International Journal of Health Research and Innovation, vol. 1, no. 1, 2013, 25-46
ISSN: 2051-5057 (print version), 2051-5065 (online)
Scienpress, 2013

Educating Teachers and Multipliers for Future Work with the Elderly and the Role of Motivational Workshops for the Elderly's Future Participation in ICT Training Courses

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Abstract

The aim of this article was to find potential connection between positive experiences from ICT training courses gained by teachers and multipliers and their ability to affect elderly people's willingness to learn ICT skills and motivate them for future participation in ICT training courses through motivational workshops. Within the study the authors focus on the evaluation of the ICT training courses for teachers and multipliers and the motivational workshops for the elderly. The data obtained was quantitative and analyzed using SPSS software. The authors found a significant correlation between the number of possibilities for discussion provided during the ICT training courses for teachers and multipliers and the opinion that, from an overall perspective, the course helped the participants to be more sensitized to intergenerational issues and so understand the elderly people better. Similarly, the authors found significant correlation between the number of discussion possibilities during the motivational workshops for elderly and the level of interest in participation in future ICT training courses. The study showed that individuals who work in a teaching/learning process with elderly people need to be properly trained to be able to transfer knowledge and motivation to the elderly. Motivational workshops for the elderly should focus on individualized

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Article Info: *Received :* December 20, 2012. *Revised :* February 6, 2013.
Published online : March 31, 2013

learning methods which positively affect elderly's future motivation to learn ICT skills.

Keywords: Elderly people, Teachers, Multipliers, Information and communication technology (ICT), Willingness to learn, Motivational workshops

1 Introduction

Understanding older people's issues, such as age-related changes that restrict physical and cognitive functions, is necessary when developing ICT training courses or in the actual implementation of ICT training for the elderly [1]. Elderly people can experience a lower level of self-confidence when it comes to their abilities to use computers [2, 3], and have various fears or experience frustration [4], which is why specific support at the early stages of ICT training is important for the elderly to overcome initial barriers [1].

Nycyk & Redsell [5] indicate that teaching and training elderly people to use technology positively influences their mental activity and overall, has a favourable impact on their mental health; however, elderly may be less motivated to use ICTs than other demographic groups because they are unaware of the potential benefits of use [6]. Naumanen & Tukiainen [7] mention a study by Purdie & Boulton-Lewis [8] on aspects of motivation for learning ICT; they carried out a survey among elderly people and found that the most important learning needs were related to transport and health and safety issues, rather than the technology itself. Additionally, one of the main motivators for learning ICT is being able to participate in the development of society and keeping up with the technology [9, 10].

When teaching elderly people to use computers, the didactical approach should be oriented toward increasing their motivation. Therefore, training sessions for the elderly should be organized with peer trainers, though Carpenter Buday [11] do agree that intergenerational training also has specific benefits for elderly people. Additionally, ICT training courses need to be designed in a way that dispels anxiety. Training facilitators need to empower elderly people to feel more confidence in using computers and in their ability to solve problems if any occur; moreover, ICT training courses should be patient, paced, jargon-free, accessible even on call and of sufficient duration [11]. The facilitators should follow the basic recommendations for teaching elderly people to use computers, the most important being: small teaching units, which should be prepared with specific goals connected to the previous knowledge of the elderly; meetings should include enough time for the elderly to ask questions; the elderly should be given the opportunity to take notes and clarify matters remaining unclear; training courses should not include a lot of reading materials; enough time should be provided for the development of specific practical skills; large monitors should be used; a graphic user interface should be carefully prepared for disabled elderly people with any kind of impairment; large icons should be used; and the colors of the text and background should be optimized [12].

Mayhorn, Sronge, McLaughlin, & Rogers [2] and Crow [13] suggest that clear learning objectives should be presented to the elderly participants before ICT training, and well-defined learning units should be prepared.

Leaffer & Gonda [14] recommend that the elderly should be divided into groups according to the extent of their computer or Internet experience. It is especially important,

according to Carpenter & Buday [11], that procedures are described in simple language that elderly people can understand.

Furthermore, a study by Irizarry, Downing, & West [15] showed that the elderly who attended Internet classes felt thrilled because they were a part of the new Information Age. The elderly participants in their study stated that it was a fact that they were still behind their grandchildren, but that they were closing the gap. The study recommended that ICT teaching courses should include more abstract concepts of advanced technology, in order that especially those among the elderly who have limited access could obtain ICT knowledge. In contrast, Goodall, Ward, & Newman [16] showed that elderly participants have no interest in learning how to use computers, and cited as reasons their age or seeing no point in doing so. Moreover, the elderly did not know how and why they should use computers, which shows that they should receive much more information. It might be true that the elderly will show less enthusiasm for participating in online forums or chat rooms, but they will still recognize the benefits of communicating with family and friends, or going online to search for health information or for pension advice, etc. [6].

The purpose of this paper is to present a personalized method of teaching ICT skills developed within the European project "Promoting the improvement of ICT skills and well-being of the elderly by inter-generational and multi-sectoral education" (acronym PRIMER-ICT). A personalized method of teaching ICT skills was developed for three different groups: teachers, multipliers and elderly people. The PRIMER-ICT project aimed to study two aspects:

1. Potential connection between positive experiences from ICT training courses gained by teachers and multipliers and their ability to affect elderly people's willingness to learn ICT skills and motivate them for future participation in ICT training courses through organized motivational workshops;
2. Training of elderly people in ICT skills/practice using an inter-generational and multi-sectoral approach to training and decreasing the degree of isolation of elderly people through the promotion of ICT in Slovenia, Austria, Ireland and the UK.

In this article the authors will present results relating to the study of the first aspect. In addition, the project consortium surveyed the nature of elderly people's experiences from the ICT training courses, and the results will be analysed and reported in a future research article.

In this article, the term 'project consortium' refers to those who participated in the PRIMER-ICT project, while the researchers of this article are referred to as 'the authors'.

2 Conceptual Framework of the Personalized Teaching Method

According to the research reports reviewed, elderly people mainly participate in ICT trainings managed by one or two teachers [15, 17, 18] who are ICT experts. Despite the fact that the ICT teachers implement various didactical approaches [19], they are still using a traditional method that focuses on lecturing in a classroom [20] and where knowledge transfer always takes place in one direction: from teacher to elderly person (Figure 1). This kind of presentation of content by a teacher does not typically promote an active participation and engagement of the elderly person. What is more, the project consortium raised the problem of a semantic gap between teachers and elderly people, caused by the teacher's incapability of intergenerational understanding. A semantic gap occurs when one person does not understand the other [21] and is manifested through the

teacher's misunderstanding of the elderly people's needs and living habits, of the circumstances in which they live, the language with which they communicate, etc., which could additionally reduce the elderly people's motivation for ICT interaction.
Figure 1 presents the conceptual background of the personalized teaching method which was developed on the basis of the traditional classroom teaching method.

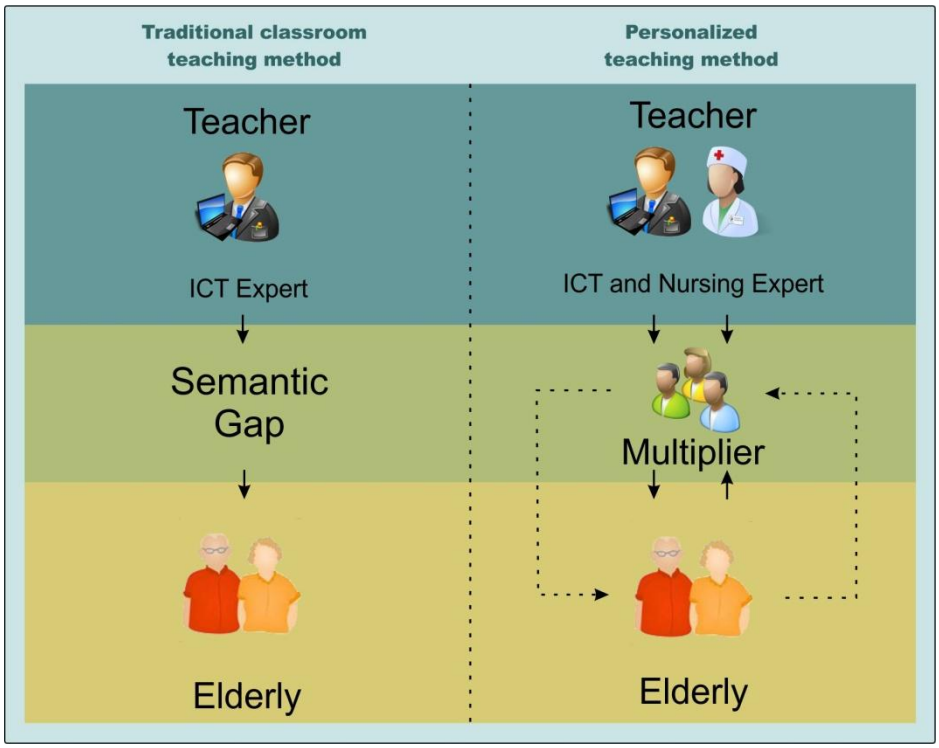

Figure 1: Traditional classroom and personalized teaching method

The European project PRIMER-ICT, which started in January 2009 and continued for 24 months, was led by the Faculty of Health Sciences at the University of Maribor, Slovenia, and included three partner institutions: the Carinthia University of Applied Sciences, Austria; the University College Dublin, Ireland; and the University of Surrey, UK. The main objective of the project was to develop a personalized teaching approach based on the blended learning paradigm and which combines a flexible e-learning method with traditional forms of learning, such as face-to-face learning [22]. With the purpose of reducing the semantic gap, the project consortium expanded an existing type of teaching ICT skills to the elderly; in addition, the group of teachers instructed a special group of multipliers on the intermediate level (Figure 1). The multipliers were instructed by teachers who were ICT and nursing experts; therefore they acquired not only ICT knowledge and skills, but also knowledge on health, gerontological and social care. Thanks to their knowledge of both fields, the multipliers could understand better the intergenerational issues of the elderly, which was necessary for their successful future communication with the elderly. The role of the teachers was only to prepare the multipliers and they were never in direct contact with the elderly; moreover, the knowledge transfer between teachers and multipliers was always in one direction only; from teacher to multiplier. In contrast, the multipliers used the personalized method of

teaching the elderly, with the aim of making sure that the elderly could use the e-learning materials so as to learn in the easiest and most effective way. Additionally, the role of the multipliers continued after the ICT training as a constant monitoring of the elderly people's progress and motivation for a successful adaptation to ICT. Communication between the multipliers and elderly people took place in both directions; multipliers became consultants, guides and resource providers of ICT knowledge, who provided structure to the work of the elderly and encouraged self-directed learning [23]. On the other hand, the elderly were active participants in the teaching-learning process, who emphasized an active search for information and built their own knowledge through this process. In the long term, a highly motivated elderly person could even become a multiplier and transfer ICT knowledge and skills to another elderly person, thus becoming a real, evidence-based practice example.

In the personalized teaching method, the training for the elderly people started two steps away from the actual ICT training courses designed for them; with educating the teachers and multipliers. However, later on during the learning process, the multipliers will teach and work with the elderly people; they are therefore involved in focused and well-defined ICT learning with the aim of preparing them in the best possible way for the future running of ICT training courses for elderly people. The authors strongly believe that the inclusion of multipliers in training elderly people in ICT skills can provide all the support needed not only during, but also after the ICT training and that it has an important impact on the motivation for the computer engagement of elderly people.

2.1 Overview of the ICT Training

The project consortium, which included experts from various fields (nursing, gerontological, social, psychological, didactic, pedagogical and computer sciences), developed ICT course materials for teachers and multipliers. The contents of ICT training courses were developed on the basis of the experts' scientific knowledge and experiences and available state-of-the-art reports on didactical concepts used in teaching the elderly how to use computers, of the theoretical background on the education of elderly people and on education with new media. Primarily the contents of the ICT training courses were developed in the English language and were later translated into Slovene and German.

Figure 2 presents the structure of the personalized method of teaching ICT skills to teachers (1st level), multipliers (2nd level) and the elderly (3rd level), involving motivational workshops for all three groups.

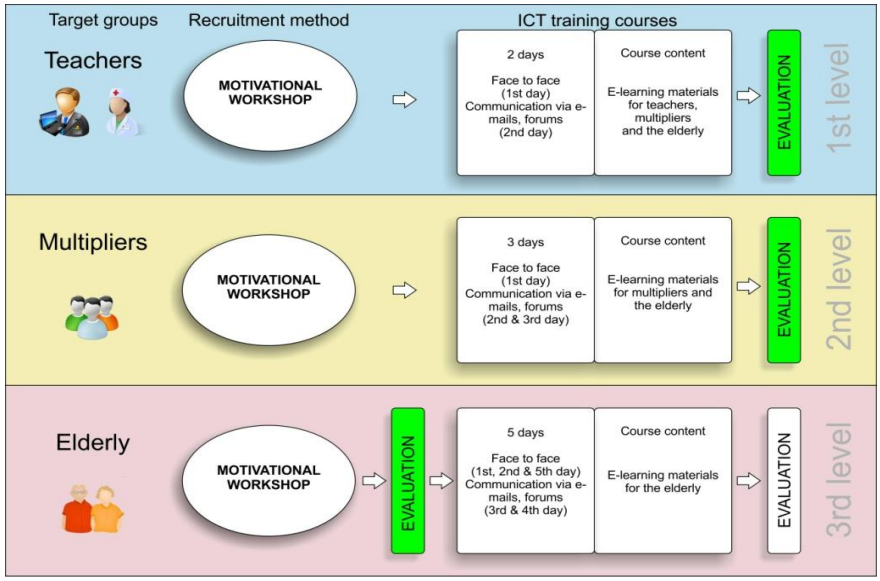

Figure 2: Structure of personalized method of teaching ICT use to teachers, multipliers and the elderly

The method of recruiting teachers, multipliers and elderly people was very cautious; the project consortium disseminated the project materials in each participating country and additionally organized motivational workshops for all three groups to promote the unique materials. The dissemination strategy included the development of a project web page (www.primer-ict.eu), as well as flyers and brochures, which were translated from English to Slovene and German to enable the dissemination of the project results and the promotion of the ICT courses not only on the European and international levels, but also on the national and local levels. Additionally, the project consortium used emails, phone calls, face-to-face invitations and working meetings to recruit all three groups, moreover, to recruit multipliers, the project consortium used scientific conferences and other events to spread the information as widely as possible and let people know about the possibility of participating in the project. The dissemination was aimed at a number of different groups and individuals, targeting a wider potential audience for future participation in the ICT training courses [24].

2.1.1 ICT training courses for teachers

A total of 50 teachers participated in the ICT training courses which were implemented in Slovenia, Austria, Ireland and the UK from June to early August 2010. The majority of those participating as teachers were nursing and computer science experts; 40% originated from the UK, 36% from Slovenia, and 12% each from Ireland and Austria [25].
The training courses for teachers lasted two days. The courses for teachers were led by facilitators (researchers from the project team who prepared the teachers for further work with multipliers). The facilitators prepared written materials for teachers, multipliers and elderly people, so that the participants could make notes. Additionally, the facilitators monitored the participation with an attendance list and gave the participants an evaluation form, to allow them to critically evaluate the course implementation and to recommend any possible improvements. To assure effective learning, each facilitator worked with a

maximum of 8 participants.
The content of the ICT training included basic characteristics of e-learning, knowledge about teaching and learning online, e-learning for elderly people (solutions and barriers), theories about profiling participants and blended learning, various recommendations for multipliers, didactical principles and guidelines. Additionally, materials for teachers included the module "Searching the web", which aims to develop skills and knowledge for browsing through the materials prepared for multipliers.
On the first day, the facilitators introduced the participants to the learning materials prepared for teachers, multipliers and elderly people. The participants were included in the reflection cycle, discussed the materials and had the possibility to raise open questions (Figure 2). At the end of the first day, the participants were assigned homework which they were to complete in their own time and at their own pace. During day two, the participants were instructed to browse and review the PRIMER-ICT project web page and the Moodle environment. These were developed within the project to allow the participants to study in detail all the materials prepared for the three groups (teachers, multipliers and elderly people). During the individual work, the participants (future teachers) were able to communicate with the course facilitators via email and a forum on the project web site.

2.1.2 ICT training courses for multipliers

A total of 78 multipliers were involved in the ICT training courses, and they originated from Slovenia (33.3%), UK (25.5%), Ireland (23%) and Austria (17.9%). The majority of the multipliers were nursing students (53.8%), people working in elderly homes (15.4%), academic staff (8%), and self-employed persons (8%), while smaller percentages were school teachers (1.3%), people working in local services (2.5%) and retirees (2.5%). The age range of the multipliers was 18–44 years [25]. ICT training courses were implemented in all 4 countries from mid-July to mid-October 2010.
The training courses for the multipliers were led by the teachers mainly in the academic domain, elderly homes (care homes), day and community centres and lasted three days. The maximum group size was 5–8 participants (future multipliers). The teachers prepared written materials for the multipliers and elderly people, so that the participants could make notes. The teachers additionally kept an attendance list and at the end of the training course, gave the participants a form for evaluation and for expressing opinions about the course.
On the first day, the participants were introduced to the course materials for multipliers and elderly people. The materials included the module "Searching the web", a presentation of the various search engines available, a presentation of simple computer games, information on how to adapt font size, a theoretical introduction to the learning process and some basic information on the characteristics of aging, social change and education of the elderly. Additionally, participants had the opportunity to discuss the materials with the teachers and worked individually on the materials (Figure 2). They also participated in the reflection cycle for possible improvements to the learning materials and, at the end of the course, were given an assignment which they would work on individually. On the second and third day, the multipliers worked at their own pace, browsed the project web page, learned about the Moodle environment, discussed the materials with other multipliers and teachers on the project forum, and exchanged emails with teachers if they had any issues or questions.

At the end of the ICT training courses, both groups (teachers and multipliers) were asked to participate in a survey for course evaluation and possible improvements of the course materials and/or organization, and to give any general remarks regarding the future implementation of ICT training courses.

2.1.3 Motivational workshops for elderly people

The PRIMER-ICT project aimed to increase computer engagement among elderly people. To this end, workshops for elderly people were organized to reach as many of them as possible, to inform them about the aims of the project and to allow them to learn about advanced technology, the benefits offered by technology and the possibilities for participating in ICT training courses. Motivational workshops for elderly people were organized in each country, with the additional purposes of demonstrating the ICT learning materials developed for elderly people and of motivating them to learn ICT skills. The workshops allowed the course materials to be tested for applicability and robustness against a set of given criteria, such as ease of use, support to the participant within each training course, pacing of the course materials and quality of the content developed [26]. One of the purposes was also to introduce the teachers and multipliers to elderly people and vice versa, so that they would feel comfortable working together and thus achieve better learning outcomes for the elderly. The teachers and multipliers were included mainly to positively affect the elderly people's willingness to learn ICT skills and to benefit from technology in their everyday life.

The workshops took place from June to September 2010 in Slovenia, Austria, the UK and Ireland and were held in locations that could prove useful for the recruitment of potential elderly participants, such as care homes, elderly homes and community centres. A total of 171 elderly people from Slovenia (22.2%), Austria (16.3%), Ireland (24.5%) and the UK (36.8%) participated in the workshops organized. The participants were aged between 56 and 90 years.

The structure and didactical method of the workshops were designed specifically for this group. The content was presented slowly (approx. 20 minutes) and the one-to-one tutoring approach was emphasized. The workshops also included videoconferences where the elderly could interact with peers from other places, establish new relationships, meet new friends and mainly discuss their life experiences.

At the end of the workshops, the elderly people were asked to participate in a survey for workshop evaluation and potential improvement, positive and negative feelings about the workshop, and their future motivation to participate in the ICT training courses.

3 Research Questions

In the present article the authors study the importance of positive experiences of teachers and multipliers from the ICT training courses on their future work with elderly people and of positive experiences of elderly people from the motivational workshops on their willingness to learn and motivation for future participation in ICT training courses. The authors defined the research questions in three categories:

Use of e-learning materials and learning support by teachers and multipliers:

1. How is the level of the facilitators'/teachers' support during the ICT training reflected in the understanding of e-learning materials?
2. How do the possibilities for discussion and interaction with facilitators/teachers during the ICT training courses affect the teachers'/multipliers' perception of the level of difficulty of using the e-learning materials?

Teachers' and multipliers' intergenerational understanding:

3. How do the possibilities for discussion and interaction with facilitators or teachers during the ICT training courses affect the understanding of intergenerational issues and elderly people's needs?
4. What kind of impact does the support provided during the ICT training course have on the preparation for future work with elderly people?
5. What kind of impact does the possibility for discussion and interaction during the ICT training course have on the preparation for future work with elderly people?

Motivation of elderly people to learn ICT skills:

6. What kind of impact does elderly people's participation in the workshop have on their future participation in ICT training courses?
7. What kind of impact does the possibility for discussion and interaction with teachers and multipliers during the workshop have on elderly people's interest in participating in ICT training courses?

4 Methods

Within the PRIMER-ICT project, the Austrian partner was responsible for the Quality Assurance and Evaluation of the project and developed a total of 8 questionnaires, which were approved by the Quality Assurance Group appointed by the participating institutions. In this article, the authors focus only on the evaluation of the ICT training courses for teachers and multipliers and the motivational workshops for the elderly.
Data collection and evaluation was carried out after the ICT training courses for teachers and multipliers and the motivational workshops for elderly people (Figure 2).

4.1 Teachers' and Multipliers' Experiences from the ICT Training

To assure the quality of the ICT training courses, participants were asked to complete a questionnaire at the end of each course. The questionnaire administered to teachers and multipliers for the evaluation of the ICT training courses included open-ended (n=7) and closed-ended (n=4) questions and a number of statements (n=14) evaluated on a Likert-type scale. The questions concerned demographic data, such as age, sex, current employment status and occupation, as well as information about the course implementation, the quality of the e-learning materials prepared, the ease of use of the e-learning material, the participants' positive and negative feelings about the course, suggestions and recommendations for improvement, evaluation of the course quality as preparation for future work with elderly people, the level of support during the course and the aspect of intergenerational understanding. Additionally, participants were asked if the aims of the ICT training were clearly and understandably presented before the start of the course, as well as about their general feelings regarding the learning materials and if the

discussion about content between facilitators and participants led to desired learning outcomes [27].

The same questionnaire was used for both teachers and multipliers. Both groups were informed that participation in the evaluation was voluntary and strictly for research purposes; additionally, they were informed that they would be able to opt out from the evaluation process at any time. Statistical analyses of the quantitative data from the closed-ended answers were carried out mainly to examine three major themes: a) use of the e-learning materials developed, b) the effectiveness of support, discussion and interaction during the course in terms of a better understanding of the material and c) the impact and efficacy of discussion, interaction and support during the course as a condition for preparation for further work with elderly people. The authors carried out descriptive analysis, frequencies, correlations and crosstabulation of quantitative data. Additionally, some qualitative data will be presented with an interpretation of the participants' free-form comments; the results are presented in the following sections.

4.2 Elderly People's Experiences from the Motivational Workshops

One of the dissemination and recruitment methods within the PRIMER-ICT project was organizing motivational workshops for elderly people in all participating countries. Workshops were mainly organized in care homes, elderly homes and community centres. As part of the workshops for elderly people, the project partners organized local videoconferences so that the participants could talk to friends in other elderly care facilities in the neighborhood. Another objective in organizing the workshops was to motivate the elderly to use advanced technology, and to show them what technology can offer and how they can benefit from it.

After each workshop, the elderly (n=171) were asked to participate in the workshop evaluation. They were informed that participation in the evaluation was voluntary and strictly for research purposes. They were also aware that they were able to opt out from the workshop evaluation at any time. A questionnaire, using a Likert-type scale, was used to assess the quality of the workshops and included open-ended (n=7) and closed-ended (n=3) questions and a number of statements (n=9) [27]. At the end of each workshop, the elderly were asked to evaluate the general workshop implementation and their positive and negative feelings about the workshop, and to provide suggestions and recommendations for possible improvements. The participants were also asked to provide demographic data, such as age, sex, current employment status and profession.

During the evaluation process, the project consortium provided help for the elderly by having the teachers and multipliers explain the questionnaire in detail and give additional information if needed. The authors analyzed the quantitative and qualitative data collected, using frequencies, crosstabulation, correlations, correspondence and content analysis. The descriptive and exploratory statistical analyses are presented on the international level.

5 Results

5.1 Results from Teachers' and Multipliers' Experiences

In this article, the authors focus on studying the usefulness and intelligibility of the e-learning materials, the support given to the participants during the ICT training courses,

the effectiveness of preparation for understanding the intergenerational aspects which the participants would need in further work with elderly people, and the level of motivation for intergenerational engagement. The results are presented in two separate sections: *Use of e-learning materials and learning support* and *Motivation for intergenerational engagement*.

A total of 69 participants were involved in the evaluation of the training courses (46% of the participants dropped out), 58 (84.1%) females and 11 (15.9%) males from Austria (16 participants), Slovenia (22 participants), Ireland (24 participants) and the UK (7 participants). The participants were aged between 18 and 59 years: the mean age was 32.22 years and the standard deviation was 12.974, which means that the majority of the participants were aged between 19 and 45 years. 49.3% of the participants were employed and 50.7% were still studying; in other words, the participants were mainly students. The participants who were employed worked mainly in the business sector (14.5%), the health-care sector (13%) or the education sector (11.6%), as volunteers (7.2%), and in the technology sector (2.9%). 14 participants from Austria, Ireland and the UK participated in evaluating the training courses for teachers and 55 participants from Austria, Ireland, Slovenia and the UK participated in evaluating the training courses for multipliers.

5.1.1 Use of e-learning materials and learning support

After the e-learning course, the participants were asked to rank the difficulty of use of the e-learning materials. Of the 69 participants included in the course evaluation, 73.9% reported that the materials were not difficult to use. Only 4% reported that they had trouble using the materials. As for the level of support given during the e-learning courses and the level of difficulty of using the e-learning materials, the authors found that 56 participants fully agreed that there was enough support during the course, and of those, 78.6% thought that the materials were not difficult to use. 21.4% of the participants thought that the use of materials was difficult, but still agreed that the support during the course was sufficient. 12.5% of the participants thought that support during the course was moderate, but nevertheless 75% of this group thought that the e-learning materials were not difficult to use. However, the authors did not find a significant connection between the support provided during the course and the perceived level of difficulty of using the e-learning materials. Additionally, the authors examined the linkage between the possibility for discussion and interaction during the course and the level of difficulty of using the e-learning materials. Of 65 participants, 84.6% fully agreed that the facilitators and teachers provided enough possibilities for discussion and interaction during the course, and of those, 81.8% thought that using the materials was not difficult. 18.2% of those who said that they were satisfied with the discussion during the course and interaction with other participants still thought that using the materials was difficult. Only one participant thought that s/he had not experienced enough interaction and discussion during the course, but this fact did not negatively affect the perceived level of difficulty of using the e-learning materials.

Figure 3 shows the effect of different variables associated with the level of support during the ICT training courses on the perceived ease of use of e-learning materials among teachers and multipliers.

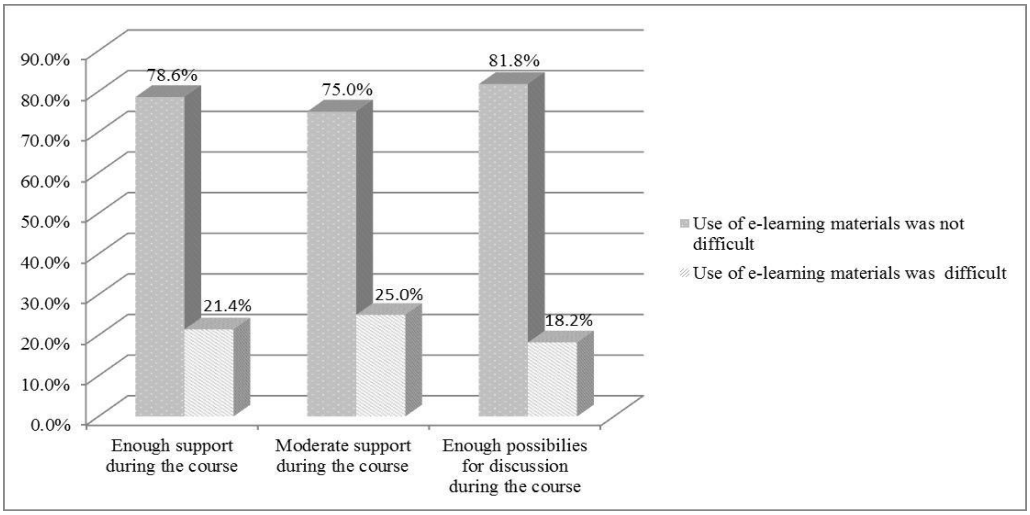

Figure 3: Variables affecting ease of use of e-learning materials

Basically, all participants enjoyed the training course (87.8% fully agreed and 12.1% agreed somewhat) and of those, 77.2% thought that the use of e-learning materials was not difficult. 22.7% of the participants enjoyed the course but still thought that the use of materials was difficult.

Overall, the findings associated with the first and second research questions imply that if ICT facilitators and teachers provided enough support and possibilities for discussions during the ICT training courses, the majority of both groups (teacher and multipliers) reported that the e-learning materials were not difficult to use and were even more understandable.

Qualitative analyses of the open-ended questions showed that the teachers and multipliers liked the didactical concept of the personalized teaching method, which provided more opportunities for discussion and support during the ICT training courses. A teacher from Austria said, *"I liked the didactical concept and support during the whole training"* and another one from Ireland pointed out, *"I think it was great that we had a chance to teach participants in small groups."* Regarding the e-learning and blended learning method, as well as support during the ICT training courses, the participants expressed a positive attitude; a multiplier from Austria said, *"I liked the personal contact with the teacher instead of only e-learning, and the possibility of refreshing my own IT knowledge."* Additionally, multipliers from Slovenia commended the *"good teacher's explanation of e-learning materials"* and *"relaxed cooperation between teachers and multipliers."* Even though the personalized method of teaching ICT skills was introduced as an innovative method, both groups liked this type of learning; a teacher from Ireland said, *"I liked learning through an e-learning course"* and *"I like the idea of this type of course."* Additionally, studying the e-learning materials in their own time and at their own pace at home was also a positive experience for teachers. One teacher from the UK said, *"It is great that I was able to work through the material for teachers in my own time and at home. I had enough directions from the facilitator to get started and to realise the aims of the training course."* The qualitative answers indicate the teachers' and multipliers' positive attitudes toward the personalized teaching method, which provides enough possibilities for a discussion of the e-learning materials on the one hand and sufficient space for learning at one's own pace on the other.

5.1.2 Motivation for intergenerational engagement

Because the teachers and multipliers were trained for future individual work with elderly people, it was very important to assist them towards a better understanding of the needs and abilities of elderly people. For this reason, the facilitators and teachers were given many opportunities for discussion and interaction during the course. Influencing the teachers and multipliers in order to increase their motivation to use ICT was also important from the perspective of the further transfer of motivation and enthusiasm for ICT use to the elderly people.
Table 1 presents 9 out of 14 statements evaluated by teachers and multipliers which are closely related to the topic studied.

Table 1: Teachers'/multipliers' (n=69) experiences from the ICT training course

	Fully agree (%)	Agree somewhat (%)	Disagree somewhat (%)	Fully disagree (%)	Missing data (%)
There were enough possibilities for discussion and interaction	84.1	13	1.4	0	1.4
The course was a good preparation for my future work with multipliers/elderly people	75.4	20.3	2.9	0	1.4
Before the course, I was well informed about its objectives and contents	65.2	24.6	7.2	2.9	0
The course was diversified	72.5	21.7	2.9	0	2.9
The course leader was well prepared	89.9	8.7	0	0	1.4
The use of the e-learning materials was difficult	5.8	15.9	39.1	34.8	4.3
The course offered a balanced combination of e-learning and face-to-face sessions	62.3	26.1	1.4	0	10.1
During the course there was enough support	85.5	11.6	0	0	2.9
The course helped me to be sensitized to intergenerational issues	69.6	27.5	1.4	0	1.4

The authors found a significant correlation between the number of possibilities for discussion and interaction provided during the course and the opinion that, from an overall perspective, the course helped the participants to be more sensitized to intergenerational issues and so understand the elderly people better ($p=0.01$). Of 68 participants, 67 (98.5%) stated that there was enough possibility for discussion and interaction during the course and of those, all except one stated that the course helped

them to be more sensitized to intergenerational issues. The authors also found a significant connection between sufficient support during the course and the opinion that the course was a good preparation for future work with multipliers and the elderly (p=0.00) and, additionally, a significant connection between sufficient possibilities for discussion and interaction during the course and the opinion that the course was a good preparation for future work with multipliers and the elderly (p=0.00).
Table 2 presents a summary of the variables studied where a statistically significant correlation value was found.

Table 2: Summary of variables associated with detected significant correlation value

Variable 1	Variable 2	Significant correlation value
The number of possibilities for discussion and interaction provided during the course	The course helped the participants to be more sensitized to intergenerational issues and so understand the elderly people better	p=0.01
Sufficient support during the course	The course was a good preparation for future work with multipliers and the elderly	p=0.00
Sufficient possibilities for discussion	Interaction during the course was a good preparation for future work with multipliers and the elderly	p=0.00

Almost all the participants thought that during the course there was enough support, and 97% of the participants stated that the training course formed a good basis and preparation for their future work with multipliers or elderly people.
One participant stated that there should be more support during the course and also that the course should focus more on the preparation for future work with multipliers and elderly people. 85.3% of the participants fully agreed that the facilitators and teachers provided enough possibilities for discussion and interaction, and of those, 84.5% also fully agreed that the course was a good preparation for future work with multipliers and the elderly. One participant expressed dissatisfaction with the discussion and interaction possibilities, yet still thought that the course formed a good basis for his/her future work with multipliers or elderly people.
Results connected to the third research question showed a correlation between the number of possibilities for discussion and interaction with facilitators or teachers during the ICT training courses and the degree of intergenerational understanding of the participants. This can be interpreted as meaning that sufficient discussion during the ICT training provides more opportunities to sensitization to intergenerational issues. As regards the fourth and fifth research questions, the authors found that sufficient support and sufficient possibilities for discussion during the ICT training courses for future teachers and multipliers affect the level of preparation for future work with elderly people. More support and possibilities to discuss issues encountered during the ICT training courses have the result that teachers and multipliers are better prepared for their future work with the elderly.

From the qualitative results of the open-ended questions it is clear that the multipliers are much more sensitive to intergenerational understanding compared to teachers. Moreover, from the multipliers' answers it was possible to detect a greater responsibility for the future work with the elderly; one multiplier from Austria said, *"I feel that I am well prepared for working with elderly people."* A multiplier from Ireland stated, *"I think it is great that we can help the elderly to communicate in a modern way which gives them a chance to search the web and find valuable information."* Many multipliers felt honoured to have a chance to work with the elderly; a multiplier from Ireland said, *"It is great to get a chance to teach ICT skills to elderly people"* and another from Slovenia said, *"The ICT course has given me additional knowledge on how to work with the elderly."* Another multiplier from Slovenia went even further: *"This course gave me a new learning angle and a different view on the elderly."* These answers show that the multipliers took their teaching role seriously and felt a great responsibility for achieving a successful adaptation of the elderly to ICT.

5.2 Results from the Motivational Workshop Experiences of the Elderly

The authors studied the effect of workshop participation on elderly people's further involvement in and motivation for learning ICT skills and for participating in ICT training courses. A total of 77 elderly people participated in evaluating the workshops (55% of the participants dropped out); of all the participants, 3 people were still working and 73 were retired; one participant did not answer this question. 28.6% of the participants were male and 71.4% were female, aged between 56 and 90 years. The mean age of the participants was 76.78 years (standard deviation was 8.148, which means that most workshop participants were aged between 68.6 and 84.9 years). 49.4% of the participants were from Ireland, 45.5% from Slovenia, 3.9% from Austria and 1.3% from the UK.

5.2.1 Motivation of elderly people for learning ICT skills

A greater number of the female participants (63.6%) than of the male participants (27.3%) enjoyed the motivational workshops. Although most participants were female, a greater number of male participants (90.9%) expressed interest in participating in future ICT training courses in comparison to females (76.4%) (Figure 4).

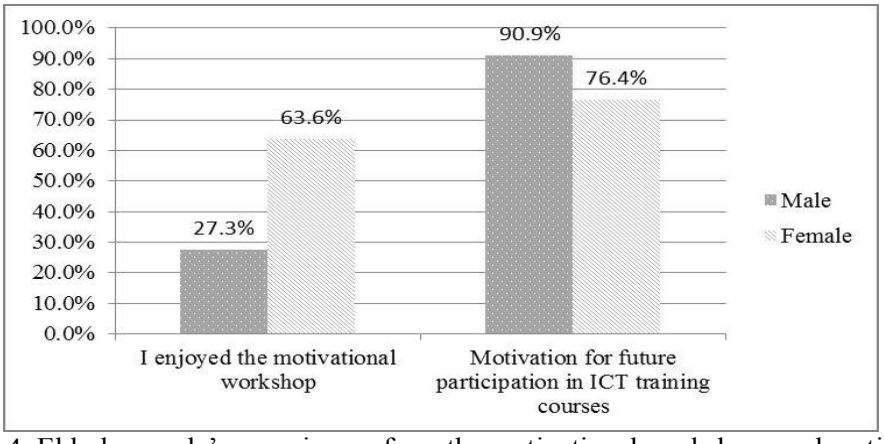

Figure 4: Elderly people's experiences from the motivational workshops and motivation for their future participation in ICT training courses according to gender

Table 3 shows the experiences of the elderly regarding workshop participation as expressed by 6 of 9 statements concerning the general opinion of the elderly about the workshop implementation.

Table 3: Workshop experiences (n=77) of the elderly

	Fully agree (%)	Agree somewhat (%)	Disagree somewhat (%)	Fully disagree (%)	Missing data (%)
I enjoyed the motivational workshop	90.0	9.1	0	0	0
There were enough possibilities for discussion and interaction	93.5	5.2	1.3	0	0
The motivational workshop increased my interest in participating in the ICT training course	80.5	18.2	1.3	0	0
I would recommend the motivational workshop to a friend	89.6	9.1	0	0	1.3
Before the motivational workshop, I was well informed about its objectives and contents	84.4	13.3	0	0	1.3
The motivational workshop was diversified	90.9	9.1	0	0	0

The authors found a significant correlation between knowing and understanding the aims of the project and an increased interest in future potential participation in the training courses (p=0.00). The project aims were clear to most participants (93.5%), and those participants were also highly interested in participating in future training courses for elderly people. Three participants stated that the aims were not so clear to them, but they were still more interested in participating in the ICT training courses.

The authors also found that 97.4% of the elderly who participated in the workshops were more interested in participating in the ICT training courses, regardless of whether they were employed or retired. Another significant correlation was that between the number of discussion and interaction possibilities during the workshops and the level of interest in participation in future ICT training courses (p=0.00). This means that if elderly people have the possibility to discuss and solve the problems encountered and to get appropriate information, and if they are satisfied with the knowledge they receive, they are also more interested in future lifelong learning. The authors did not find a significant correlation between enjoyment of and satisfaction with the workshop implementation and the participants' willingness to recommend the workshop to a friend (p=0.06). However, it is still evident that the higher the level of satisfaction with the workshop is, the greater is the possibility of recommending it to a friend.

Table 4 presents a summary of variables associated with the level of elderly people's interest in future participation in ICT training courses.

Table 4: Summary of variables associated with the level of elderly people's interest in future participation in ICT training courses

Variable 1	Variable 2	Significant correlation value
Knowing and understanding the aims of the project	Level of interest in future participation in ICT training courses	p=0.00
Number of discussion and interaction possibilities during the workshops	Level of interest in future participation in ICT training courses	p=0.00

Correspondence analysis is used to graphically present categorical data (cases and categories), so that objects within the same category are close together and objects in different categories are far apart, dividing the objects into homogeneous subgroups within categories. We performed a correspondence analysis on the variables "Project partner" and "The workshop increased my interest in participating in future ICT training courses". The joint variable plot is shown in Figure 5, which presents the connections between the elderly participants' country and their interest in future participation in ICT training courses. Participants from the UK and Ireland fully agreed that the workshop/videoconference stimulated them to participate in future ICT courses. On the other hand, elderly people from Slovenia were somewhat stimulated to participate in training courses, but evidently a little less than their peers in the UK and Ireland.
None of the participants associated workshop participation with decreased interest in future participation in ICT courses. We cannot associate the Austrian participants with any of the responses given, possibly because only 3 elderly people from Austria participated in the workshop.

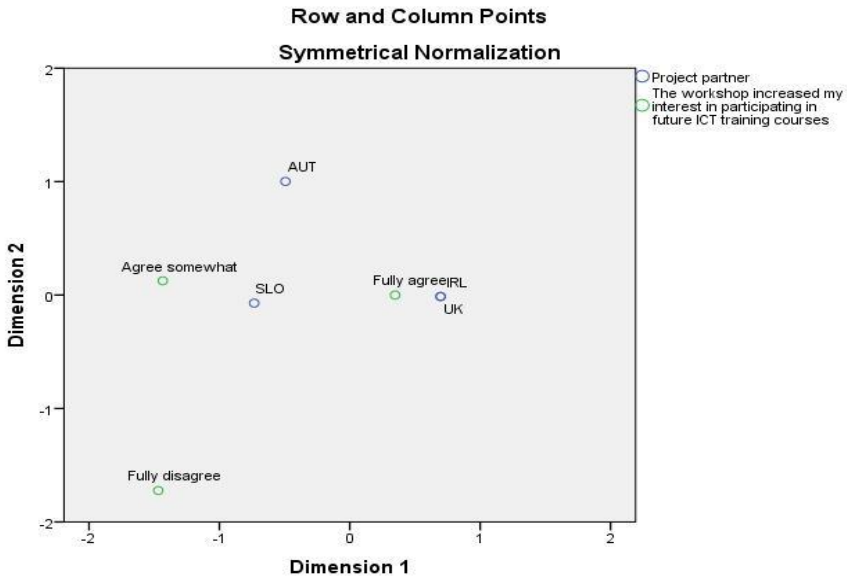

Figure 5: Connection between participants' country and interest in participation in future ICT courses

The results associated with the sixth and seventh research questions point to the importance of understanding the aims of the PRIMER-ICT project for elderly people's future participation in ICT training courses. Additionally, the authors noted the importance of discussion and interaction with teachers and multipliers during the motivational workshops; in other words, because the elderly were able to discuss ICT issues, their interest in using technology increased their willingness to learn and their motivation for future participation in ICT courses. Another interesting correlation was found between the level of enjoyment of and satisfaction with the motivational workshop implementation and the transfer of positive experiences to the participants' peers and friends, although this could not be proved statistically.

By analyzing the elderly people's answers to open-ended questions we found that in general, the elderly liked the possibilities for discussion during the workshops; one participant from Austria said, *"I liked the interaction between the participants, the information and exchange of experiences"*, another one from Austria felt that *"more participants would promote more discussions."*, which means that elderly people trust each other more and are able to affect each other's motivation for learning something new. Many elderly people also stated that the workshops showed them the possibility of learning something new; a participant from Ireland said, *"I like knowing what I could learn."* Many elderly people from Slovenia experienced interaction with computers for the first time; nevertheless, they appreciated the new way of socializing with other people. One said, *"I am afraid of computers, but I liked the new possibilities of communication"* and another was also motivated to get more friends to talk to via computer: *"I would like to talk with as many other elderly people as possible."*

From a summary of the qualitative answers we could conclude that motivational workshops have a positive influence on elderly people's motivation for future participation in ICT training courses.

6 Discussion

In this article, personalized methods of affecting elderly people's willingness to learn ICT skills are discussed. However, to be able to positively affect the willingness of elderly people, individuals who come into any kind of contact with the elderly, whether health care practitioners, family, friends, nursing or computer science students, have to be well trained and motivated to effectively transfer knowledge and enthusiasm regarding ICT use.

The authors of this article discuss the importance of positive encouragement for elderly people's general willingness to learn with a view to their successful adaptation to ICT.

Although the results concerning ICT training for teachers and multipliers and their further efforts to promote ICT among elderly people are promising as regards the elderly people's willingness to learn, there are four limitations in the present study which need to be acknowledged. The first limitation concerns the lack of prior research on the topic of appropriately qualified individuals (ICT facilitators) who work with elderly people in the process of their ICT adaptation, especially from the viewpoint of intergenerational understanding. The second limitation identified by the authors is access to the data collected, bearing in mind that each participating country collected its own data and sent it to the partner responsible for the Quality Assurance and Evaluation of the project, who prepared a joint database. Furthermore, non-English speaking partners had to translate the

questionnaires to their native languages, and after the data collection procedure again translate the results into English. Due to this fact, some information could be lost in translation. Finally, the authors have identified the limitation caused by the small sample size of all three groups involved in the research: the total number of participants involved in the evaluation of the ICT training courses for teachers and multipliers was 69 and represents 54% of all participants. Additionally, a total of 77 elderly people participated in the workshop evaluation, which is 45% of all elderly participants.

When considering different approaches for teaching elderly people to use computers and the Internet, previous studies focus mainly on the preparation of teaching materials or the adaptation of equipment and less on didactic methods [12]. Therefore, in the ICT training courses for teacher and multipliers and the motivational workshops for elderly people within this project, the focus was mainly on presenting the didactic personalized teaching method developed, pointing out its most important aspects, such as an individualized and flexible teaching/learning method based on the needs and wants of the participants, which positively affected their motivation to interact with ICT.

The present study showed that individuals who work in a teaching/learning process with elderly people need to clearly understand the ICT learning materials and the aims of the training course, and that the learning materials have to be intelligibly written for the teachers and multipliers to be able to transfer the enthusiasm and motivation to learn ICT skills to the elderly. In addition, it is very important that during the training of teachers and multipliers there are enough possibilities to discuss and interact with training facilitators so as to prepare both groups for the future work whether with multipliers or the elderly in the best way possible. It is essential for both groups to understand intergenerational issues and become sensitized towards the needs of elderly people.

Many studies indicate that when it comes to ICT use, elderly people experience a lack of interest, motivation and willingness to learn how to use and benefit from advanced technology [6]. The PRIMER-ICT project was designed to create ICT learning opportunities for elderly people, so that they could get acquainted with advanced technology with maximal tutoring support from groups of teachers and multipliers. However, for the elderly to be able to benefit from advanced technology, they have to be prepared and willing to learn to use new technology. Therefore, in order to motivate the elderly to participate in ICT training courses, the teachers and multipliers interacted with the elderly during the workshops to find out about their fears, resentments and possible reasons for using ICT. The elderly stated that they were mainly motivated and willing to learn to use ICT in order to stay in contact with their families and friends. For most teachers (except ICT experts), multipliers and elderly people, participation in this ICT training courses was their first experience of anything of this kind.

The authors are well aware that all three groups were motivated because of being part of a project; therefore, the positive findings concerning the enthusiasm of elderly people for future computer engagement should not be over-generalized. Nevertheless, this gives us the important message that elderly people can be motivated to learn ICT if they are part of something bigger, such as projects, special events, promotional activities, etc. Therefore, the results are quite encouraging.

7 Recommendations

In this article, the authors studied separately the nature of the teachers' and multipliers' experiences from the *ICT training courses* and how their experiences from and attitudes toward ICT were later reflected in the elderly people's willingness to learn ICT skills. Additionally, the authors studied the effect of elderly people's participation in the *motivational workshops* on their future interest in participating in ICT training courses.
On the basis of the results of this study, several recommendations on how to encourage the elderly to use ICT were formulated.

- The involvement of teachers and multipliers in the motivational workshops and ICT training activities for the elderly is essential. Both groups need to be thoroughly prepared using ICT learning materials and need to have enough possibilities to discuss and interact with facilitators/teachers during the ICT training to be able to understand the intergenerational issues related to elderly people.
- Promoting the use of ICT to the elderly should be organized in small groups with enough teachers and multipliers.
- Organizing motivational workshops for the elderly is a very useful method to acquaint them with advanced technology. However, what makes the workshops of essential importance is that they enable a clear presentation of the aims, purpose and objectives of the course beforehand, so that the elderly can link their expectations with a future desire to learn.
- In the workshops, teachers and multipliers should combine advanced technology with fun by playing online games and providing opportunities to interact and communicate with family and friends (videoconference) and in this way, present the benefits of ICT to the elderly.

When the elderly recognize what ICT can offer, they will be more willing to learn and able to benefit from it in their everyday lives. Future research needs to focus more on different professionals and volunteers who work with the elderly, because their influence and encouragement and attitude toward ICT are of essential importance in motivating the elderly to participate in ICT training.

ACKNOWLEDGEMENTS: Financial support for the PRIMER-ICT project was provided by the European Commission under Agreement number 2008-4279/001-001, project number 143665-LLP-1-2008-1-SI-KA3-KA3MP. The first author would like to thank the main project coordinator, Prof. Dr. Peter Kokol (University of Maribor, Faculty of Health Sciences) for his support and discussion during the drafting of this article, and the participating country leaders Dr. Khim Horton (University of Surrey, Faculty of Health and Medical Sciences), Dr. Rita Collins (University College Dublin, School of Nursing, Midwifery & Health Systems) and Dr. Melanie Deutmeyer (Carinthia University of Applied Sciences) for their contribution to the project and their permission to publish the data collected during the project. Additionally, the contribution of the facilitators, teachers, multipliers and elderly participants to the evaluation process is much appreciated.

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