkability (e.g. Carr et al., 2011) to the degree of social interactions (e.g. Sommer and Ross, 1958). However, most design approaches and concepts focus on single elements as opposed to system innovations in the sense the term is used in the context of sustainable development (Geels and Schot, 2007). Due to the complexity and openness of these challenges associated with the aging population, “wicked problems” (Rittel, 1973) and with regards to the limited time frame even “super wicked problems” (Levin et al., 2012) like these require solutions on a system level focusing on concepts that integrate societal, technological and institutional aspects.

Transdisciplinarity

The herewith proposed framework for system innovations follows the basic structure of the transdisciplinary delta analysis as outlined by Bizer and Führ (2015). Therefore, the hereby proposed framework distinguishes two modes of work. The (a.) disciplinary mode describes the classical routines and knowledge that is known to each stakeholder from its own individual professional background. Usually, disciplinary work has an established set of methods, processes and strategies of problem solving while often staying in a conceptual silo. As opposed to this, the transdisciplinary mode refers to a highly interactive process that blurs the boundaries between disciplines and domains allowing a shift a perspectives and biases. Transdisciplinarity refers to the approach of including all relevant stakeholders and practitioners throughout the process. As opposed to disciplinary, inter- or multi-disciplinary approaches, transdisciplinarity depends on including academia as well as industry, civil society and institutional parties. This strategy is based on the assumption that wicked problems usually cannot be solved by single isolated disciplinary methods and routines as the disciplinary silo mentality prevents necessary disruptive solutions to be found (see Belcher et al., 2019).

Throughout the process described in this framework both modes are relevant at different stages. One of the major challenges of this framework is the ability to switch between both modes of work and the sensitivity to understand at which point in the project which mode is relevant. Therefore, a reflective meta-perspective is required that allows to guide the overall process between both modes of work.

System innovations

System innovations in design for aging refers to the definition of system innovations as used by Elzen et al. (2004) and Geels (2005a; 2005b) with regards to sustainable development focusing on complex socio-technical systems rather than solely technological innovations. In this sense a system innovation is “a transition from one socio-technical system to another” (Geels, 2005a: 2). Classical innovations such as an improved technical principle of a vacuum cleaner or the evolution from propeller-powered to turbine-powered aircrafts to not require broader societal and institutional processes to take place. Developments such as electrical mobility or circular economy however are based on technological solutions as well as societal and institutional processes (see Kemp et al., 1998). Among other aspects, adapted consumer behavior and values, regulatory frameworks, governmental subsidies and more need to be established for technological solutions to be effective and successful. Thus, system innovations occur at the intersection of technology, society and institution. Therefore, the herewith proposed framework is based on a transdisciplinary mindset of actively including stakeholders from all three spheres to contribute and co-create a joint solution.

Transdisciplinary framework for system innovations in design for aging

The herewith proposed framework is illustrated as a process diagram switching between disciplinary and transdisciplinary mode in 6 phases (8 steps). Depending on the complexity of the context and the challenges that are associated with the problem of concern, additional iterations and alterations might be necessary.

On that note, this framework is supposed to be a conceptual guideline for transdisciplinary processes that aim at system innovations in the medical context. It is worth mentioning however, that system innovations can hardly be designed in the classical sense, but merely facilitated and enabled. The actual realization of system innovations is done by the parties genuinely involved in the system of concern. As systems are interrelated dynamic structures attempting to establish system innovations requires flexible methodological approaches and constant evaluation and reflexion. Therefore, it can be seen as a paradigm shift to the person or team guiding this process to step back from actively designing the innovation itself and enabling and facilitating instead.

With regards to medical systems in general and gerontology in particular the goal of system innovations and the complexity that is associated with it depends largely on the level of zoom and the system of interest as the medical system itself consists of many systems and sub-systems.

Therefore, the overall process and methods that are presented here are meant to be examples of one possible way of applying this framework. A certain choice of sub-

system might lead to an essentially different set of tools and methods. This applies to the amount and selection of relevant stakeholders in particular.

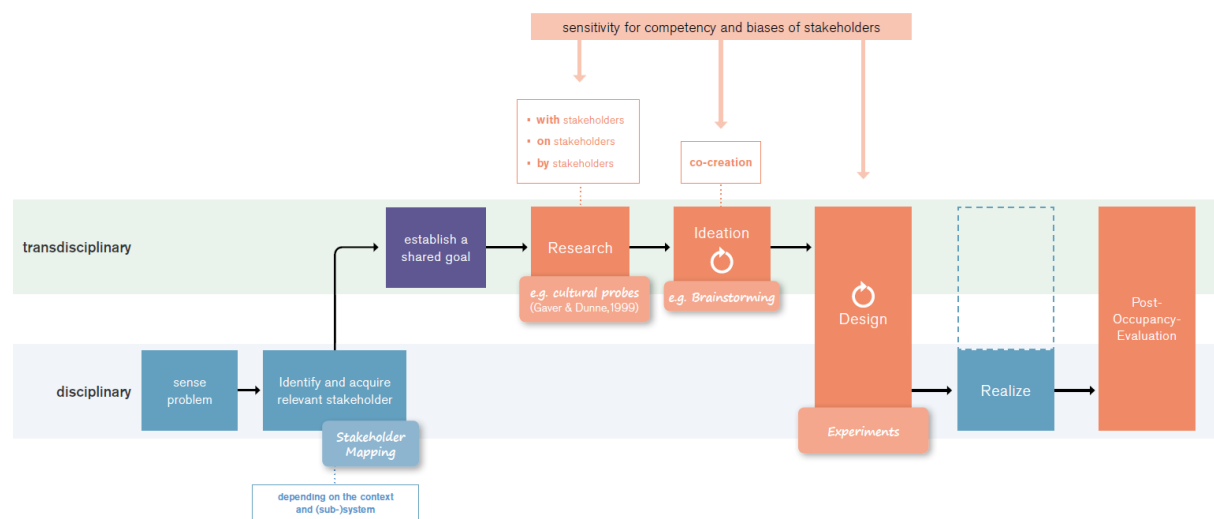


Figure 1: Transdisciplinary framework for system innovations in design for aging.

1. Problem impulse and stakeholder engagement

Like most design methodologies (e.g. Kumar, 2013) the innovation process starts with a problem impulse, a societal challenge that is sensed by one or more stakeholders. From this initial impulse onwards relevant stakeholders are identified and acquired. Since classical disciplinary knowledge and skills are needed to sense the problem and identify relevant stakeholders, this stage is associated with the disciplinary mode of work. In order to identify and acquire relevant stakeholders, a rigorous and comprehensive stakeholder mapping is needed. As with system innovations, relevant stakeholders should cover the societal, technological and institutional sphere of the problem.

With regards to gerontology, depending on the system of concern, stakeholders might include a big variety of groups including elderly and care giver as well as nursing staff, nursing home management and many more. One of the big challenges in the process is to facilitate discussion and negotiation on an equal footing overcoming hierarchies, biases and stereotypes by all stakeholders.

2. Establishing a shared goal

As opposed to classical innovations - for instance inside one single enterprise - system innovations require the inclusion of many different parties often equipped with opposing goals, mindsets and biases. Therefore, a mutual understanding of the problem and the establishment of a shared goal is of high importance in order to be able to initiate effective and sustainable system innovations. This goal needs to refer to the societal, technological and institutional aspects of the problem.

3. Research

Based on a shared goal, objective and valid insights concerning the stakeholders and the context are needed to inform the process of concept development. Therefore, a research phase should be conducted with, by and on stakeholders to gain a broad and concise understanding of the problem. While research on stakeholders stands for classical empirical methods focusing on the stakeholders (e.g. Visocky O'Grady and Visocky O'Grady, 2017), research by and with stakeholders refers to the active involvement and participation of stakeholders in collecting and decoding data (e.g. Gaver and Dunne, 1999). Especially with regards to the context of ageing and nursing, getting access to the tacit knowledge of various stakeholder groups is of high importance in understanding the current state of the system. Systems evolve and change in dynamic processes while values and norms as well as habits and routines constantly affect the people in these structures.

4. Ideation and Design

Using the insights and tacit knowledge acquired during the research phase a classical iterative ideation and design process is conducted to generate viable concepts and solutions. Again, this phase follows the principles of co-creation and stakeholder engagement. Depending on the size and composition of the group as well as the structure of the problem tools from the sphere of design thinking (e.g. Kumar, 2013) can be useful. In the later stage of the design process experiments can be seen as a valuable tool to test drive concepts in real life setting that can be scaled and adapted according to their performance. For instance, if the challenge of concern focuses on a system innovation with regards to nursing, new concepts could be installed in a small nursing home or just on department before scaling it to a broader initiative.

5. Realization

After designing and testing in numerous iterations a final concept is realized. Depending on the structure and scope of the concept, this phase can be seen as either more disciplinary or transdisciplinary, actively including various stakeholders in the realization and use phase. As opposed to classical innovations system innovations are significantly more procedural, requiring a series of steps by different stakeholders at different times. Some of these processes cannot be fully planned but need to be facilitated and monitored using a transdisciplinary meta-perspective.

6. Evaluation

With regards to system innovations evaluation is crucial. Since systems are interrelated structures that constantly change and develop in partly unpredictable ways, concepts that aim at creating or facilitating system innovations need to be evaluated throughout the design process as well as after the realization. This can be compared to classical post-occupancy evaluations in architecture (e.g. Hay et al., 2017). One of the big challenges in evaluating system innovations is to identify and quantify proper indicators that are able to measure the degree to which an intended outcome has been achieved.

Conclusion

The herewith proposed framework is supposed to give guidance in establishing system innovations in design for ageing. It is based on a transdisciplinary approach including a variety of relevant stakeholder from fields such as academia, industry, civil society and institutional parties in a co-creative process. By acknowledging the complexity of the challenges and chances that are associated with the ageing population, this framework endorses system innovations as a tool. These system innovations can hardly be designed in the classical sense, but merely facilitated and enabled. The actual realization of system innovations is done by the parties genuinely involved in the system of concern.

While this framework gives an overall guidance for the process it does not solve some critical problems that are related to transdisciplinary modes of work. To acquire the right number of stakeholders and to identify the relevant ones can be challenging. This applies in particular to the medical and nursing context, in which relevant stakeholders can have limitations that impede their participation in the process to some extent. Furthermore, especially with regards to gerontology and the diversity of systems and subsystems, this framework needs to be tested in real projects to be improved. In addition to that, more research is needed on what methods and tools are useful to support this process.

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