

Available online at www.sciencedirect.com**SciVerse ScienceDirect**

Procedia - Social and Behavioral Sciences 46 (2012) 2356 – 2361

Procedia
Social and Behavioral Sciences

WCES 2012

Non-practical ICT courses for seniors for a comprehensive involvement to provide a global understanding of the Knowledge Society

Roger Esteller-Curto ^{a*}, Pilar Escuder-Mollon ^b^{a,b} *Universitat Jaume I. Senior Citizens' University, 12071 Castellon, Spain*

Abstract

When teaching Information and Communication Technology (ICT), subjects related to learning computer skills, using Internet, and other software programs usually spring to mind. Because society is increasingly using technology to share, learn, create, socialize, access services, etc., it seems obvious to teach how to use this technology. This computer mediated society is known as the Knowledge Society. The Senior Citizens' University initially wanted its learners (people over 55 years old) to benefit from computers and Internet, but this has proved insufficient on its own. Senior learners also need to be aware of the possibilities that the net offers them and their of new role in the Knowledge Society; how they can participate, how they can have an impact on and construct the future of the network, and the importance, potentialities, impact and risks of new aspects that arise in the Knowledge Society: identity, inclusion, publishing, new media, power, creating, using content, etc. To achieve such competence, theoretical ICT subjects had to be offered to all senior learners, even those who were not keen to learn about technology. In this article we detail the content of these courses and the impact they had on learners.

© 2012 Published by Elsevier Ltd. Selection and/or peer review under responsibility of Prof. Dr. Hüseyin Uzunboylu

Open access under [CC BY-NC-ND license](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Keywords: ICT, knowledge society, education, senior learners

1. Introduction

Research and statistics show that Information and Communication Technology (ICT) competences among older people have risen, and are constantly increasing, but not at the same pace as among younger generations. Adolescents and young adults are the main users of ICT tools; they have incorporated technology into their lives, not only as a tool for work or to find information but for other purposes; they use ICT as an extension of their daily life, they are eager to try out and use new ICT tools (internet, mobile, other technological gadgets or even household appliances). They use ICT to expand their personal relations and for enjoyment or entertainment. They accept and incorporate new ICT possibilities as soon as they appear; if a device or system interests them, it is never rejected on the grounds that it is “too technological”. They have a sense of ownership of the net and on the whole, are not afraid to try out something new or unfamiliar.

* Roger Esteller Curto. . Tel.: +34 964-729322

E-mail address: esteller@uji.es

In contrast, seniors mainly use the net as a basic communication tool (e-mail or chat), for information (to read the news and search for information) and other services (such as e-banking). In most cases, these functions are sufficient for their purposes, as they only want to communicate with friends and relations through mails or messaging services and consult certain websites for information.

However, the experience of the Senior Citizens' University (SCU) belies this generalization and shows that if the educational intervention is carried out correctly, in other words if it is motivational, enjoyable, and free of pressures, seniors will be keen to continue learning. Senior students are open to discovering new possibilities and, if possible, will take advantage of them. The Internet has created new kinds of links and information flows with enormous potential for participation and interaction from which seniors must not feel excluded. Furthermore, this new society cannot be built without the participation of seniors.

2. Motivation

Web 1.0 opens up huge information and communication possibilities. Educational institutions provide courses and activities that enable senior students to learn. In an attempt to remove the digital gap through education, or as a result of demand from seniors, many educational institutions are now offering ICT courses and activities. Consequently, seniors are acquiring increasingly higher levels of competence in surfing the net and communicating, and greater inclusion in today's society.

Courses for seniors are very different from those designed for other citizens. These differences arise because their learning capacity is different from younger learners and also because their interests are entirely personal (they are not driven by professional or career demands). Use of computers and software is similar to learning a new language and tools and requires a completely new set of skills

The main aim of a basic course is to enable students to use a browser, learn to navigate web pages, search for content, and use a mailing tool. Perhaps because other media (forums, mail lists, chats, personal web pages, etc.) can be more complex and their meaning is not so immediately obvious to them, seniors tend not to use them so widely. All this tool-based teaching increases the seniors' web *experience*, but not their web *expertise* (Chadwick-Dias 2004)

Web 2.0 now offers new ways of making contact with other people; it goes further than previous methods of communication and also has huge potential for content creation. Any curriculum designed for seniors must include activities and exercises that will motivate them, and take into account the different pace they require. For that reason, ICT education for seniors is not only about teaching, explaining things and letting learners practice; it constitutes a complex educational process where other concepts must be considered. Teaching Web 2.0 tools raises new challenges, since users can become creators of new content (individually or collaboratively) or members of social networks (as followers or by publishing their own content). The new possibilities of Web 2.0 enable citizens to create new networks. Castells (2006) describes this new society as the "net society", while other sociologists prefer to call it the "knowledge society" (Covi 2004). Regardless of the term used, the new society is now able to share, influence, obtain and create information on a hitherto unimagined scale. Citizens must be aware of the potential of this technology, even if they are not keen to become avid web surfers themselves.

3. Senior Citizens' University

The Senior Citizens' University (SCU) is an educational program of the Jaume I University (Castellón, Spain). In 1998, 38 senior learners enrolled on the first course. In the 2011/2012 academic year, 919 learners are enrolled on degree or post-graduate courses. Undergraduate studies cover a three-year period (120 ECTS credits). Once learners finish the undergraduate degree, they can continue on post-graduate courses that have no time limit (60 ECTS

credits). A total of four post-graduate courses are offered, enabling each learner to choose their own area of interest. Because these courses are tailored to senior learners' needs, they are not awarded an official degree, but their efforts are recognized with a diploma.

The subjects come mainly from the humanities (history, arts, psychology, philosophy, sociology, etc.), but health and economics are also included. Technology (ICT) and languages are also offered as elective courses that have to be taken in order to meet the degree requirements. Basic, intermediate and advanced ICT courses are offered, together with workshops and activities.

The basic level is appropriate for people with no experience of computers or the net. They learn to use the mouse and keyboard, and the operating system (Windows) with its own language and interface (windows, click, double click, drag and drop, copy, paste). They then learn to use the tools (browsers and mail tools) and to apply them for their own purposes (searching, learning, enjoyment, etc.). The 50-hour course teaches them to become basic Internet users.

The intermediate level course is also 50 hours long. Students learn to use the net for their own needs: to shop online, chat, use translation web sites, etc. The course focuses on the use of web pages (museums, maps, media, blogs, Wikis), security (virus, mails) and information search (web pages, images, programs). On completion of this level, students have gained sufficient skills to use the net efficiently and also to become self-learners; however we have concluded that this claim is not entirely true, as we observed a lack of initiative and determination to keep trying, testing and asking for help accurately.

The advanced level is addressed to students who want to use specific computer tools (image uploading, social networks, bookmark services), but also to continue learning more about areas covered in the intermediate level (e.g. search tags, payment services, security advice, etc.).

The courses and other workshops and activities essentially aim to increase ICT skills using computers and the Internet, but they are also designed to go one step further in promoting more active ICT users. Encouraging seniors to become more active requires methodology other than instruction in basic one-purpose tools: the net used as a means to an end (e.g. e-mail or information search) as opposed to using the net as a tool in itself (for enjoyment, to contribute knowledge and influence net-citizens: the Web 2.0 philosophy). To enable someone without any ICT knowledge to become an active net citizen, we have to consider an educational intervention that focuses firstly on the content to be taught (subjects, courses, activities, etc.), and secondly on promoting the role of the student, the steps the learner follows on the path to active net citizenship.

4. Net Citizenship

We consider that to be fully included in the new Knowledge Society a citizen must master two competences

- To use ICT tools actively
- To be conscious of the present changing society

The meaning of "active" was defined in Esteller et al. (2009) and it is essentially related to the use of ICT tools such as the computer, mobile phone, camera, Internet, etc, but it also reflects a complex status, not only based on skills or competences in the use of technology but on the capacity to be aware of the reality and consequences of the net and with the abilities to act and influence through it. Becoming an active ICT user does not mean being familiar with every tool and option, but being able to understand how Web 2.0. works. Active users are also characterized by their lack of fear to try out new things, their ability to ask for help correctly (making themselves understood) and, as a result, their ability to also offer understandable help.

After taking courses on ICT web 2.0 tools in the SCU, some learners had increased their technological skills and were aware of their impact, but lacked overall knowledge about technology in the global society. This prompted us to pilot an ICT theory course in the 2010/2011 academic year, which we present in this paper.

We designed a 6-lesson course (9 hours in total) for learners enrolled on the third year at the SCU. The course, entitled “The technology and information society”, is described in Table 1. A total of 103 learners are enrolled on the third year, 5 of whom had no ICT experience, and most of the other students only had experience from previous SCU courses. Only 6 had more in-depth expertise in ICT, mainly as a result of their previous jobs.

Table 1. Timing and contents of the course

Session	Duration	Content
1. Evolution of technology	1:30 h	Examples of past technologies that changed the world. Presentation of the determinism theory. The modernist and post-modernist society. About digitalization, advantages, disadvantages, potentialities and benefits for information management. The leap in the storage, processing and transmission capacities. Examples from the last 20 years. History of the Internet, the philosophy of its foundations. Hacker culture. Introduction to the Information Society and the Knowledge Society and their differences.
2. Information and Knowledge Society	1:30 h	Various definitions of the Knowledge Society and the Information Society. Relationship between the two concepts. The first webs (1991) and the doc.com bubble. The leap to Web 2.0. Characteristics, new ways of creating content, collaboration and organization, examples of tools: wikis, blogs, and virtual communities. Risks (digital gap, false information), advantages (self-organized information, increased quality)
3. Aspects of the net – society	1:30 h.	The importance of identity, the self-Internet (gadgets), being creative and sharing (open licenses), architectures (p2p, cloud), virtual communities (not everything is Facebook), movements (freedom in the net and neutrality), foundations and associations.
4. New media	1:30 h.	New tools and media that citizens can use to spread news and share information. Sharing and improving quality of information, organization for content creation. New media available to everybody, anywhere (images, video) and immediately (wireless gadgets). Disadvantages and risks when producing information (quality, reliability, vandalism) and advantages (citizens’ power, worldwide, immediacy). Social networks and six degrees theory, power influence in social networks.
5. Digital journalism	1:30 h.	The historical evolution of journalism. The role of journalists. Example of movements (Wikileaks, Arab Spring and #15M) and opinion depending on perspective (government, society, third parties, etc.)
6. News clippings	1:30 h.	News cuttings. Groups of learners are given recent news stories from the newspapers that they are asked to discuss in terms of the benefits, advantages, potentialities, risks, etc. Example of news stories were wikileaks, efforts of the government to reduce paper, a failure in the cloud network, free Wi-Fi, complaints from publishers, censorship and control of the media, etc.

5. Impact

A quantitative study was carried out. Learners were asked to complete a survey at the end of the course. A total of 78 valid surveys were collected and the results are presented in following tables. All learners used Internet at sometime; 85% claim to use Internet at least once a week; 54% of learners access Internet daily and only 15% usually spend less than half an hour per day. The high use of ICT among the learners was not surprising, since Internet use is encouraged from the beginning of the degree through courses and activities, and also through large amounts of information (photos, materials, news) published on the web. A scale of 0 to 3 was used, where 0 is “I do not use it” and 3 is “I use it constantly”. The learners’ profile is presented in Table 2.

Table 2. Profile of learners from survey results

	Skill	Average
1	Use of electronic mail (e-mail)	1.83
2	Surfing the net	1.74
3	Using of search engines (google, bing, etc)	1.68
4	Social Networks (Facebook, twitter, etc)	0.52
5	On-line albums (flickr, picassa, etc)	0.35
6	Follower of blogs or podcasts	0.33
7	Author or writer of blogs or wikis	0.23
8	User of cloud services (Google docs, dropbox)	0.34
9	Having more than one single e-mail account	1.03
10	e-commerce (buying, tickets reservation, etc)	0.69
11	P2P networks (e-mule, torrent, etc)	0.26
12	e-Banking (accessing on-line bank account)	0.80

On a scale where 0 is neutral, -2 is completely disagree and 2, completely agree, the average for the general evaluation of the course is shown in Table 3.

Table 3. General evaluation of the course

	Question	Average
1	The course was interesting, enjoyable and pleasurable	1.19
2	I consider the content useful and necessary for my education as a person who forms part of the technological society	1.14
3	I think the course was difficult. It was difficult to follow the explanations, and sometimes I could not understand the concepts	-0.47
4	The course has had an impact on me; I have discovered things that I did not know. Now I understand certain things better and I will be able to apply them more effectively or discuss them with my colleagues	0.94
5	I think the teacher explained the material appropriately	1.32
6	Before the course, I had a confused or vague idea about the information and knowledge society	0.28
7	It would have been useful to go deeper into technological and technical issues on the course	0.20
8	I recognize that I now have a better understanding of certain changes and effects of technology	0.97
9	I consider that it is exaggerated to talk about what is happening in the present society as "revolution" or social change	-0.25
10	I recognize that personal adaptation is necessary to remain included in today's society	0.88
11	It would have been useful to go deeper into aspects related to media, power and social communication on the course	0.63
12	I think the course should have been longer	1.04

6. Conclusions

It must be remembered that learners on this course were over 55 years old (average age 66). They have not therefore grown up using computers or Internet (even those that used computers at work were familiar with commonplace web tools). On the other hand, as they were third year students at the SCU, they had had the chance to enrol and participate on ICT courses and activities during the two previous academic years and as such, they have higher skill levels compared to other senior citizens outside this educational program.

Before starting the course we observed that most of the learners found it difficult to imagine how an ICT subject could be taught outside the computer classroom. The course was taught by two teachers, and no remarkable differences were noted in responses to question 5 of Table 3 (teachers J.Traver 1.36, and R.Esteller 1.31). Both teachers had over five years' experience teaching ICT practical courses to seniors. Classes were mainly lectures, but learners were able to ask questions and participate. Every attempt was made to relate the course content to current events.

Table 3 shows that in general, the course was well received. However, the most interesting conclusions arise from responses to questions 8 and 10, where the learners recognize the importance of the knowledge they acquired and conclude that they are now more aware of how social changes affect their own lives.

This course may be considered as a small – but vital – step to increase the competences and inclusion of senior citizens in today’s society; the course should be complemented with other activities such as those offered by the SCU, which include a wikisenior (<http://www.wikisenior.es>) and blogs for learners as well as other workshops and activities where learners can become active. These classes have allowed learners to create an essential competence base through practical ICT courses.

Acknowledgements

This research was undertaken within the framework of the “seniorsKS” Grundtvig Learning Partnership project, supported by the European Commission’s Lifelong Learning Programme: “Seniors in the Knowledge Society” (<http://www.seniorsks.eu>).

References

- Anderson, P. (2007): What is Web 2.0? Ideas, technologies and implications for education. JISC Technology and Standards Watch. Bristol: JISC
- Castells, Manuel (2005) Informationalism, Networks, and the Network Society: A Theoretical Blueprint. *Network Society : A Cross-Cultural Perspective*. Edward Elgar Publishing
- Castells, M. (2006). Informacionalismo, redes y sociedad red: una propuesta teórica. *La sociedad red: una visión global* (pp. 27-75). Alianza Editorial.
- Crovi, D. (2004). Sociedad de la información y el conocimiento: algunos deslindes imprescindible. *Sociedad de la información y el conocimiento: entre lo falaz y lo posible*. Buenos Aires: *La Crujía*, 17–55.
- Chadwick-Dias, A., Tedesco, D., Tullis, T. (2004) Older Adults and Web Usability: is Web Experience the Same as Web Expertise? In: Extended Abstracts of the 2004 Conference on Human Factors and Computing Systems, pp. 1391-1394 Vienna, Austria.
- Eastman, Jacqueline K. Iyer, Rajesh (2004). The elderly’s uses and attitudes towards the Internet. *Journal of Consumer Marketing*. 21(3) pp: 208-220. Emerald Group Publishing Limited.
- Esteller, R., Escuder P. & Traver J. (2009). Methodological proposal for an ICT activation among senior learners. *International Conference on Education and New Learning Technologies(EDULEARN09)*", Barcelona. Proceedings CD; ISBN 978-84-612-9802-0. International Association of Technology, Education and Development. Barcelona, Spain.
- Esteller, R. & Escuder, P (2009). Structure of the teaching and learning process of Information and Communication Technologies for Seniors. *International Scientific Conference Society. Integration. Education*. Rezeknes Augtskola. Rezekne, Latvia
- Esteller, R. & Escuder Pilar, et al. (2007). Methodology and didactics in ICT courses for senior citizens at the senior citizens’ university. *VI European Congress of the International Association of Gerontology and Geriatrics*. St. Petersburg.