

Using ICT training as an arena for intergenerational learning experience. A case study

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Abstract

In Norway, the responsibility of citizens' e-inclusion services relies on municipalities through the administration of selected electronic health information and services, these institutions face the challenge of educating to use these health systems. In the case of ICT-illiterate people, the questions about what is the necessary ICT knowledge for basic use and how this content should be pedagogically delivered arose. This paper presents a pioneer intergenerational model for ICT education, in which young generations teach the basics of ICT use to elderly people without ICT experience. A qualitative evaluation of the piloted model in a Norwegian municipality was carried out using semi-structured interviews. The findings highlighted the fundamental role of the young people as experienced ICT users and teachers but also as a decisive factor for course participation for many elderly students. The outcome of the course was noticeable in both directions: most of the elderly attendees acquired basic ICT skills at the same time that young teachers had the opportunity to develop qualitative social values such as goal achievement and responsibility.

Keywords: teaching, e-inclusion, educational model, intergenerational relations, social responsibility, future generations

Introduction

Most of European countries' populations are involved in a general demographic aging process. These demographic changes will affect the pension system, health care services and labour market in the coming years, and it is defined as one of the main challenges Europe will face (Europe 2020 Strategy). Technology can make a significant contribution to quality of life in old age (Shapira, Barak & Gal, 2007) and in the North Sea region, policy makers have the responsibility to review the way they respond to aged citizens' needs via innovative and ease-to-use technologies. This creates an increasing demand for new products and services that potentially could empower elderly population within those geographical areas. Use of technology presents a unique opportunity to socialise and establish social networks that can alleviate loneliness and alienation and access to information is an essential part for health improvement and independent living. In the context where everyday more information is becoming digitally available, governments should guarantee the right of equal and granted access to information to their citizens through e-inclusion policies. ~~Old people are more prone to health problems and therefore access to health information~~

~~via the Internet could contribute to a greater responsibility for own health.~~ However, ICT and Internet use have historically presented obstacles among ICT-illiterate population. Technology adoption is a complex issue and older people have more problems in dealing with it than younger people which means that older adults may be less able to benefit from innovations in technology. Studies show that computer use and Internet use seems to contribute to older adults' well-being and sense of empowerment by affecting their interpersonal interactions, promoting their cognitive functioning and contributing to their experience of control and independence (Shapira, Barak & Gal, 2007; Cotton, Ford, Ford & Hale, 2012). Raising awareness of ICT use and developing efficient training programs for such use have been demonstrated to be an incentive among potential users (Shapira, Barak & Gal, 2007; Mitzner et al., 2010). At present, ubiquity of technology expands the range of such potential users in age (from early to old life), technology experience (from professionals with long experience to occasional users without IT skills) and health conditions (increase in technology use by healthy and ill patients). However, there is evidence of barriers in ICT use for inexperienced users. Examples of commonly reported barriers are lack of perceived benefit, lack of interest or motivation and lack of knowledge (Wagner et al., 2010). European Framework Programs (EU FP) promote the e-inclusion of citizens through the development and satisfactory use of ICT technologies. For instance, in Norway, electronic health information and services are among those only accessible via a national internet portal (i.e., www.helsenorge.no). Therefore developing ICT-use training tailored to the needs of users without experience is a necessary challenge for the e-inclusion of traditionally digitally excluded population. This ICT training, coupled with the awareness of its benefits can empower citizens for daily life tasks (e.g., online shopping), human communication (e.g., social networks and videoconferencing) and personal autonomy (e.g., access to wider sources of information). In Norway, the municipalities are in charge of the e-inclusion of their local people. At the same time, younger generations have traditionally quickly acquired ICT skills that could be effectively transferred to elderly people inexperienced with the use of ICT (Bailey and Ngwenyama, 2010). The overall aim of this study is to present the learning experiences gathered through an intergenerational model for ICT education taking advantage of the natural technology skills acquisition of young people to instruct inexperienced elderly people in the basics of ICT use.

Project research background

The background of this study is based on a contemporary research project, "iAge", an Interreg IVB North Sea Region (NSR) European project whose main aim is to promote e-inclusion among European areas in decline that are affected by an ageing population through promoting and increasing economic and social e-inclusion. The NSR region may benefit from a growing market where public institutions, private companies and entrepreneurs can help to develop dynamic and successful communities. The "iAge" project acknowledges the importance of new technologies for economic activity and new ways of delivering services. In the "iAge"-project, partners from 6 countries of the NSR cooperate and work to transnationally develop new approaches in service delivery and economic restructuring through joint development of ICT innovation. This joint implementation to increase the use of ICT among elderly the aged population, aims to keep them active and facilitating their participation in social and work life. The project pursues an inclusive growth, made by modernising the labour market by palliating psychosocial aging changes through ICT skill training and acquisition. The development of policies and strategies are built around the end-users as part of the inclusive approach.

"iAge" promotes a useful use of ICT through the instruction of inexperienced elderly old users in relevant tasks for their lives, such as Internet browsing and basic computer skills. This learning aims at improving employment opportunities, quality of life and social participation overall. In addition, the transnational activities and joint analyses carried out in the project creates an economy of scale to allow positive achievements towards the EU 2020 innovation and employment objectives and enables regions to improve the quality of results.

"Grandma on web"

Related with the iAge project, another second project, "Grandma on web", was developed to create educational programs in ICT to instruct elderly old users in Southern Norway municipalities.

The "Grandma on web"- project is an inter-municipal cooperation between local municipalities in the Kristiansand region (Knutepunkt Sorlandet) and the Centre for eHealth and Healthcare Technology at the University of Agder in Norway. The aim is to design, implement and evaluate educational programs in ICT to instruct elderly old users. In the period 2012 to 2014, three ICT courses for elderly were run by the "Grandma on the web" - project. This study comprises the evaluation of this educational program using semi-structured interviews. The purposes of the study were threefold: firstly, for the evaluation of the courses; secondly, to inform the development of a model for implementation of ICT training for an elderly old population; thirdly, to create a gateway of learning experiences between generations. The results from the evaluation will form the basis for this paper and will be therefore described in subsequent sections.

Research Questions

RQ1 How the experiences of the teachers, students and supervisors of the ICT courses can contribute to the necessary knowledge and skills that elderly citizens need to have to be e-included in the society?

RQ2 How can elderly old people be instructed in the use of ICT required to be e-included in the society?

RQ3 How can ICT training be used as an intergenerational learning experience?

Materials and Methods

An intergenerational teaching model

Course design

The courses for elderly old peoples were used to instruct them in ICT use and also to facilitate a learning experience gateway between different generations. The teaching model consisted of a program that combined ICT training for elderly old people with an educational program on a school. Teachers were schoolchildren (14 years old) who organized ICT-courses for their grandparents and other elderly old persons in the community. The course formed part of an elective work-life training program at a middle school, specifically designed for pupils who want more practical subjects at school. Grandparents and other elderly old people in the community were invited into the school for a two-hour course per week throughout during a total of six weeks. The program was coordinated by an experienced teacher. In the courses, school children worked as teachers and each pupil was responsible for instructing one elderly person throughout the course. The teachers (pupils) sat beside the elderly adult students to instruct them. An easy-to-read simplified user manual in lay Norwegian language created in collaboration with volunteers from a volunteer center in the municipality was available for each student during the lesson. The manual included didactical explanations of basic ICT functionalities, such as how to start up the PC, how to access to online email system or using applications such as *Google* search, online newspapers, *Facebook* and *Skype*. Navigating through travel sites and checking out how to book tickets was also part of the program. Three free courses were arranged at a small-middle size school in a rural area in Southern Norway between 2012 and 2014.

Recruitment of Courses' Attendees

30 elderly old people participated as students in the three courses, whereas 14 contributed to the evaluation of the courses. Course participants were invited either by the schoolchildren (teachers) or by a representative from the municipality. In addition, the courses were advertised in the local newspaper. Another 30 young people were recruited as teachers. Every course had one adult person working as a supervisor.

Evaluation of the courses

Design

The study had a qualitative, descriptive and exploratory design using semi-structured interviews for the attendees, teachers and the coordinator of the courses.

Data collections

Data were gathered through 6 semi-structured interviews following an interview-guide consisting of 10 open-ended questions, three individual and four focus groups. All interviews

Comment [ET1]: I suggest to drop this first RQ - I think that we mainly answers to RQ2 +3 in the paper. In addition I think that parts of RQ 1 is included in RQ2

were conducted in the training facilities, three group interviews and one individual interview immediately after the last course section, while two individual interviews were conducted four weeks after course completion. The average duration of the individual interviews was 30 minutes and of the group interviews was 35 minutes. The interviews were carried out between April 2012 and April 2014. All interviews were audio-recorded and then verbatim transcribed.

Participants

Fourteen elderly-old participants of the 3 ICT-courses were interviewed, 12 women and 2 men. There were 5 teachers in total: 4 young teachers (all girls, 14 years old) participating in the last course and 1 adult person who worked as a coordinator and as a supervisor in the last the course (woman, 55 years). Recruitment of participants was made in cooperation with a contact person from the municipality who gave the participants written and oral information about the study. All participants signed informed consent before interviews started.

Data analysis

The interviews were analyzed and interpreted according to Kvale's [3] three levels *self-understanding*, *common sense* and *theoretical understanding*. The analysis consisted of three differentiated steps. In the first step, the researchers condensed the informants' statements in meaning units. In the second step an initial, thematic framework was presented. In the third step, a theoretical discussion was conducted on the basis of the findings. Interpretations from steps one and two are presented in the results section, and from step three in the discussion section.

Ethical considerations

Prior to each interview, all participants received written and oral information about the project. Each participant was informed about their data confidentiality, that participation was voluntary and that they had the right to withdraw at any time without reason. According to the Norwegian regulations for ethical approval, the research project was not required to be registered with the Norwegian Research Ethics Committee (REK), but was authorized in compliance with the privacy protection of Norwegian Social Science Services (NSD), reference number 33519.

Results

The main goal of this study was to pilot an intergenerational teaching model in ICT for elderly people. Experiences from the pilot were identified through interviews and are presented here. The information gathered in the different interviews was categorized in two groups, "factors external to the course" and "factors internal to the course".

Factors external to the course

The first category of the data analysis includes factors external to the course, such as the ICT background of the participants and the motivation for participation in the course.

Former ICT experience

The majority of the participants did not have any or had very little experience with computers, even though most of them had a computer at home. One participant said: "*Now the machine has been there for twenty years because my husband used it for work purposes. It is a very long time without using it.*" Another participant, who was invited by his granddaughter, said: "*I have never had anything to do with computers. I barely knew what they looked like.*"

Motivation for Participation in the Course

The interviewees were asked about their motivation for attending the course. Several of them were not initially motivated and did not previously have the intention of learning how to use computers. However, they joined the course because they were invited, and sometimes convinced, by their grandchildren or by the contact person from the municipality. One participant said: "*I just tell to myself that this was quite a coincidence that all this happened. I had never imagined that I would use computers [laughs]. I had not done it unless someone younger or someone else had persuaded me to do it.*" Another participant was invited by a young teacher that she had previously babysitted: "*[...] and then she said that she would not participate in the project unless I went there.*" Besides of being pushed by grandchildren or relatives, another reason for course attendance was the desire to become self-reliant: "*[...] to avoid having to disturb the rest of the family.*" Other participants were motivated by specific needs, such as learning to manage photos, seek information on the Internet or communication via email.

Factors internal to the course

The second category comprises the identified factors related to the ICT courses, such as the general evaluation of the course, pedagogic approach of course instructions, learning output and intergenerational experience.

General evaluation of the course

Participants were unanimously satisfied with the course. One participant told that, at the beginning, she was skeptical and reluctant to attend: "*[...] I would not attend, just because I saw all the time they spent on it, so I would never do it.*" She finally attended because she felt persuaded: "*I had never done it unless someone had come and asked me. I had never voluntarily gone to just learn data.*" At the end of the course, she was finally happy to have participated: "*[...] but I am very happy about it.*" The young teachers gave slightly different feedback on how they felt about the course. Those who have brought with them their grandparents were the most satisfied. They expressed that teaching was challenging because it was difficult to find enough tasks to do with the elderly-old students: "*It was hard because we run out of tasks.*" In addition, the coordinator of the course expressed that the course was very successful, especially for those who have been with the people they know: "*The best thing is that they have their own grandparents or other relative with them. It is great.*"

Pedagogic approach of course instruction

The ICT course was organized with a combination of demonstration and one-to-one instruction methods. The participants argued that this type of teaching worked best for the lessons,

especially including first a short demonstration at the projector that all students could simultaneously see: "[...] you learn more by sitting one-to-one". Some participants felt that a possible incentive would be if they could choose by themselves what they would do on the computers: "[...] then you pick out what you want", although others wanted more structured contents with freedom for own tasks: "Maybe it could have been a bit more structured, but in a way that one can still work with things one is interested in". The supervisor believed that it was good that the course allowed up to participants to decide for themselves what they wanted to learn: "It has been very opened and they have controlled themselves. I think they liked it".

The diversity of students' and teachers' ICT-level presented a challenge for the developing of an effective and pedagogical teaching program. For instance, there were cases where the students did not have any previous experience with computers, others with some experience and others with long experience using specific software in conjunction with previous work. Actually, there were also great variations in the teachers' ICT competence, and in some cases teachers had a different expertise than the students sought. In this context, most of the students believed that it was positive to have a guide of what to do. Some thought that they might like to have even more tasks and a more structured course, while others preferred the ability to choose by them what they would do. The elderly-old students found that, overall, there was a suitably number of lessons, but however, the young teachers commented that the course was extensive because it made the learning process too demanding that the elderly had difficulty in defining their needs: "They do not know what they will learn. They do not know anything about the Internet". They quickly run out of ideas and did not know what to do. A recommendation for a future course was to include more free-choice tasks.

The participants pointed out that the presence of the supervisor throughout the course was an important factor to monitor the development of the course and, especially, to monitor if the young teachers needed any help: "It has been good because their supervisor is also there. I think it is a bit dependent on her". The teachers were young and with different type of ICT experience and personal skills, so it helped that an adult was present and in charge of the students.

Learning output

The participants were asked about how the course had influenced their ICT daily use. Many participants answered that a positive outcome of the course was that they had become more confident in the ICT use, which lead them to try new things out on their own: "I learned a lot, and then I came back a little into it again", "...so I learned actually more things than what I had previously thought". A woman told that she had become less afraid of making mistakes: "[...] and I am no longer so afraid of doing something wrong", and another woman meant that it was not as scary as she might have thought. In addition, it triggered their curiosity about what opportunities existed around computers. The course inspired students to want to learn more and attend future courses. Some have invested in new computers or tablets and some of the participants told that they, through Facebook, had created contact with old acquaintances and relatives, and that they had enjoyed on doing it.

Intergenerational experience

One of the main goals of the course plan was to develop a model that combined training of ICT for elderly-old persons with contact between generations. The elderly-old students who had grandchildren as teachers were most satisfied, but also many of the other students thought that it was very positive to have young teachers.

Most participants thought it was very pleasant to spend time with the youth. One of the participants said: "And I think it is great fun that it is the children who teach us. It is absolutely amazing. Suddenly they are wiser than us. Otherwise, it is usually us who are wiser than them." In this way, it was the young teachers who had the useful knowledge, which gave them a sense of empowerment: "They master it in a different way. I think that is good for them." In that way, the ICT knowledge that most of the young teachers was useful for teaching elderly students: "I think they are very good. The kids are absolutely amazing in what they do." One of the participants said: "I cannot praise enough she who was my teacher."

However, some pointed out that there were noticeable differences between the students: "I changed a student along the way. The first student knew a lot and was a very good teacher, but then I got another one that really was not". It was also commented a disparity between what knowledge the students were interested in and teachers' competence. A woman stated: "[...] often she had no knowledge of what I asked about, and then she simply answered - I do not know". Several of the elderly-old students reported that some of the young teachers were shy and that made them to feel sorry for the students: "[...] and she was very shy, so I felt so sorry for her", and the students felt responsible to make the situation more comfortable: "After a while, we got very good contact, so she talked to me at the end of the course, but at first she did not". Some of the students lacked initiative. Therefore, it was sometimes difficult to know for the teacher in what to work next. A woman told: "I had a student who did not say anything [...] I was a little indecisive at the end: what should I do now?"

The supervisor stated that the program contributed to the contact between generations: "It is so much fun when the relationship between young and elderly-old works. Some of them get closer in their communication with their grandparents. They are delighted when they sat there and looked at pictures together with their grandparents". She was keen to continue to build on the relational aspect of the program: "If we are going to do it again, I think we should put a little more effort into getting more senior students who have some close relationships to the children". However, the young teachers gave slightly different feedback on how they experienced the contact with the elderly. Some thought it was very nice, while others believed that it was embarrassing. Those who taught previously known elderly-old students were the most positive. When asked about what they had learned by delivering the course, they replied that they had learned the importance of patience: "It was hard to keep your patience".

During the courses, the act of socializing was also emphasized. Sometimes it was the young teachers, together with the supervisor, who initiated it, while other times there were some of the students who initiated it, e.g., bringing food: "[...] and so we had coffee break, and I had made some cake". Other time was a general event arranged which included all the participants and students, such as in the aftermath of one of the courses where it was organized a social evening with food.

Discussion

There were relevant findings in the two categories of factors gathered through the semi-structured interviews. Inside the first category, "factors external to the course", the motivation for participation in the course resulted to be a relevant component for the attendance of the course. Several of the participants were not initially motivated. Most of them had none or very little experience with ICT. One important reason for this may be that they didn't understand the technology sufficiently to appreciate the benefits. This could have resulted in a potential obstacle for the attendance. The inexperience with ICT usually carries out the unawareness of ICT use benefits, an important factor for promoting ICT use (Wagner et al., 2010). Studies have revealed the importance of older adult's attitudes towards technology before using computers (Mitzner et al., 2010; Kim, 2008). Students who are unaware of the things they could, need or want to learn are more reluctant to participate in the course. Therefore, an important part of the courses are to educate the old about the possibilities use of ICT provides. This reinforces the idea of creating a detailed learning plan for the course, where teachers are previously instructed of the range of tasks that should be included in the course. In addition, informing the students in advance of what are the benefits and possibilities of ICT use can ease the learning process. In this line, often positive attitude changes are found once older adults use computers. When they understand the potential, they start to use it (Mitzner et al., 2010; Kim, 2008).

One of the key elements found in the model was the role that the young students played as an informant of the course and as an incentive for such attendance. Many of the attendees commented in the interview that the main reason for their attendance was that young people persuaded or helped them to change their mind for attending the course. The relationship between the young teachers and the elderly students, e.g., relatives or acquaintances, increased the overall student's satisfaction with the course. The ability to have a good relationship with grandchildren was an important motivating factor for many of the participants. According to gerontology theories of motivation is social relatedness a significant factor in later life (Carstensen, 1999).

The course was created with a combination of demonstrative one-to-one instruction methods. However, the students sometimes had too little things to do. In some cases, students successfully finished the content of the course sooner than the class was finished and they did not have more things to do or learn, losing their interest. In these situations it was difficult for young teachers to instruct them with new unplanned tasks. Therefore, a structured content would have given the students a route map to follow. However, a right learning curve and a balanced amount of planned tasks should be found to not accidentally overload the students with too many or too new ICT tasks, covering at the same time a diverse background of ICT skills and experience among the students. An alternative approach could give the students freedom to decide what they want to learn. However, this could attach a potential trade-off of deciding their own tasks, which could overload students with too many decisions to make without actually having enough experience for it. Therefore, a combined approach is proposed, where a planned course structure is made at the same time that students are given the option to decide what to do. Studies suggest that it would be better for

older adults to have more time or self-paced practice to master learning content (Kim, 2008). At the same time, using aid devices as writing materials for taking notes or printed instructions can be advantageous for older adults. Such additional material must be easy-to-read with large fonts and simple graphic illustrations (Kim, 2008).

Another potential problem is the wide range of ICT experience and knowledge that students might present. This challenges the preparation of the teachers who should be able to fill the gap between students with different backgrounds and experiences. A possible way to solve the gap is to send a questionnaire in advance to future students asking questions about ICT experience, motivation for participation, what they would like to learn and interests/hobbies. Older adults prefer interesting and engaging material (Jones, 2011). Providing the teachers with this information can contribute to the course program planning and improve teachers' preparation to cover adult students' needs. This will give useful information about the elderly needs in general (e.g., what sort of information can facilitate independent living), and specifically related with the course (e.g., health portals, internet banking). According to Shapira et al. (2007), preparing Internet programs for the elderly require special attention to various factors characterizing this population. Studies shows that because of age-related changes in cognitive and physical functions, older adults are slow, make more errors, and are less likely to have self-confidence in their computer-using abilities (Kim, 2008). Therefore, it is important to develop learning material that best fit older persons and specific individuals' characteristics (Jones, 2008; Wagner et al., 2010). However, the implementation of these recommendations might be difficult to put into practice at once. Therefore, the supervisor/s should play a key role in the development of the learning program and especially on young teachers' instruction adapted to the local particularities and needs of the old students.

The evaluation showed that ICT use learning was an arena for an intergenerational experience. For instance, the one-to-one teaching approach provided a closer contact between teacher and student that reinforced the link between old student and the young teacher. However, not everybody has old or young relatives, which can make difficult the ideal one-to-one teaching approach between young and old relatives. The obvious solution for these cases, to randomly couple a young teacher with an old student, did not always resulted in a satisfactory learning process in the situations where two people do not know each other and have to collaborate in the course. Therefore a planned program can provide a starting point of collaboration between teacher and student even if they do not have many things in common.

Once the first barrier of ICT use is removed, a range of applications is available for the old students that can cognitively and physically stimulate them, such as playing games and social contact.

There were cases where people who would never go to a course by themselves went only because they were asked by a person they knew (young teacher relative or acquaintance), and thank to that could have social interaction and get to know other people.

The evaluation also showed that the elderly felt that they had a positive learning outcome of the course. For many of them the course was a door opener for further exploration of the Internet's possibilities and many of them had particularly great pleasure of discovering the opportunity to have contact with friends and family through social media. It is precisely in this area that the use of technology can have a huge poten-

tial in relation to older people in future. Social isolation is one of the biggest health challenges facing the elderly today. The social capital tends to decrease with age due to impaired function and increased risk of loss of partner and friends (Pore 2009). Research has shown that by providing elderly people social activities and strengthening their social network, depressive symptoms will decrease and quality of life will be improved (Porsman, Nordmyr, Wallberg 2011). For the elderly, the use of Internet can help establish or maintain their social network despite health deterioration.

Questions and answers course creation guide

Several questions and some answers are next presented in order to provide a rough guideline for a similar ICT course creation.

Who is the course addressed to?

It is important to have some idea of students' background. To improve the adequacy and relevance of the course for the students, it is recommended to individually ask several key questions to students, such as:

- How many years of experience do you have with computers?*
- Do you have a computer at home?*
- Is there anything specific you would like to learn?*
- Do you have any special interests or hobbies?"*

Who is going to teach it?

In this case young teachers are recommended because ICT teaching is used as an arena for an intergenerational experience of learning. In this case there is a need for an adult supervisor with teaching and ICT experience to help in any problem. Teachers should be equipped with strategies specifically designed to assist older adults.

What should be the course content?

The most important goal of designing ICT courses for older adults should be to increase their computer self-efficacy. The course program preparation should be based on the answers previously gathered from the students and should also include a core curriculum for the students to learn the benefits of ICT for social participation. The program content should be tailored to students' needs, their current level of ICT use and the one to achieve. However, it is especially relevant for the teachers' preparation to be aware about age cognitive and physical decline that old students may have. In addition, developers of programs should bear in mind the barriers that older adults' perceive to their computer use, in particular the perceived lack of benefit and lack of motivation. Thus, teachers should be trained to highlight benefits of ICT use and motivation for use.

It is recommended to have a manual per student for basic ICT use where they can search for information related to the course. Future content of the manual could include information sources about relevant general topics customized for the students, such as health portals, local organisations and activities.

Another lesson learned from the course experience is that to have a projector with a large screen at once could be used as an additional tool for showing specific applications or solve general problems and where all students can see the same

content at the same time (e.g., how to log in to Skype for videoconference or how to set up the computer video camera).

What should be the course structure?

The course was delivered in sessions of two hours per week over a period of six weeks. The key is to spread the course through a series of weeks to create a routine, but without an excessive number of hours per session that could risk in tiring the students, and also teachers. It is recommended to have structured task pre-made to present the students and the teachers have the solutions at hand. At the same time, free choice tasks where students ask for specific problems or skills they would like to learn. In this latter case, a list of possible choices would be useful to have teachers aware and prepared of potential tasks that they could be asked to teach to.

Conclusions

A qualitative evaluation of a piloted model using ICT training as an arena for intergenerational learning experience in a Norwegian municipality was carried out using semi-structured interviews. The course was designed to teach elderly students inexperienced in ICT use. The teachers were young pupils of 14 years-old supervised by an experienced teacher. The course formed part of an elective work-life training program at a middle school, specifically designed for pupils who want more practical subjects at school. An easy-to-read simplified user manual in lay Norwegian language created in collaboration with volunteers from a volunteer center in the municipality was available for each student during the lesson. Three free courses were arranged at a small-middle size school in a rural area in Southern Norway between 2012 and 2014.

The findings highlighted the fundamental role of the young people as experienced ICT users and teachers but also as a decisive factor for course participation for many elderly students. The outcome of the course was noticeable in both directions: most of the elderly attendees acquired basic ICT skills at the same time that young teachers had the opportunity to develop qualitative social values such as goal achievement and responsibility (see Fig. 1).

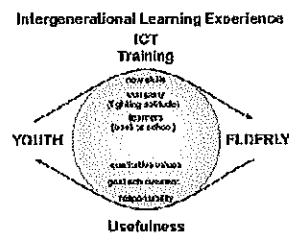


Figure 1- Scheme of the intergenerational learning experience in the ICT courses

Acknowledgments

We thank all participants of the ICT courses for their contributions in the study. Financial support was provided by the Interreg IVB North Sea Region (NSR) European project "iAge".

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