TRANSNATIONAL GUIDEBOOK OF TESTED METHODOLOGIES AND APPROACHES IN ICT TRAINING

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iAge - e-inclusion in ageing Europe

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INTERREG IV B North Sea Programme 2007 - 2013

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1. Introduction

Problems faced in our project:

The rapid changes in the area of Information and Communication Technologies (ICT) require employees and older citizens that easily re-qualify themselves and improve their skills through training. Employees can effectively use modern technologies, like e-learning to get trained. But the ICT training process becomes more complicated, when we focus on older people. Also, older employees (over 40 years of age) have different training needs, skills and capabilities compared to younger employees. This paper is a continuation of our shared experience of training the elderly in the iAge Project. The proposed framework is a summary of the practical arena with older people and employees from different countries participating in this project.

2. Main barriers, problems and constraints when elderly people use ICT

The elderly age group is not a homogeneous one in what concerns education, income or even the different types of disabilities often associated with age. The elderly people as a group are at the greatest risk of being excluded from the benefits of the Information Society.

Most of the elderly people in our project have not directly been involved in the evolving Internet or Information and Communication age, as they have not extensively used computers or the Internet through their educational, working and/or personal lifes. The elderly have had to acquire ICT competencies in disadvantageous conditions, e.g., they have to learn to coexist with technologies that slowly displaced manual activities in restaurants, shops, hospitals, government offices... This lack of experience clearly acts as an enormous barrier to promote learning about computers. In addition to those constraints most of the elderly people do not have their own computers, because they cannot afford them and/or they do not think of any benefit that a computer may bring to their daily live. Some of those, who do have their own are not able to use it to their full potential.

Elderly people may encounter specific barriers to learn about ICT, Internet and computers because of age-related sensory, physical and cognitive changes. In most cases ageing is associated with a reduction in visual acuity, contrast discrimination

and the precision of eye-movement control. More problems are visual impairments, which make it more difficult to distinguish text and buttons in industry standard software.

Some of our target groups are also more likely to have some fine motor control impairment so that it complicates much more the use of standard software with cluttered screens overcrowded with small targets. That leads to time consuming and frustrating progress of using the mouse. It is therefore advisable to use touchscreens instead so that the lack of experience, or motor control difficulties, do not interfere with the useful experience or the benefits for the learner right from the start of the learning process. Sometimes the problem in relation to elderly is mainly one of compatibility. It must be ensured that the elderly and their interfaces understand one another. This means that either the people who develop interfaces have to remain oriented in part to elderly people, test the devices on them, let them help with the designs, let them suggest the designers, and so on, or elderly people have to learn to communicate differently. Our main goal here was, that mainly all focus groups started their first experience with a touchpad in that case the learning focus on what is on the screen was more focused than technical issues.

The Lack of ICT knowledge in the different target groups within the Project are related to different reasons and different heterogenic test groups:

a) Affordability: the different experiences in the project showed that most of the differences in mobile penetration rates can be attributed to differences in average personal income. It is simply too expensive to buy a mobile device or computer for themselves when the usage and advantages are not known by the target groups. It is necessary to have in mind, that not only the technology is accessible, but also the creation of products and services ensure the possibility to afford them.

b) Availability: Due to geographical restrictions, access to technology, especially internet access represents a serious problem. The introduction of broadband or next generation networks into rural areas or regions are needed in some of our partner regions especially in the Netherlands.

c) Relevance and impact: There is a kind of feeling that many of the IT courses and trainings available today are not well suited for older people and pensioners. In our Project phase we developed good partnership between both the community organisations and consumer groups targeting the elderly to produce training programmes that are more relevant to the older citizens, both in terms of content and the learning process.

d) Accessibility: Despite the efforts already done by the community to equip the older members of our society with the skills needed to use technology, we must keep in mind that they mostly use a rarity of existing mainstream products. Severe vision, hearing or dexterity problems frustrate many older peoples' efforts to be included in the information society. Therefore it is important to focus on the basics and to teach only one simple way to reach a goal.

e) ICT and Healthy Ageing: In our project there is a big focus on the fact that health, social integration and wellbeing are some of the primary concerns shared by the elderly citizens. The possibility to use Technologies/ICT to connect the elderly people with their families, bridging distances, sharing information and receiving assistance from healthcare and social providers on a sustained and proactive way is a key component to increase their quality of life. At the same time technologies/ ICT enable healthcare allowing (?), the remote care of elderly persons from their own homes. Focussing on those individual benefits for the targetgroups is a keyfactor for the motivation to learn.

3. ICT & Elderly People: What should be done on the larger scale

There is a general consensus that ICT can help elderly people to improve their quality of live, promoting them to stay healthier, live independently for longer and if possible counteract reducing capabilities which are more prevalent with age that allow them to remain active at work and/or in their community. Today ICT offers several solutions for elderly people to maintain their independency and autonomy in order to enhance their mobility and quality of life.Therefore it is necessary to improve their access to age-friendly ICT and personalized integrated social and health care services. Active ageing means for elderly people to continue their active lifestyle and participation in social life and work. To give an example, domotics may promote independent living and online relationships may compensate for the lack of real-life contacts. The projects main goal is to convey the benefits of the ICT to the elderly.

It is necessary to understand, that every human being is a part of many different socio-technical networks. To be included in a socio-technical network it requires a process of socialization and integration of the technology/ICT in the daily life. Thereby the construction of the network reveals itself. It was not necessary to understand how the software works but simply show how to use it the right way to benefit from it and also to trust in the support of ICT. This way people domesticate the technology/ICT and turn it through processes of appropriation, objectification, incorporation and conversion into a part of their everyday life. One important

conclusion is that technology/ICT does not have one single meaning for elderly people. Their interpretation of technology/ICT as a tool may differ from the original purpose.

Access by itself is not enough, it needs to be combined with knowledge about the positive effects. Social organizations and policy institutes warn that simple access is not necessarily effective in producing change. Relevance, accessibility, usability, affordability and availability of resources and appropriate training and ongoing support for ICT learning are very significant. Cognitive slowing is a factor which has implications for elderly learners, trainers, course developers and training providers. Adaptive technology solutions are already available and should form part of train-the-ICT-trainer instruction. Elderly people may take a little more time to learn new skills, carry out ICT procedures and to process information and associate it with what is already known. However if the elderly are motivated, adequately supported with activities, the learning takes place anyway. It is not needed to cover the whole ICT application, but to teach more about the practical use, the cognitive exercise value, or purely for fun.

The process of ageing and elderly people should be seen in a transition in their «socio-biological clock». Without a careful preparation such transition may promote anxiety and overstraining. Knowldedge preserves the elderly from such frustration and prepares for the change.This attitude may enable elderly people to adjust their expectations as well as to ensure that elderly are not left behind!

4. Motivation for learning ICT

Adoption and use of technology among the elderly is influenced by many factors. There needs to be a real, perceived benefit for the use relative to the needs and interests of elderly people; a centrality of sociability maintain social networks and communication with family and friends.

To sum up the output of all project teaching and learning experiences many of the elderly say that most important learning needs were related to transportation, health and safety issues and had least to do with technology. Biggest barriers found, were related to physical conditions (reduced mobility, degenerating sight and hearing) and cognition (memory deficit, learning difficulties, concentration). Not all elderly people in our project did identify social learning needs as particularly important, neither support from friends and family.

The needs, contexts and background of the elderly vary and are heterogeneous. This changes when the benefits of the computers and Internet are well recognised by the elderly. Additionally, more than half of our focus groups who were not Internet users stated that nothing would encourage them to use it in the future, either. Barriers encountered include feelings of being too old, and lack of interest or access to Internet. In old age education, the creation of a positive first encounter is also important, to cultivate attitudes which means that the devices and programs should be thoroughly tested.

What motivates elderly can be deduced from activities the elderly people mostly engage in. These include Internet: information search about hobbies and local issues, e-mail, entertainment, internet transactions. Keeping up with computerized technology and development of the society, was found to be among the main motivators to learn ICT skills among elderly. Other motivations for learning is communication with friends and relatives. For example, good results were achieved for evolving motivation among elderly learners in Hong Kong, by using a participatory mode of learning and consistent support from different stakeholders. Thus, the motivation is both instrinsic and facilitated by learning conditions, first of all by other people (extrinsic, learners, facilitators, family & friends).

5. Teaching for the Elderly

Experimental psychology is a good source of information, applicable to old age education. To uncover the needs and interests of elderly people, teaching is required. Age-related changes in cognitive abilities are the result of cognitive slowing, limited processing recourses and failure to inhibit task-irrelevant information; also sensory deficits seems to accompany cognitive decline. Similar cognitive aging factors to be taken into account in system design for the elderly; these can as well, be applied to old age education. Guidelines for teaching: The key issue is to accommodate requirements of the elderly learners: to support their working memory by offering cues, reminders and navigational aids in systems and materials, to benefit from the accumulated experience and previous knowledge of elderly learners (use of analogy and real-life references), and to allow enough time and environmental support. In addition, structure of tasks, customizing interfaces and toolbars, and paying attention to the working environment and equipment (peace, large enough monitors, font-size, use of buttons), are advisable.

The need for continuing education for elderly is apparent. Where courses can give an initial boost for computer skills, groups of interest can help to continue the learning of elderly people to maintain and enhance the skills learned.

Faced challenges	**Teaching advices**
Cognitive slowing	Allow sufficient time, room for questions, adjustment of control panel settings, minimize the amount of reading
Limited prosessing resources	Environment support: favour GUIs and toolbars, make online help known, break-up the instruction into small units and make goals explicit, provide enough instructors and hand-outs for reference, use of pictures in material, favour recognition rather than recall
Lack of inhibition	One task at time, eliminate noise and other environmental distractions, make learning objectives clear, as well as the status of learning/current state
Sensory deficits	Customize toolbars (larger buttons and font-size), use large monitors and position them correctly; use high contrast between background and text