e-Competence
The Elderly and Competence in e-Learning

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Abstract: The increase in population age is undeniable today. At the same time, technologies are increasingly present in daily tasks. In this scenario, the role of continuing education courses to enable showing the full development of the subject. E-learning can be one of these possibilities, since it covers a wide range of older people. Thus, it is necessary to discuss the necessary skills DL in the elderly. This research was developed in a virtual course of workshops with different themes for the elderly at the Federal University of Rio Grande do Sul in Brazil. From the results obtained in this study it was possible to map the skills of older students in a virtual environment. We list as interaction skills , autonomy , digital literacy , virtual literacy ; digital information ; virtual resilience , organization and cooperation. Therefore, we see the need for greater depth in relation to e-learning for seniors and what is required to allow for constructive action on this issue in this kind of education skills. Currently the increase of elderly led to questions and social change. Thus the results show the need to rethink new educational practices that may include older people in today's society.

1 INTRODUCTION

It is undeniable increase of population with advanced age. In Brazil the elderly population represents 20,590,599 individuals (IBGE, 2010). This high life expectancy provides social and especially educational changes.

Continuing education is a right of the population. A possibility of providing social inclusion and lifelong learning is through digital inclusion. This type of course can awaken and engage the elderly to explore the digital world, encouraging them to experiment, revise, repeat, construct, deconstruct and share experiences. Many researchers have been conducted in this field allowing the formation of a significant number of elderly in the use of technologies of information and communication (ICT).

In this panorama, and from the need to find new offers for this audience, offering online courses in different subjects is shown as innovative and feasible for the elderly. This modality involves continuing education and the use of technology and ultimately proves as a rich source of possibilities for a different audience that has social, emotional and motivating characteristics to learn and build new knowledge.

There are few studies that discuss the e-learning and the elderly (Reis, 2006), which provides questions and the need to delineate what would competences in this public virtual courses.

From this scenario, it started at the Federal University of Rio Grande do SUL/UFRGS, Brazil, offering virtual classes specifically for the public aged 60 years or more. In 2012 was offered in the state of Rio Grande do Sul/Brazil course "QualiViE - Quality of Life: Virtual workshops for active aging". The QualiViE was composed of six workshops. Each workshop had a subject of interest to older. These workshops were taught by specialist teachers. Each workshop lasted two weeks in virtual form. These were offered in virtual mode. Seniors who participated in the workshops participated in discussion forums, chats and activities. Data collection was conducted from the participation of older persons in workshops, through questionnaires and interviews. These data allowed discussing the necessary competences in Distance Education for the elderly. Therefore, the aim of this paper is to investigate what are the skills necessary for the elderly to participate effectively in online courses.

Then we will address the theoretical framework regarding the skills, the elderly and ICT

2 SKILLS: SHARES AND POTENTIAL OF THE ELDERLY IN E-LEARNING

Reflections on skills in recent years have increased significantly, which caused the dissemination of research, publications in journals and books that discuss the definition. However, the research conducted on the subject is not of an educational character, since it has started in the business.

In educational terms, Perrenoud (2000; 2002) began discussions about working with competencies in education, where he resumed the panorama of changes resulting from technological advances and what are the actions needed to address them. Concerned about the pedagogical aspects and development of skills Zabala and Arnau (2009), Coll and Monereo (2010) also discuss the same topic in education.

From the discussions in the literature and related research, this article will use the concept that defines the competencies as a set of Knowledge, Skills and Attitudes (named KSA), which provide subsidies enough to the individual to face situations and solve problems that emerge during the process of teaching and learning (Behar, Ribeiro, Schneider, Silva, Machado, Longhi, 2013).

Thus, it is necessary to think about the use of ICT at all levels of education and skills necessary for an effective and constructive use, especially with a different audience as the elderly. Therefore this is inevitable in this panorama to integrate in the concept of competencies few features that put into action the elements of the KSA. For this, Behar, Ribeiro, Schneider, Silva, Machado, Longhi (2013) lists three features: a) Support resource: it's biophysiological, refers to the body and its structure, b) Evolution resource: refers to creativity, which in a Piagetian perspective is considered the evolution levels of knowledge c) Mobilization resource: considers the role of affectivity in the construction of knowledge.

Some research has outlined the necessary.skills in using ICT. The European Union, supported by the European Commission and Council of Ministers, set up cyberskills, or e-competences for the XXI century. Based upon the justification of the changes arising from technology, was created the "European e-Competence Framework", a document that cites

36 skills needed in a corporate vision (CWA, 2010).

Discussing the same topic, different skills are cited for the use of ICT, as the case of information skill, knowing how to use the information in a given context (Dudziak, 2003; Bawden, 2001), digital skill in which the user must know to conduct digital research (Santos, 2009), among others as digital literacy and virtual skill. In this perspective, some skills can be listed in relation to the use of digital tools in e-learning:

• Digital fluency: goes beyond knowing how to use ICT, but it's knowing how to create meanings to this subject in order to provide permanent learning (Resnick, 2002; Takahashi, 2000; Machado, Longhi, Behar, 2013);

• Digital literacy: is the use of basic skills in reading, writing and mathematical problems as a way to understand the content and everyday relationships developed in e-learning (Kirsch, 1993; Machado, Behar, 2013);

• Interaction: refers to the interrelationship between teacher/student in e-learning involving interpersonal and intrapersonal relationships (Moore, Kearsley, 2008). In this competence the mobilization resource of affection is essential because it allows the student to a self-analysis to interact with colleagues and teacher shamelessly.

• Cooperation: is the competence that instigates forms of interpersonal relationships through teamwork towards a common goal, through digital technologies (Machado, Longhi, Behar, 2013);

• Autonomy: is the ability of self-guiding and refers to self-responsibility and self-organization in DL (Mattar, Maia 2007; Moore, Kearsley, 2008; Litto, 2010);

• Organization: it is established by ordinance, structuring and systematization of time, available materials, information and group work in virtual (Machado, Longhi, Behar, 2013);

• Communication: there are two styles of communication: oral and written (Villa, Poblete, 2010);

• Oral communication implies the ease and effectiveness of communicating ideas, feelings, and knowledge through the spoken words. This is required for video conferencing or other tool that requires user speech. Written communication refers to the ability to convey ideas, feelings and information through writing, including the use of support as graphics, illustrations and more. This is essential, since most tools of e-learning uses this type of communication;

• Virtual resilience: refers to the need of knowing about limitations and reassessment

regarding the attitude to continue learning in online mode in order to face the new (Machado, Behar, 2013);

• Informational: initially was linked to the search for information. The term is widely used by American librarians regarding the search and use of information (CWA, 2010). In recent years incorporated the use of technology in support of this research. But it is clear that research in digital media should be differentiated from the usual research in physical libraries. Therefore, refers to search and access information efficiently and effectively available in the digital medium.

Thus, this study demonstrates the importance of enhancing regarding to the skills of the elderly in distance learning and its importance in the society of information and knowledge.

In this scenario the search was conducted by research related on skills, the elderly, continuing learning and the use of ICT. Few studies were found and are generally searches or reports on how to assess competence in the elderly in legal terms. That is regarding the older person being able to keep or not active in daily activities (Willis, 1996; Widdershoven, Berghmans, 2002; Law, Yau, Gray 2012).

In terms of communication skills of the elderly, Underwood (2010) challenged the studies reporting the high linguistic decline. When there are really problems of expression, the elderly seek to communicate affectively (gestures, facial and body expressions, etc.).

Other references found not clearly pointed the definition of competence and its involvement in the continuing education of this public. Machado and Behar (2013) published a survey which showed eight competencies for older students in virtual courses, including: virtual resilience, digital fluency, autonomy, virtual literacy, organization, cooperation, interaction and communication.

Therefore, this perspective asks what skills are needed in the elderly to participate in online courses. To elaborate on the subject, the following will detail the methodology used to achieve the mapping skills of elderly people in e-learning.

3 MATERIAL AND METHODS

This research was developed in a quantitative and qualitative premise focused on case study. The investigation was built on a theoretical and practical approach to enable an immersion of the researchers to collect the data.

In 2011, work began on the development of an extension course "Introduction of DL for seniors" with the goal of empowering the elderly in the use of virtual tools such as virtual learning environment (VLE) and its functionalities and as learning objects (LO) built. The LO concept adopted is Behar, Macedo, Souza, Bernardi (2009) who considers any digital material with educational purposes.

During the year of 2012 it was offered the virtual course "QualiViE - Quality of Life: Virtual workshops for active aging". Altogether, there were 15 individuals who participated in the workshops. In this course were offered six workshops: Workshop Soundtracks Composition (Figure 1), Color Workshop (Figure 2), History and Memory Workshop (Figure 3), Workshop of Physical Therapy (Figure 4), Spanish Workshop (Figure 5), Photography Workshop (Figure 6). All workshops are taught by specialist teachers in each subject worked. Classes were taught in Portuguese, except Spanish. The duration of the workshop was two weeks. The classes were where we used virtual interaction and communication tools. LO was also shown in the figures.

Figure 1: Interface of LO workshop of Soundtracks Composition.

Figure 2: Interface of LO Color Workshop.

All workshops had two weeks in length, being only the first class live and the rest virtual. The only exception was the Spanish workshop that was offered lasting four weeks for its complexity in content. These were developed by expert teachers in

the same areas, these being the ones who built the LO, activities and content covered. For classes we used the virtual learning environment (VLE) ROODA - Learning Cooperative Network (https://ead.ufrgs.br/rooda/) (Figura 7). This environment has 26 features, from these, were used during the workshops QualiViE: Forum: enables asynchronously discussion on a particular theme; Diary: place to express their feelings in written format; Chat: place for synchronous interactions; Webfolio: allows posting activities and teacher feedback on them; Library: allows sending supplementary class materials; Tab Lessons: posting place for the activities content; RoodaPlayer: functionality for viewing videos online and A2: form of synchronous Messenger.

Figure 3: Interface of LO History and Memory Workshop.

Figure 4: Interface of LO Workshop of Physical Therapy.

Figure 5: Interface of LO Spanish Workshop.

Figure 6: Interface of LO Photography Workshop.

Figure 7: Interface of VLE ROODA.

In order to cover the purpose of this article, identifying the skills of the elderly in virtual, it was used a triangulation of methods for data collection: observation, interview and questionnaire and technological production. The observation, interviews and questionnaires occurred during the course QualiViE. In order to collect the information of the technological production it was used digital tools exerted by the elderly in VLE ROODA.

Therefore, for the quantitative data analysis it was used frequency distribution represented in percentage and mean. The analysis of qualitative data was achieved by means of content analysis, including critical or hidden understanding of communication. To do so, we used the steps suggested by Bardin (2010) in relation to content analysis. Thus, the following will treat the data collected during the research to enable understanding of skills, elderly and distance learning.

4 ANALYSIS AND DISCUSSION OF COLLECTED DATA

From the data collected in this research defined the profile of older people in e-learning and define the necessary skills in virtual mode.

The study subjects were 15 elderly with a mean age of 67 years, being two males. In relation to

education, predominance of college degree (44%), followed by school (38%). These data indicate the predominance of a public with high education, what will distinguish this group from the rest of Brazilian elderly.

Considering the development of class planning the elderly showed that the teacher should consider mainly difficulties and skills that students will find in technology tools (Figure 8). It was noted during the workshop that one of the great difficulties of the students was the use of digital technologies, including VLE itself by still lack of knowledge enough to dexterity in using them. This evidence shows how important are Digital Fluency competence and Virtual Literacy competence.

Although it was performed many tutorials and videos related to digital tools, the elderly prefer to contact the teachers or instructors of the workshops. This denotes how the affective resource of competences is critical to this audience. According to the testimony of the elderly we can analyze that they could evaluate the preparation of teachers for the classes considering the potentialities and limitations of the student: "What I find most important in any workshop for seniors is the patience of the teacher with the students because we are slower".

Digital fluency and Digital literacy are important in this type of course, since before knowing the ease using of this technology is important to be literate and critically understand the usage of it.

With seniors this literacy requires an earlier competence called digital literacy in which the subject should have the first learning in the use of ICT and further develop digital fluency and literacy necessary in virtual courses for this audience.

Planning of virtual classrooms

■ Possible difficulties and skills in the use of technological tools for elderly

■ Biopsychosocial needs of older people
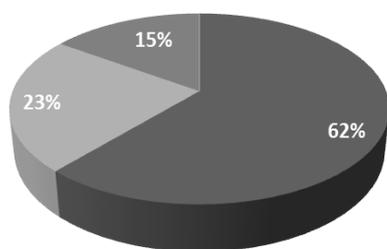
■ Learning the elderly

Figure 8: Graph of planning of virtual classrooms.

VLE ROODA, as already pointed out in this article, was used in the interactions between teachers and students, which makes it necessary to investigate the difficulties encountered in its use. Therefore, regarding ROODA tools the students had more difficulties with RoodaPlayer and Chat. The RoodaPlayer functionality is coupled to VLE ROODA where you can play video available on internet sites.

The difficulty pointed out by the students is mainly due to the fact that it is a new tool for the course and also due to technical difficulties in the operation of it since it was still in testing phase. The other features were evaluated with more difficulty according to needs (activities and content) that teachers used in each workshop.

In addition, elderly showed that they prefer communication tools (84%) in virtual courses. These data show the importance of developing a Communication Competence with this audience.

Communication is primordial in online courses, both orally and in writing. For seniors the two communications are important and complementary. Communicating in virtual requires the older audience know to "listen" and know the time to respond and their forms, since the virtual communication is different and unknown to the elderly.

Forum was the ROODA tool pointed as the most used during the workshops. Each forum (totaling 11) had an average of 15 students' participation. However, this participation was limited to only respond to the teacher and not interact with colleagues. So in this scenario would be important to develop the Interaction Competence, since that public is not accustomed to using the technology to keep in touch with each other, much less to express themselves emotionally and create / maintain virtual social ties.

Regarding activities, the elderly showed to prefer simple activities that use virtual resources and enabling research. The workshops that used unknown tools were the most valued, since they were more practical and useful for their everyday. They pointed out that the long activities were discouraging during the workshops.

The workshops that used the social network Facebook or a text editor, have not been evaluated positively because it was a tool known and learned by the elderly. According to the testimony of one of the elders: "We really didn't have Spanish classes, we only fill in the blank portion of a song and then sing".

Activities requesting conducting research were well evaluated, as the research on specialized sites,

as those needed to recall historical facts of the subjects involved. The workshop of History and Memory, for example, dealt with the past historical issues of the elderly which generated a lot of movement both in family and friends to collect information such as the internet to supplement the data. So in this prism two skills are important for the elderly: Digital Information Competence and Competence of Autonomy.

Building informational competence in older audience requires a collaborative effort between the digital fluency and literacy, as it the (re)learn how to search. Unlike the elderly were accustomed, virtual research requires knowing to define objectively what you want, select and analyze in more detail the information available on the internet. And Autonomy should be encouraged by the teacher, tutor and monitors, mainly because students were not accustomed to the type of virtual classroom.

Asked about the timing of the activities, students reported it should be of three or more days for each task (46%). This evidence corroborates with other studies which show the need for a longer time to achieve these activities, both in classroom courses and virtual (Oliveira, Oliveira, 2007; Machado, 2007). These data are confirmed by the testimony of the elderly: "I thought the time very short, it could have been two weeks with two virtual classes".

The Organization Competence in this context is relevant, since the elderly - because they are mostly retirees - no longer have the accuracy in time and tasks deadlines that require greater dedication. The organization is critical in virtual courses and one of the main factors that hindered the elderly during classes, because many forgot to perform the activities or didn't schedule classes which caused their absence.

The format of the media pointed out as preferential by the elderly is printed, even in virtual courses (46%). Even with virtual activities they prefer to receive them in print, which shows the need for the security of paper, which is a form of technology known by them.

A surprising result was that in relation to the dynamics of activities, since 57% of students indicated they prefer to work individually. Among the reasons was that "Because everyone can do at the time we want or can at our house". Another elder said: "Because the elderly can do the activities when available". Complementing: "You can search more". Therefore refers mainly to issues of availability of participants to combine schedules (virtual and presence). Thus, developing Cooperation Competence is important, but we wonder how far it

is interesting to the elderly. The elderly showed that there is no exchange between colleagues. Therefore, the cooperation competence can be considered cross and not general jurisdiction. It is noteworthy that this is a particular study in a small group of older people. Each group of older students has its social and cultural profile that should be considered when talking about competence.

Regarding the language activities, they showed a preference for the combination of text and image (87%). Although the workshops work with audiovisual content such as video and music still textual language is chosen by the elderly. According to the testimony of the elderly: "Its page was very good, attractive and without that figure drawing, which I found ridiculous of other workshops, with nothing to do with the rest", "Every technological feature that was shown was prepared for elderly". From these statements we can see that the language used by teachers is constantly evaluated by older students and they have criticisms concerning the form and format of the same.

The elderly showed that the content should be challenging and make them search and supplement their learning (92%). These data show that despite the older student be academically educated in the traditional perspective of memorization, they prefer building knowledge activity which becomes meaningful to their lives.

To finish, we asked a general evaluation of the workshops, in which the elderly showed a high satisfaction, followed by states of happiness and sadness. These data show that there was the construction of the Virtual Resilience competence, once they knew to face the new and continue to participate in virtual workshops.

Although the evaluation is positive, the experience in virtual workshops, students still prefers courses that combine presence and virtual classroom. According to the testimony of one of the elderly: "The presence classroom is very complete and enlightening and when I have doubts the virtual is also important". So we can see that older people are prepared to participate in online courses, but it is up to the managers and teachers of this type of course to plan adequately to meet the demands of the target audience.

5 CONCLUSIONS

The data collected and discussed in this article denote a profile of elderly active and who wants to participate in courses for continuing education. From

the survey data and compared with those described by Machado and Behar (2013), it was possible to map the primordial competences in virtual courses for seniors.

So it was listed seven essential skills: Interaction, Autonomy, Digital Literacy, Virtual Literacy; Digital Informational; Virtual Resilience and Organization. From the reflection based on data the Cooperation Competence was not outlined as a key to that public, since depending on the profile of the students it will not be considered relevant in virtual interactions.

The Digital Informational competence was one of the highlights of this research, since the students indicated the need for them in activities that foster research, investigation, contradicting the view that courses for this audience should follow traditional lines of education. The Cooperation Competence, from the data collected, was considered transversal, once the public pointed out that prefer to work individually. Individuality is very present in the elderly, for different issues, ranging from the loss of loved ones (friends) to the abandonment from the family.

It should be noted that this study was conducted with a peculiar group of seniors, where the profile denotes subjects who want enhancement and new learning, and want to use ICT in their daily lives. This kind of group of elderly specifically does not allow a generalization of skills regarding older audiences of Brazil, mainly by financial difficulties or lack of education. Therefore, there must be other skills, mainly the transversal, in order to meet the different audiences that are around the world.

The data discussed here are positive for the application performed. According to the testimony of one of the elderly: "All elderly who want to stay active should do virtual courses. Old age is the future of everyone, so it is important courses that stimulate the creativity of older people". Thus, there is the need for greater depth in relation to e-learning for elderly or disclosure of this type of education courses for older people. With the rise of older people is up to everyone involved in education to rethink new practices that can effectively include the public in this society that is constantly changing.

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