

Ageing Societies, Learning and ICT¹

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Summary

As the share of older people increases, there is a need to improve their well-being and possibilities for integration in the knowledge society. In ageing societies, learning plays a key role in addressing challenges such as increasing social and health costs, re-skilling for employment and participation, and intergenerational sharing of experience and knowledge. It is important to recognize older people as a heterogeneous group, in terms of self-confidence for learning, learning skills and interests, health and social connections, among others.

In general, older people's learning motivation is related to improving their everyday lives, to keeping themselves active, to sharing their knowledge with others and to connecting with other learners. ICT can help in providing new and flexible learning opportunities, which connect older people with each other and with younger generations. For older people, learning usually takes place in informal settings rather than in formal education and it is driven by their own interests and needs rather than by formal requirements.

It is important to carefully develop both the content and conditions of the learning opportunities for older people. There is evidence that older people want to learn, but meaningful and real opportunities for this desired learning are scarce at the moment. More attention needs to be paid to developing relevant and accessible learning opportunities and more user-friendly tools adapted to older people. Supporting learner-centred opportunities and personal learning skills is becoming part of lifelong learning for everybody in the knowledge society, where older people make up one group of learners and mentors, interacting and integrating with others.

The whole role of learning is changing, together with the availability of a new wave of promising ICT applications and research is needed to determine how learning can best be supported and provided in an ageing society.

Keywords: ageing society, ICT enabled learning, lifelong learning, intergenerational learning, eInclusion, older population

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1. Introduction

Most countries in the world currently experience an important demographic change due to an increasing older population; a trend which will be even more dramatic in the next decades. This will also have an impact on the learning activities in these societies, influencing, for instance, what needs to be learned, how this will be learned and who will be learning or teaching it. Learning plays a key role in ageing societies as it can help to address many challenges such as increasing social and health expenditures; older people's participation in employment; re-skilling and up-skilling in the knowledge-based society; and inter-generational sharing of experiences and knowledge. The increased life expectancy and improved health of older people can be seen as new assets that society should learn to benefit from. In Europe, where a growing part of the population - according to forecasts already 22% in 2010, and 34,5% in 2050 (UN, 2007) - will be 60 or older, it is important for older people to learn and for others to learn from them.

A major problem related to the participation of older people in learning activities is that learning is traditionally often designed for younger people's learning needs. As our societies become older, a shift needs to be made towards older audiences in order to integrate them with younger generations. Today, educational solutions rarely address the interests and specific needs of older people. Neither do other institutions and environments, such as pension systems and workplace settings provide opportunities for older people to flexibly participate and share their tacit and explicit knowledge with younger generations. The practices of those institutions that should improve learning opportunities both for and by older people should therefore also be looked at and improved where desirable.

It is important to consider learning in the broad sense and not only look at traditional education and training (Punie et al, 2006). Learning can take place in organised formal and non-formal education as well as through informal learning on one's own and in interaction with other people (European Commission, 2001). Moreover, it seems that informal and non-formal learning are reaching wider audiences than formal education. In 2005, 4.5% of the European adult population participated in formal education compared to 16.5% and 32.5% participation rates in non-formal and informal learning activities, respectively (Eurostat, 2007). In reality, the percentage of informal learning might even be higher, as people are not always aware that they are learning. For all age groups, and especially for older people, informal learning is an important part of life that needs to be considered when aiming for supporting learning, even though it may be difficult to arrange and even though its results cannot always be measured.

In this article we explore the triangle of ageing society, learning and Information and Communication Technologies (ICT).³ We will look at the changing nature of learning as our societies are ageing and transforming into a knowledge-based information society. We will further also look at the learning needs of older people and will discuss the possible contribution of ICT to learning in an ageing society. We will also point to a number of issues that research and learning stakeholders should address.

2. Learning needs of older people

In order to support equal access to learning for people of all ages, it is important to pay attention to the quality and relevance of learning opportunities. Cognitive abilities, such as working memory, reasoning, and speed of processing information decline with age, and can make it more difficult for older people to learn new things. On the other hand, older people's knowledge about themselves and their long experience in the work place as well as in other areas of interest are valuable assets which also help to be more determined to learn. Hence, learning skills do not disappear when getting older, but the learning may take more time and more focused approaches.

³ This article is based on desk research and on the results of an expert workshop organised by the European Commission DG JRC Institute for Prospective Technological Studies, in Seville, 26-27 February 2007.

In addition, it is important to note that ageing people should not be considered as a homogeneous group. There are different phases requiring different learning, such as age close to formal retirement; autonomous age as pensioner; age with increasing handicaps; and dependent pensioners' age (Binstock et al, 2006). The needs and motivation for learning are affected by health, background, social network, activities, and other personal aspects of the individuals as well as by the surrounding environment and society.

Older people can usually freely decide to participate in learning activities, which means that enhancing participation and learning requires paying special attention to motivational aspects. The motivation for learning can be intrinsic, external or a combination of both. The intrinsic motivation can come from, amongst others, general interest, the perceived value added by learning or from specific personal needs. Motivation can further be shaped by external factors like changes in the environment which require the person to adapt to new situations and raise the person's interest to learn to understand new things or to pursue new goals (e.g. widowhood, global warming, entrepreneurship, grandchildren).

Older people themselves consider issues related to coping with everyday life as important learning needs, e.g. tasks such as organising transport, taking care of one's health, or managing money (Boulton-Lewis et al, 2006). Changes in one's person also create new learning needs, e.g. how to use aids to compensate for disabilities, how to take care of one's safety or how to learn to mentally adapt to getting older and dealing with people. In addition to learning things of practical importance, people also want to learn out of intellectual interest, about, for example, politics and cultural issues. Especially in the early old age, people are interested generally in learning "new things," like languages, and staying up-to-date with society and its technology. As ICT have been developed only recently, the current older generation does not have very high ICT skills. ICT is a topic of learning as well as a means for learning. However, especially among the oldest respondents, technology is not often considered as an important learning need as such. (Boulton-Lewis et al. 2006)

Personal objectives for participating in learning activities can also emphasise something other than gaining new knowledge and skills. Learning can be seen as a way to keep one's mind active and to come in contact with other people. Some older people want to participate in learning activities as a way to give back and share the knowledge and experience gained during their life (Boulton-Lewis et al, 2006). It is important to notice this aspect of learning communities, as it connects all people and gives the older people a chance to tell their stories so other learners can learn from them.

One of the challenges is, however, that older people may not want to begin specific learning activities, especially not after retiring from working life. This does not mean, however, that they do not have learning needs or that they are not learning. They may lack the motivation or they may feel unsure in their abilities for specific learning activities. However, they may be learning without being aware of it, when participating in communities, for instance, or when carrying out voluntary work or by remaining active entrepreneurs. Different types of learning opportunities should therefore be provided to support different types of learners.

In addition, it is important to educate older people about the usefulness and existence of tools, services and learning opportunities that could improve their independence and quality of life. Tools that alert in case of a health emergency, for instance, may be unfamiliar to most older people but could be useful for them to learn, as they can help warrant their safety and health. Specific training activities can help to reduce the slowing down of cognitive processes and to improve how older people deal with their everyday activities (Willis et al, 2006). Developing new learning opportunities and activities as well as providing information about them is therefore important, as they may motivate older people to participate in a new type of learning that is beneficial both for them and for society.

Older people themselves perceive issues related to health, transport and prior learning as major learning barriers (Boulton-Lewis et al, 2006). Especially the oldest (74+) respondents

considered these as obstacles. Older people may experience problems with hearing and sight, or may need physical assistance for going to the place of learning (Purdie and Boulton-Lewis, 2003). Another barrier identified by the respondents was the financial aspect of learning. Surveys and statistics show that younger (50-64 years) respondents are more active learners than older (74+ years) ones and women participate in learning activities more than men (Boulton-Lewis et al 2006, Eurostat 2007). Previous educational background is a strong indicator of one's self-confidence for learning new things. In Europe, the level of adult people's participation in learning activities ranges from those who have low level of education 23.1% to people with high level of education 68.7% (Eurostat, 2007). This emphasises the importance of education in promoting skills and confidence for learning later in life and confirms that special attention needs to go to developing learning opportunities for all.

3. Learning with ICT in old age

ICT can improve the efficiency of organising and providing learning opportunities; support the use of different learning methods; as well as provide new models for participation and interaction for the members of the formal or informal learning communities. ICT also provide opportunities for new types of collaboration between learning developers by sharing resources, information and experiences to support the development and take up of successful practices.

However, ICT tools and applications are new for many older people as learners as well as for the teachers who should be developing the learning opportunities for them. Attention should therefore be paid to develop tools and applications that provide learning opportunities that are easy to take up for everyone and benefit older people in the best possible ways.

One of the opportunities provided by ICT is improved access to learning for people with limited personal mobility or with difficulties in organising transportation from e.g. rural areas. ICT also provide new means to be social by supporting social communication and communities with or without specific learning related goals, as illustrated by the strong emergence of the so-called Web 2.0 or social computing applications. Although these applications are currently mainly used by the younger populations, they also have a strong potential for older people to act both as learners and teachers in the areas of their interest, and to form networks with other people with similar interests⁴. However, older people need a lot of training and support to take up these kinds of new tools and forms of communicating and socialising.

Considering the specific needs of many older people, ICT can help in compensating disabilities in hearing, seeing, or motor skills, and in this way improve older people's access to information and learning. ICT can also be used to create flexible learning approaches, accommodating the individual needs of the learner and thus personalising learning (OECD 2006). Self-study materials, specific learning applications, and informal learning communities can be beneficial for learners who want to study at their own pace and in their own time. Because older people often need more time to reflect and to process information when learning new things, an example of a good approach is that of blended learning models, which allow time and provide supporting materials, discussion environments etc outside guided sessions and can thus flexibly accommodate different types of learner needs in adopting new knowledge.

Encouraging older people to take up ICT requires informing them about the benefits that ICT can have for them, e.g. in terms of relevant services, information, or communication connections. In 2006, only 18% of European 65-74 year-old people had used a computer and only 13% had used the Internet within the past year. In addition, the gender gap increases with age, so that noticeably fewer women than men in older age groups use computers and the Internet. Moreover, the majority (90%) of those 65-74 year-old people who use computers use them at home (Eurostat, 2007). It is important to enhance learning opportunities and computer access in local centres, to encourage and support also those people who do not have the possibility or lack the motivation to buy their own equipment.

⁴ See, for example, Learning Network for Active Aging, <http://www.epa.gov/aging/bhc/lnaa>

Access to computers is not the only condition necessary to start using them as tools for learning. The proportion of ICT users that rate their skills medium or low is larger in the older age groups, and generally women consider themselves less skilled than men (Eurostat, 2007). Although the skills gap will change as current younger generations become older and are more ICT knowledgeable, this problem is serious and needs to be addressed now for the present generation of older people to facilitate their participation in learning and in society. Initiatives to organise and provide ICT literacy courses for older people do already exist but may not be sufficient. It is important to note that when aiming to promote ICT for learning purposes and participation, the contents of the courses needs to take into account both the learning needs for the general use of ICT as well as for any specific software applications or resources that people are encouraged to use. However, according to Eurostat surveys, European adults obtain their skills most often outside of organised education, mostly through self-study or informal assistance (Eurostat, 2007). This reflects the importance of social networks in learning ICT related skills, especially when taking into account that acquiring and maintaining ICT skills are not one-off activities. They require continuous experimentation and learning-by-doing, which have more chances of being maintained when supported by social networks (Murdock et al, 1992).

In addition to using computers, the terminology or working models used in a course may already form a barrier for older people to even start learning. They need considerable support in the beginning and the effort required for learning to use new tools and applications needs to be compensated by the quality of the learning experience. Sometimes using extensively ICT based working and communication in courses may also contradict the learner's original intention of starting to learn to get in contact with other people. This means that when designing learning approaches for older people, one should always pay attention to the personal communication perspective, e.g. by organising possibilities for face-to-face meetings for learners and tutors (including peer learners). These kinds of meetings can support learning goals with different forms of informal communication and networking between people, important for all participants, both old and young.

4. Research and development needs

Today, ICT already play an important role in developing learning opportunities, but user interfaces are rarely designed to be used by older people. As a result, older people experience many problems when using technology (Comyn et al, 2006). ICT tools may be very complicated, in a foreign language or simply have buttons and text that are too small to be used by a person with restricted eyesight and difficulties in using their hands with precision. If a lot of concentration is required just for using the tools, or they make the user feel frustrated and conscious of his/her handicaps, the tools do not create a positive and motivating environment for learning. An effort should be made in the development phase to ensure e-accessibility by providing bigger fonts, bigger keyboards, large screens, and interfaces adapted to slower reaction times. Such features need to be adjustable to user preferences while at the same time basically remaining the same tool for everyone. "Design for All"⁵, aiming at basic simplicity of tools together with possibilities to plug in specific application interfaces, could be very beneficial to support people with different personal needs to participate and work equally with ICT in learning communities. It is also easier to start new activities with a tool that looks familiar than learning to use a completely new tool, e.g. learning opportunities provided through digital television could be more easily taken up by older people than those for which a computer is needed.

"Design for All" approaches emphasise user research as important input for tool and service development, involving users either in product testing or already during the development process. Such approaches would also benefit the development of learning opportunities for older people. When both tools and learning models are based on practical needs in supporting learning and can be promoted with concrete educational usage models, they can be more easily taken up by teachers and learners. Studying the learning needs of older people in

⁵ See, for example, European Design for All e-Accessibility Network, <http://www.edean.org/>

general and especially in a local context could provide important information for developing better learning opportunities for them. In addition, involving older people not just as users but also as advisers during the planning of the learning approaches can bring important new insights to the process as well as motivate people to participate in these learning opportunities once development is completed. This is another way to concretely demonstrate older people's importance and use their knowledge for developing learning activities to improve their own lives as well as those of others, instead of considering them only as passive participants for standard courses.

There is a fine line between dedicated approaches and stigmatisation if old people are put in groups of their own. Forming communities of people with similar backgrounds, e.g. targeted mainly on older people, may help to assimilate and share experiences with peer learners. However, different types of participants can be an added value for the learning community; providing new elements for all participants to the learning process. This is a great challenge for the development of learning approaches in which, for instance, both young and old people, pursuing different goals and bringing different experiences, could find it rewarding to work and learn together. This requires incorporating different interest areas for knowledge application as well as different paces and skills for learning on a much broader scale than before. Using the opportunities provided by ICT to support flexible learning models and communities will be a challenge needing continuous research and development in the future.

As problems with ICT skills, access, or discomfort with the use of ICT tools and applications can form considerable obstacles for older people's engagement with technologies, new learning opportunities need to be developed based also on other platforms than a computer at home. Digital television, for instance, is often mentioned as the platform that older people are more familiar with and that thus holds potential for developing new learning applications for them.

It should also be noted that distance learning does not always need to mean working alone on the computer. Learning approaches could be designed outside the home environment, so that they involve small groups of people interacting face-to-face with each other and then via computers with other groups. These small groups would gather and learn with each other at public internet access points (PIAPs), community learning centres or, if there is access to a computer or digital television, even at someone's house. Increasing the number of local meeting places and learning centres with ICT facilities and support personnel could concretely support access to ICT and thus learning to use ICT with peers. In these places, ICT can provide opportunities for learning and at the same time promote social connections and interaction between people both over distances and in the neighbourhood. Especially for people who do not feel comfortable with their skills to use ICT or to start learning new things, this could provide important initial social support for learning which, at a later stage, might be continued via ICT enabled communications.

As the whole role of learning is changing in ageing societies, it is necessary to better understand what the objectives of learning will be in the future; what learning outcomes need to be achieved; and how the necessary new learning opportunities can be developed. The future plans following from this understanding should take into account support mechanisms and educational opportunities for retired people, re-skilling of older workers etc. but at the same time also consider the role and position of young people in formal education, when for instance universities will be redefining their roles to accommodate older people.

It is necessary to support and develop models in which people are encouraged to actively keep learning throughout their lives. Formal education should equip learners with the necessary skills and knowledge to keep on learning independently, and active learning periods during working life should keep workers in touch with learning and learning tools, thus promoting innovation and competitiveness in companies as well as people's skills for learning in later life. Developing models that take into account new successful ICT applications, e.g. integrating informal learning with social learning applications with organised and recognised learning, would improve the meaningfulness and connections of learning to different aspects of life.

5. Conclusions

Ageing societies face several challenges, which lifelong learning and ICT supported learning opportunities can help to overcome and provide solutions for. However, it is important to recognise that at the same time the role and objectives of learning are changing as well. Learning is a way for older people to stay active, to participate in society and to share the knowledge and experience gained in their lives. Learning can enrich the quality of life of older people as well as of the people interacting with them and learning from them.

It is important to carefully develop both the content and conditions of the learning opportunities for older people. There is evidence that older people want to learn, but meaningful and real opportunities for this desired learning are scarce at the moment. Learning needs often relate to acquiring information about issues relevant for one's daily life, environment or intellectual interests. Older people's barriers for learning are related to learning skills, access, and motivation as well as to the suitability of the learning approaches. Personal issues like health and prior knowledge can both form barriers and influence which type of learning appeals most to them and feels most accessible.

ICT can support learning in many ways, allowing more individual learning approaches; compensating for disabilities; and providing new opportunities to access information and services as well as to interact with other people and communities. However, it may also bring new obstacles. ICT are new for many older people today and the threshold for taking up new tools and applications to begin new learning activities may be high. Attention should be paid to improve the usability of tools; access to the equipment; and to the types of learning opportunities provided. As the background and motivation of older people may differ from those of other older people, as well as from younger generations, special considerations are needed to design ICT supported learning approaches that can provide relevant learning for all participants.

In the knowledge based society with continuously changing technologies, learning is important for everyone. Lifelong learning needs to be supported and recognised in all aspects of life, as a considerable amount of learning takes place outside formal education, especially among older learners. Supporting lifelong learning for all age groups with continuously changing technologies and generations is a great challenge for researchers and stakeholders as well as for the older people themselves. The whole role of learning is changing, together with the availability of a new wave of promising ICT applications and research is needed to determine how learning can best be supported and provided in an ageing society.

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