



Comparative study of Competences 2.0 between young and senior people. Present time and challenges for their inclusion

Estudio comparativo de las competencias 2.0 entre jóvenes y mayores. Actualidad y retos para su inclusión

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ABSTRACT:

This research compares the digital skills in knowledge and use of ICT in social communication and collaborative learning, skills useful for searching and treating information, as well as interpersonal competence among young and older students from the University of Granada (Spain). A descriptive study with a quantitative methodology using the questionnaire as an information tool has been made. The sample consists of 200 subjects, 100 with ages between 18 and 22 years of age, and another 100 between 80 and 85 years of age. There is a great difference in their competences, illustrating the current unequal situation and the need to include older people in technology as it is important to create learning and communication contact.

Keywords: Young people; seniors; Digital Literacy; ICT

RESUMEN:

Esta investigación compara las habilidades digitales en conocimiento y uso de las TIC en comunicación social y aprendizaje colaborativo, habilidades útiles para buscar y tratar información, así como la competencia interpersonal entre estudiantes jóvenes y mayores de la Universidad de Granada (España). Se realizó un estudio descriptivo con una metodología cuantitativa utilizando el cuestionario como herramienta de información. La muestra consta de 200 sujetos, 100 con edades entre 18 y 22 años, y otros 100 entre 80 y 85 años de edad. Existe una gran diferencia en sus competencias, lo que ilustra la actual situación desigual y la necesidad de incluir a las personas mayores en la tecnología, ya que es importante crear contacto de aprendizaje y comunicación.

Palabras clave: Jóvenes; Personas Mayores; Competencias Digitales, Tecnologías de la Información y la Comunicación.

1. Introduction

One of the characteristics of today's society is that now, unlike previously, information and knowledge are available to any individual, who has certain skills and the necessary technological resources can search for information, so that everyone can inform themselves and has access to any medium at any time and from any place. Through the Internet a large part of the activities provided by other technologies can be carried out (Heredia and García, 2017, Domínguez, 2009, Álvarez, 2011, Martínez, Cabecinhas and Loscertales, 2011, Daghan, 2017). In this sense, for Castells (2000), the Information Society represents a new industrial revolution. In this panorama of virtual connections / disconnections, two generations coexist, the "before computer" generation (Freixa, 2006) and the one that was born and grew up interacting with various technological devices, the so-called "digital natives". Open education aspires to democratize education, promote inclusion and effect change through social justice for young people and seniors (Funes & Mackness, 2018).

The population accesses technological equipment in a dizzying way and uses it with an increasingly higher frequency, for purposes as diverse as training, communicating, enjoying themselves and working. In addition, Internet is not limited to the mere transmission of information, but becomes a powerful mechanism of socialization, transmitter of ideas and values (Fainhole, 2006, Xavier and Cabecinhas, 2000). Although its original purpose was to reach safe, fast and economic information to facilitate communication, today it has become a means that can cause significant changes in people and society (Şahin, 2018).

Other studies exploring the uses of literacy among working-class communities in the north of England, the 'uses' of literacy were understood as double-edged, on the one hand enabling mobility and on the other as a controlling force (McDougall, Readman, and Wilkinson, 2018).

Recent studies provide evident data about the crucial role that technologies have as emotional mediators that lay the strategic and structural foundations of significant relationships, enriching the emerging lines of debate around the application of ICT Information and Communication Technologies in socio-affective development (Colás-Bravo, González-Ramírez and de Pablos-Pons, 2013, Espinoza, 2015, Calvo and San Fabián, 2018).

In 2016, worldwide, 3.500 million people were using the Internet, of whom 2.5 million were from developing countries (ITU, 2017). Consequently, we consider that all our activity is linked in one way or another to the digital world, to such an extent that it becomes unthinkable to face life without these new tools. This technological wave is not exempt from weaknesses and risks, manifested in a world where there is a large gap between different parts of the planet, inequality in terms of sex, age, culture, etc. According to this premise, numerous studies have been carried out in order to analyse the influence of Internet on the youngest, considering them a priority and more vulnerable sector. In this way, we have tried to know both the positive and negative effects that Internet may have, and the uses that are made of it (Livingstone and Helsper, 2010, Yang and Tung, 2007, Ruíz-Corbella and De Juanas, 2013, Ballesteros and Megías, 2015).

In the Spanish panorama and according to the source of the Instituto Nacional de Estadística (National Institute of Statistics) (2017), 84.6% of the population aged 16 to 74 has used Internet in the last three months. 69.0% do so on a daily basis, a percentage that is slightly higher (1.3 points) than last year. 46.5%, of people between 65 and 74 years old use Internet compared to 98.0% of young people between 16 and 24 years old who use it, that is, more than twice the number of older people. Despite these results, as shown by the study conducted by Linne (2015), it is clear that Spanish university students are not addicted to Internet and more specifically to social networks. Other recent research (Martínez, Cabecinhas and Loscertales, 2011) shows that university senior students connect to Internet frequently, daily or between two or three times a week. These seniors emphasize the importance of Internet to be updated, to contact family and friends, for academic use and to consult the press. They consider the network to be easy but they could live without it. That is, it is not essential in their lives as it is for young university student.

While young people are the main drivers of the society of the future, no less attention should be paid to the group of older people and therefore, older university seniors have been included in this research as interest in them worldwide is increasing. In the particular case of Spain, their evolution represents an important percentage not only of the current population but also that of the future.

The proportion of the population aged 65 and over has gone from representing 11.2% in 1981 to being 17.3% twenty years later and to 18.7% in 2015. But, if it is translated into figures, it means that between 1981 and 2015 the elderly population doubled to a little over 200,000 individuals. Between 2050 and 2060, the total population will fall by just over two million inhabitants and the group of people over 65 will only shrink by only 0.1%. In the year 2060 there will be something less than 15 million more, less than double the present, and will represent more than a third of the total Spanish population (35.6%). (Institute for the Elderly and Social Services (IMSERSO, 2017, p.36).

There are many benefits that Internet and the use of ICT can bring to the elderly. The activities that can be carried out are multiple and useful to encourage creativity, practice writing, improve sociability, exercise memory and mind, learn things they have not been able to do before due to lack of time, their profession, etc. (Pavon, 2000).

A recent study (Martínez, Cabecinhas, and Loscertales, 2011), has revealed the main uses and motivations of active seniors to use Internet, as well as the main barriers for those who do not use it. Among the uses that are highlighted is the search for information, academic activity, reading the press and also navigation without any specific purpose. For those who do not use it, it is mainly due to the lack of good reason to do so and it is not because they do not see a limitation in their age or consider it a waste of time among other factors.

1.1. Digital skill. Conceptualization

The European Parliament and the Council on 18 December 2006 put forward a set of recommendations on key competences for lifelong learning at the European level. It seeks to define the new basic qualifications that permanent learning should provide as an essential measure of Europe's response to globalization and the shift towards knowledge-based economies, with people as Europe's main asset.

The concept of competences was decided on linked to the work environment, and refers to all those aspects (capacities, skills, attitudes, etc) that a professional must have to develop their work in an effective way. As a result of this, in 2006, the European Parliament and the Council (2006) published a recommendation identifying eight Key Competences for Lifelong Learning. The development of key skills enables people to develop their innate potentialities and abilities to the fullest in order to be able to function in different contexts throughout their lives. Among them digital competence is highlighted as the basis of the research report that we present which implies the safe and critical use of Information Society Technology (IST) for work, leisure and communication. It is based on the basic principles and skills of ICT: the use of computers to retrieve, evaluate, store, produce, present and exchange information, and communicate and participate in networks through Internet (Ferrari, 2012, Bennett and Maton, 2010).

According to Lankshear and Knobel (2008) what we now understand as digital literacy or competence has evolved over the last decades, from more focused aspects with access to technology, visual or multimedia information. The transformation that has occurred in recent years with regard to literacy or digital competence and access to technology is very important. Digital literacy is the awareness, attitude and ability of people to use digital tools properly to identify, access, manage, integrate, evaluate, analyse and synthesize digital resources, build new knowledge, express themselves through multimedia resources and communicate with others in any specific context of life (Esteve, 2013, Gisbert, Espuny and González, 2011).

At present the vertiginous changes that are happening make an improvement in training necessary with access to it

throughout life so that a series of abilities and skills that enable the individual to adapt to a society of changes; the relationship of the individual to information has changed, so the education sector proposes new ways of fostering a good development for students within the Knowledge Society (Chávez, Cantú and Rodríguez, 2016, González, Espuny and Gisbert, 2012).

Digital competence is understood as the conjunction of what many authors consider ICT competence and informational competence. In the knowledge society it does not make sense to speak only of tools for the storage, access and retrieval of information, but we must also work with the necessary skills and abilities to properly use this information and then transform it into knowledge, with the objective of sharing it. That ultimately is what will help young and old to be skillful and socially competent at any time and in any environment.

1.2. Digital competence in young and old

Changes in society have forced people to carry out a compulsory and necessary process of lifelong learning, as stated in the document on Recommendations of the European Parliament. There is therefore a real need to train both young and old in digital competence throughout life and work. According to Gisbert, Espuny y González (2011, p.76) digital competence, we say that involves the acquisition of knowledge, skills and attitudes that have to do with the elementary use of computer hardware, their operating systems as hardware managers, software as a work tool, off-line communication and of online communication.

At this moment everything is changing, digital competence has become something indispensable to face the challenges of the citizens' daily life, *competence management or treatment of information* (Jaramillo, Hennig and Rincón 2011) is fundamental to advance in today's society as well as being fundamental for the academic and professional development of any student (Gisbert, 2011). The idea of 'digital natives', a generation of young tech-savvy users immersed in digital technologies who have spent their entire lives surrounded by and using video games, digital music players, video cameras, telephones, i-pods, Internet, instant messaging, text messages, multimedia and other tools of the digital era that are an integral part of their lives has gained widespread popularity (Bennett and Maton, 2010; Gallardo, 2012). Recent research has shown flaws in the argument that there is an identifiable generation, or even a single type of highly skilled technology user. Bullen, Morgan and Qayyum (2011) suggest the term digital learners should not be used because today's students do not conform to the stereotype represented in the discourse on digital natives. For the authors it is a social and not a generational issue, and its implications for education still need further in-depth study.

It is necessary to train university students to prepare them for an increasingly complex and globalized world, where the amount of information they will have to manage each day is ever greater and where they must use technological tools that advance and change at a dizzying pace (Gisbert, Espuny and González 2012).

As reported by Abad (2014), the data included in the Indicators of the Digital Agenda 2011 dedicated to digital competence show that while 90% of people between 16 and 24 years old are habitual users of Internet, only 46% of people between 55 and 64 years old are and this proportion decreases to 25% among people between 65 and 74 years old. This segment falls to 20% when it comes to people between 55 and 74 years old with low levels of education. (p.175). This verifies the existence of a generational digital divide, understood as the differences in access and use of ICT in different social environments.

Currently, how this 'digital divide' affects older people in their day to day life has not been analysed in depth. Digital competence 'is not acquired by technological immersion', and it is necessary to learn to learn, but this capacity is socially unequal and, among other aspects, is linked to age. The 'digital divide' in addition to being related to socioeconomic differences is also and considerably linked to age, especially in age groups far removed from digital generations such as people over 60 (Hernand and Phillippi, 2013, p.14). Therefore, working with older people on digital competences must be a priority and an objective to achieve as a fundamental axis in life-long education.

In order to shed light on the situation described and to provide some suggestions on the need to include older people in technology, this study has marked out as its main objective to compare digital competence in knowledge and use of ICT in communication; social and collaborative learning, useful skills for the search and treatment of information, as well as interpersonal skills among university students and active seniors enrolled in university programmes for the elderly of the Open Classroom of Open Training of the University of Granada.

2. Methodology

The main objective of this research is to compare descriptively the digital competence in knowledge and use of ICT in social communication and collaborative learning, for the search and treatment of information, as well as useful interpersonal competences among young and seniors of the University of Granada.

To achieve the proposed objectives, a quantitative methodology was used to quantify and analyse the information to establish later comparisons among students aged between 18-22 years and those between 80-85 years (hereinafter senior students). Through quantitative research, fundamental knowledge is acquired, collecting, analysing and describing the data or phenomena studied through variables and concepts (López-Roldán and Fachelli, 2015).

The research was developed in the 2017-2018 academic year. The participating samples of our study were formed by students of the third year of the Degree in Social Education of the Faculty of Education Sciences of the University of Granada and senior students of the Open Classroom of Open Learning also belonging to the University of Granada. A random and stratified sampling was followed. The total population was composed of 200 people, 100 of the third year of Social Education and 100 of the Open Classroom. In this way, a final sample of $n = 200$ subjects was obtained (119 women and 81 men in total), of whom 61 are women and 39 men of the third year of the Degree in Social Education and 58 women and 42 men of the Open Classroom of Open Learning. We worked with a

significant sample exceeding the necessary subjects of the sample calculated through a confidence interval of 95% and whose results required the participation of at least 81 Students. The choice of this population was mainly because we wanted experienced younger students who after completing three years in the Faculty of Educational Sciences possessed a terminological maturity and a critical attitude to help us solve our research problem. This was the knowledge of the existing differences before digital competence in knowledge and use of ITC in social communication and collaborative learning, competence in using it for the search and treatment of information, as well as the interpersonal competences among young and older people in the University in order to be able to reduce the existing digital gap in senior students. For the collection of information we used a questionnaire of basic digital competences adapting the questionnaire "Digital 2.0 core competencies of university students" COBADI 2013 (Registered trademark: 2970648) on a Likert scale (1 completely ineffective, 2 ineffective, 3 effective, and 4 completely effective) validated by means of expert opinions, where the students and senior students will value, on the one hand, the digital competence in knowledge and use of ICT in social communication and collaborative learning, the use of competences for the search and treatment of information, as well as interpersonal skills.

The validation of the questionnaire was carried out based on the following guidelines:

1. Definition of the objective of the experts' opinions to validate the "Basic Digital Competences" questionnaire.
2. Selection of five relevant experts taking into account the criteria defined above, considering their academic training and professional experience.
3. Evaluation of the experts attending to the relevance, clarity and adequacy of the questionnaire indicators using a spreadsheet.
4. Once the results were obtained, the concordance between judges was calculated and finally some conclusions were drawn up according to the psychometric description of the test.

Once the expert judgment had been made, the questionnaire collected corresponding aspects of the digital basic competences. In a more detailed way, we collected this information in the following table, showing the items that correspond to each sector of ICT knowledge.

Table 1
Digital Basic Competency Questionnaire

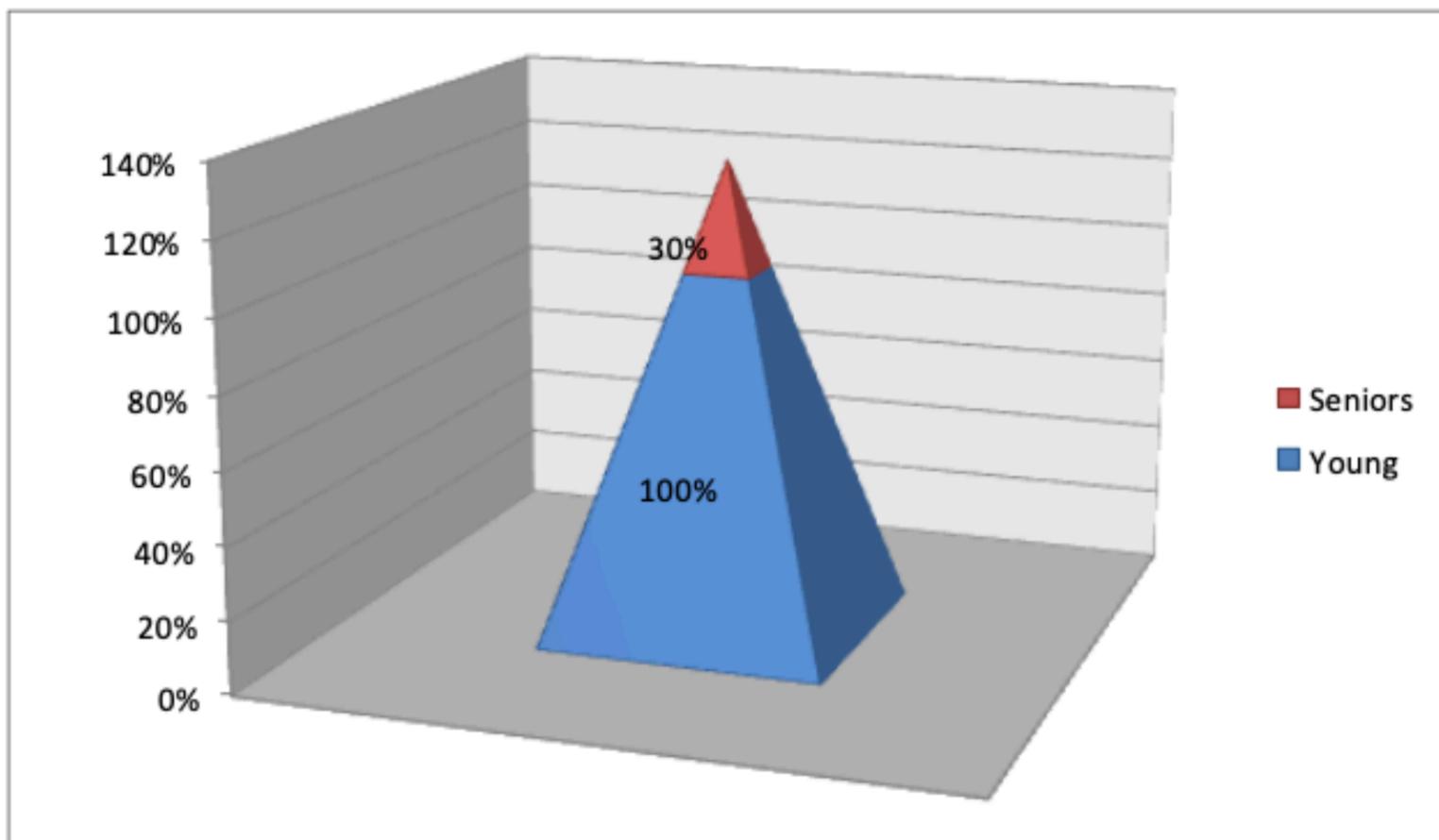
	ITEMS
Consumption of technology	1-5
Digital competence in Knowledge and use of ICT in social communication and collaborative learning	6-17
Competences for the search and treatment of information	18-29
Interpersonal Competentes	30-35

Subsequently, a reliability test was carried out using Cronbach's alpha, obtaining an index of $\alpha = 0.986$, which gives it a high degree of coherence (98.6%) due to its proximity to the unit (Rodríguez and Valldeoriola, 2009).

3. Results

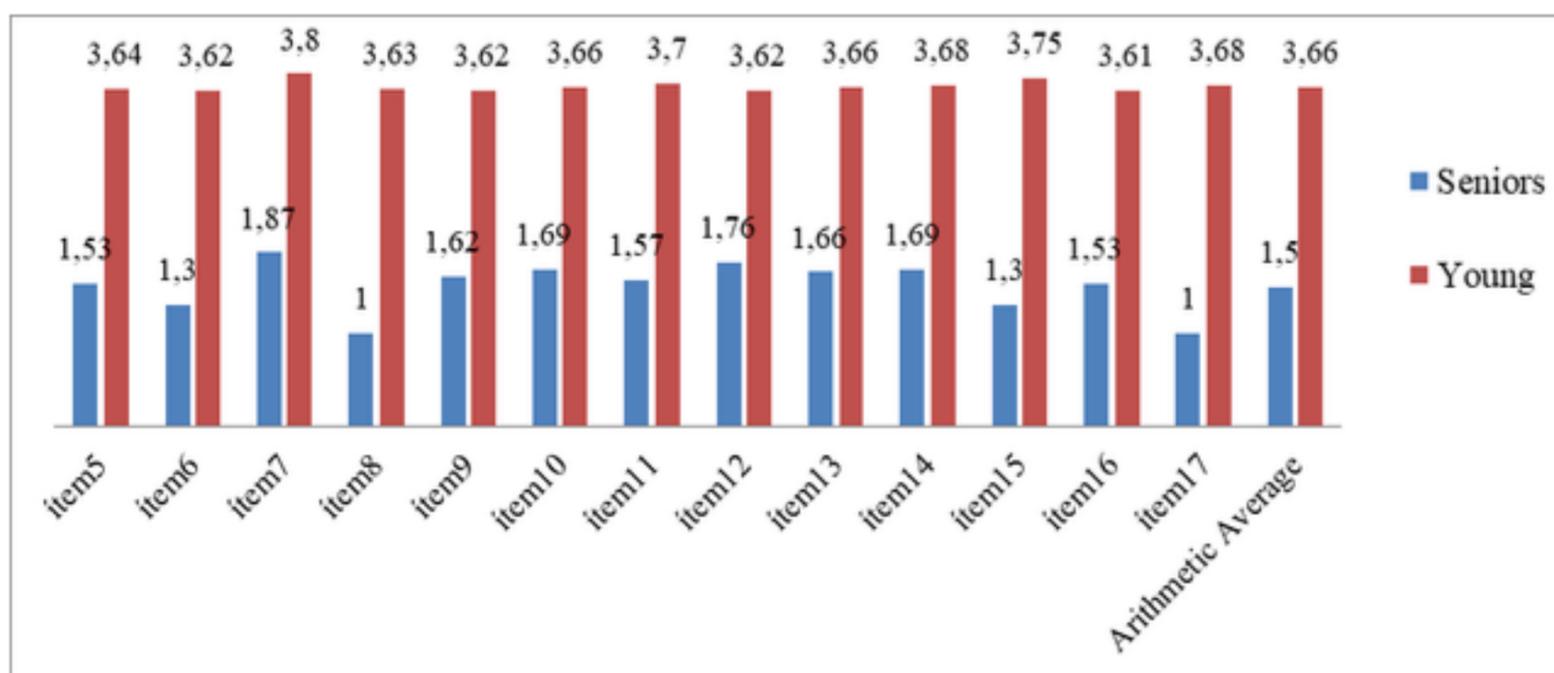
Next we present the results obtained according to each of the dimensions of the questionnaire, taking into account the distinction between students and senior students. First, referring to the consumption of technology, young people obtained a total consumption of 100%, so that young Student have a computer and tablet and have internet both at home and in the faculty, usually connecting both at home and in the university. However, the same thing does not happen with senior students, 30% have technological means and the internet mostly at home, leaving 70% without regular Internet connection and without having a tablet or computer. In Figure 1 we can see the distinction between young and old.

Figure 1
Consumption of technology in young Student-teachers
vs. Consumption of technology in senior Student-teachers



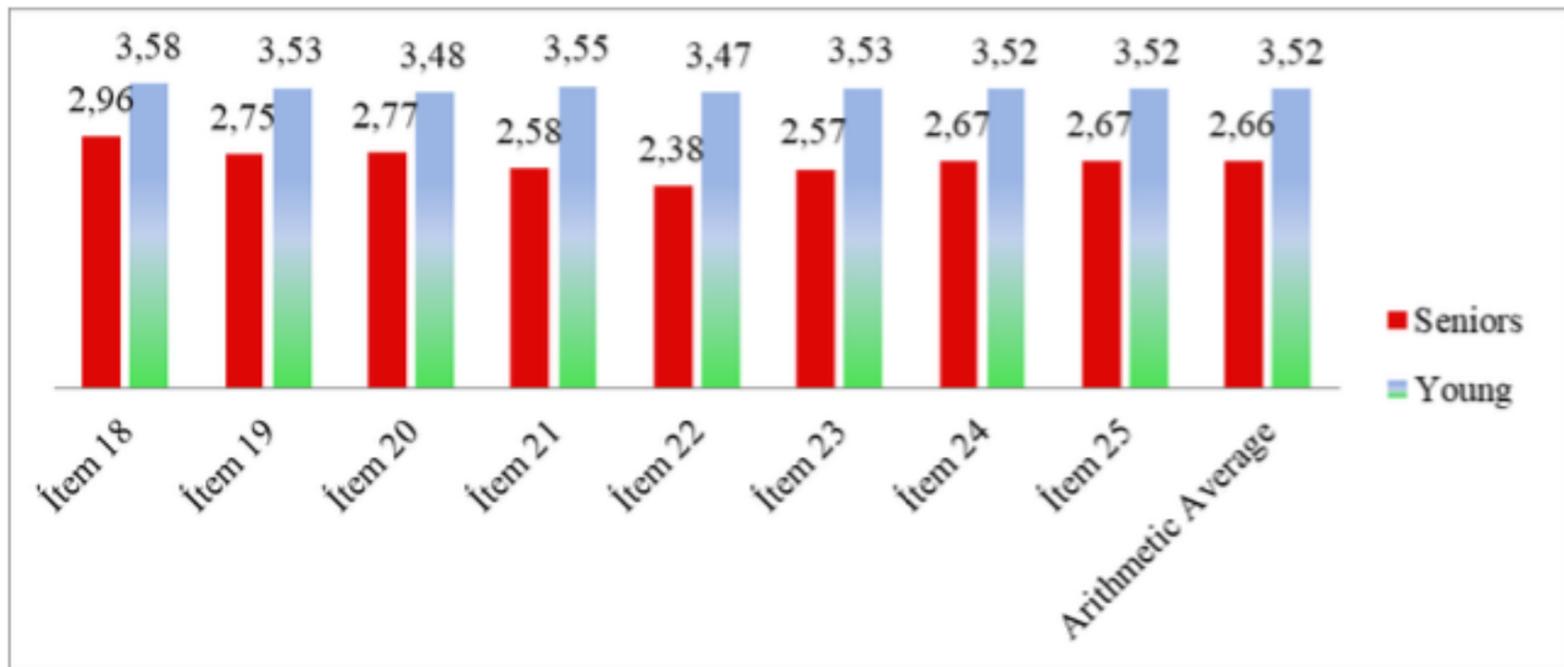
Secondly, in response to digital competence in knowledge and use of ICT in social communication and collaborative learning we have found a total average of 3.66 out of 4 in primary school student and 1.50 out of 4 in senior students, being item 7 (use of instant messaging as the main communication tool with other people) to which a high score is awarded in both studies. However, young people gave a lower score to item 16, referring to the use of social markers while senior students gave a lower score to item 8 (I can communicate through social networks) and to 17 (ability to use education platforms). So we can say that young people have a quite high digital competence in the use and knowledge of ICT, and senior students have it to a lesser extent.

Figure 2
Digital competence in knowledge and use of ICT in social communication and collaborative learning. Senior students compared with Younger students.



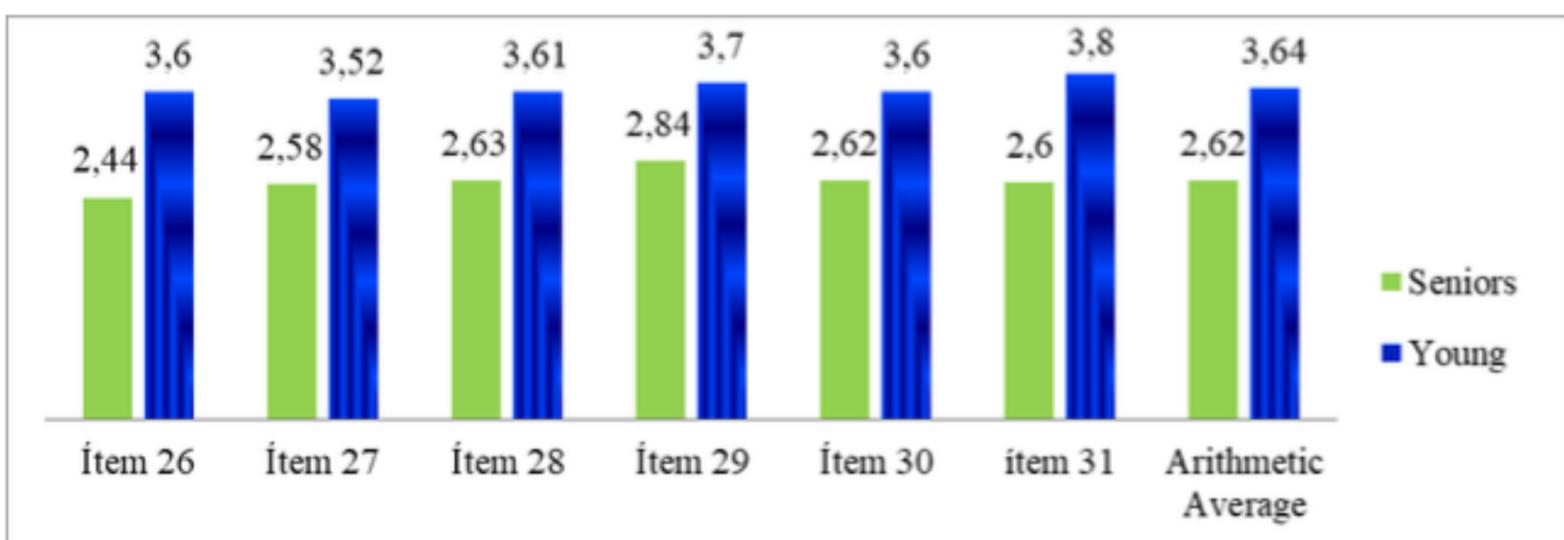
In third place, referring to the competences for the search and treatment of the information, there is a total average of 3.52 out of 4 for the Students of Primary Education and 2.66 out of 4 for older senior students. In both groups, item 18 (surfing the internet with different navigators) is the one that scored the most points. However, they give a lower score to item 22 referring to the use of images through social software applications. So we can say that both groups have an adequate competence, although in the case of senior students they should work harder.

Figure 3
Competenc in the search and treatment of information. Seniors compared to young



Fourth, based on interpersonal competences, we obtained a total average of 3.64 out of 4 for Primary Education Students and 2.62 out of 4 for senior students, we obtained a total average of 3.64 out of 4 for Primary Education Students and 2.62 out of 4 for senior students, In young Students, item 31 (talking with a partner to solve the problem together) is the one that scored the most points, the lowest score being given to item 27 (exposing doubts in different platforms). On the other hand, senior students gave their highest score to item 29, which refers to reflecting on the doubts they have before discussing them with others. However, they give their lowest score to item 26, consulting about their doubts through institutional mail. So while both young and seniors have adequate interpersonal competence, seniors need to work even harder. These statistics are shown in Figure 4.

Figure 4
Interpersonal competences.
Seniors compared to Young



4. Conclusions

The development of this work shows the importance of knowing the differences between digital competence in knowledge and use of ICT in social communication and collaborative learning, skills useful for the search and treatment of information, as well as interpersonal competences among young and old at the University of Granada. Digital literacy in senior students enables them to be included in today's society and should be promoted to improve their quality of life during the aging process, helping them to have a more active and participative social life (Culver and Jacobson, 2012).

The preceding pages show how essential it is to reduce the digital divide for senior students, being the essence that has characterized this research. In this sense we will proceed to draw some conclusions, which follow the lines of this study.

Referring to the use of technology, young people have a total consumption of 100%, so young students have internet both at home and in the faculty, usually connecting in both spaces. However, senior students do not do the same with only 30% availability and with much less habitual use of the Internet connection.

Digital competence in knowledge and use of ICT in social communication and collaborative learning obtains a total average of 3.66 out of 4 in primary school student-teachers and 1.50 out of 4 in seniors; thus young people have quite a high digital competence in the use and knowledge of ICT, while seniors possess it to a much lesser extent.

Regarding the competences for the search and treatment of information, there was a total average of 3.52 out of 4 in Primary Education Student-teachers and 2.66 out of 4 in seniors. Both groups have adequate skills, although, again, seniors should work even harder.

Finally, considering interpersonal competences, primary school students have a total average of 3.64 out of 4 and senior students 2.62 out of 4, so both younger and older people have adequate interpersonal skills, although in the case of older people, more work must be done.

In response to the four broad categories of analysis, in general we perceive greater digital competence in young people than in older ones, so we must still work for the inclusion of older people in the use of Information and Communication Technologies within and outside the university. To do this, we can implement intergenerational

educational projects, so that young people can transmit this knowledge to senior students, creating an educational link between different generations. Ferrés, Aguaded and García (2012) state that the divide between young and old in university studies is extreme, so it seems that neither the level of education nor age guarantees digital competence.

As members of society, we have a shared responsibility to promote senior students to use the Internet, making the most of the network and extending the functions and areas for those who use it. For those who do not use it yet, society should provide them with the necessary training and enough motivation to start using it (Martínez, Cabecinhas, and Loscertales, 2011).

The current education system should contribute to the elimination of the generational level between young and old in terms of digital competence. Promoting lifelong learning and facilitating access to technology for the elderly to be able to use it better and to give them greater access should be the goal.

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