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Digital Literacy, Technology Education and Lifelong Learning for Elderly: Towards Policies for a Digital Social Innovation Welfare

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Digital Literacy, Technology Education and Lifelong Learning for Elderly: Towards Policies for a Digital Social Innovation Welfare

Mariangela D'Ambrosio, Danilo Boriati

Abstract: Information and communication technologies (ICTs or TIC) represent not only an extension of humans but pervasive environments in which all individuals move. However, even today, there is a gap between users in relation to age: the over-65s in Europe and Italy, for example, present difficulties in the use of digital tools and therefore strong disparities in relation to access to Internet and related resources and opportunities. This means that the elderly are in serious risk to social exclusion and marginalization in the knowledge society, in which technological artifacts are instead crucial for social inclusion. Therefore, the essay aims to reflect on these issues through a sociological lens, with references to digital literacy and media education as possible alternatives, and social-relational interventions to reduce digital disengagement and the consequent digital divide. Thus, the paper proposes the intergenerational digital social innovation perspective that, by activating bottom-up digital-oriented welfare policies, promotes learning in old age. In fact, this is a determining factor in the design of educational spaces co-constructed together with the older people.

Keywords: Digital literacy, active ageing, social integration, digital social innovation welfare

1. Background

In the late-modern society¹ (Giddens, 1994; 2000; Bauman, 1999a; Beck, 2000) – highly permeated, especially in the aftermath of the Covid-19 pandemic and the Russian-Ukrainian conflict, by uncertainties – the average life span has lengthened due to vastly improved health conditions compared to the recent past. Such increase in longevity «not only represents an achievement of modern Western societies but, at the same time, is a source of “new problems”» (Cersosimo, 2014, p. 201). In this sense, the rise of longevity, seen as a problem, contrasts with the fact that the collective imagination still tends to associate the elderly with the idea of disengagement, in a progressive withdrawal from the social life. However, in this contribution we want to emphasize, first of all, the importance of the involvement of the elderly population within contemporary social systems, stressing the need for an engagement that considers the over 65 people as actors capable to continue to actively participate in the processes of social interaction (Lazarini, 1990), attributing a positive meanings and values to the extension of life span.

In this framework, trying to go beyond the studies conducted on older people's use of technology², this essay focuses on the necessity to promote the use of information and communication technologies (ICTs or TIC) by the elderly, highlighting not only how technology education is a decisive factor in combating the digital divide, but also how reducing this divide can be a driving factor in planning new digitally oriented towards social policies for welfare³.

Therefore, the essay emphasizes the importance of lifelong learning strategies for digital technology in relation to the growing demand for social integration and capability (Sen, 1993) of personal skills for a significant portion of the elderly population, in a perspective of active aging (Walker, 2011) and social inclusion that has positive repercussions at the micro, meso and macro levels.

¹ We opted for the meaning of late modernity, understanding contemporary society as the continuation (or development) of modernity rather than an element of the later era known as postmodernity.

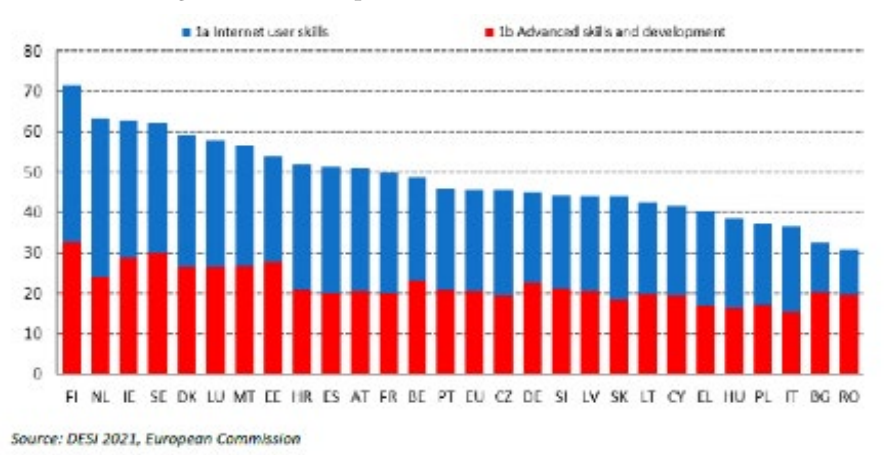
² There are many studies that have been involved in analyzing the differences between older people using digital technologies (Hargittai, 2022; Van Dijk, 2005; Dutton, Blank & Groselj, 2013; Blank & Groselj, 2014). Some research, for example, emphasizes differences in concrete web use by older people by correlating them with social context and psychological characteristics (Van Deursen & Helsper, 2015a); others with the motivational drive older people have in using technologies (Milligan & Passey, 2011; Friemel, 2016).

³ The paper, starting with a short literature review, does not propose a social research conducted by the authors but wants to analyze data already present in international statistical archives.

2. For a statistical overview of the digital divide in Europe and Italy: the relationship between the elderly and technology

According to *The Digital Economy and Society Index (DESI)* report, in Europe in 2021 the 87% of people aged between 16 and 74 use regularly Internet (as of 2021) but only 54% possess basic digital skills⁴, with a geographical difference: Northern European countries are more skilled than Romania and Bulgaria and the Mediterranean context. Italy ranks 25th among the 28 European Member States.

Fig. 1 - Human Capital Dimension (score 0-100), 2022.



Source: DESI, European Commission (2021).

Not only geographic location (with the urban context) as a variable affecting the level of digital skills possessed, but also the socio-demographic ones are crucial, with the gender, the education received, the job position (and perceived income) and the social role held. In fact, «only 35% of people aged between 55 and 74, as well as 29% of retired and inactive people, have basic digital skills compared to 71% of young adults (16-24 years old) and 79% of highly educated individuals» (ibid., p. 23). While the figure is even lower if we count people aged 65-74: 25% of them know how to use digital tools properly (ibid., p. 24). Eurostat data (2021) on the Internet use⁵ also prove this.

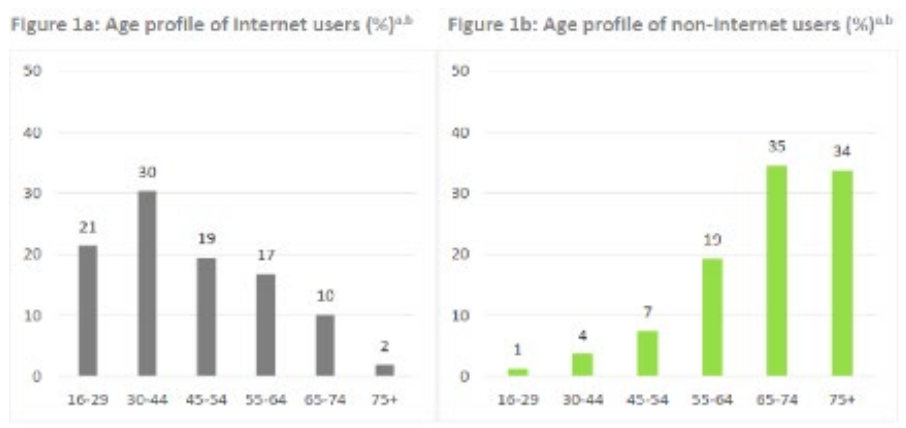
The digital divide between generations is significant and increases with age and among Internet users; therefore, the frequency of Internet use de-

⁴ European Commission (2022), Digital Economy and Society Index (DESI) 2022, p. 14. Link to the report: <https://digital-strategy.ec.europa.eu/en/policies/desi> (accessed 28/11/2022).

⁵ See: <https://digital-agenda-data.eu/charts/analyse-one-indicator-and-compare-break-downs> (accessed 28/11/2022). But see also the data reported by Istat (2019).

creases with age⁶. The digital divide is the digital gap between those who have access to the Internet and those who do not; it is an expression of difficult social participation and, therefore, a tangible sign of social exclusion.

Fig. 2 - Age profile of internet users (left) and non-internet users (right) (%).
Fra Fundamental Rights Survey, 2019.



Source: FRA (2019).

The underlying reasons include the awareness of not having the necessary digital skills: 49% between the ages of 55 and 64, 52% in the 65-74 age group (FRA, 2019, p. 13), with a lack of connection to the Internet and curiosity about digital.

In Italy, in particular, people with high digital skills are more present at 25% in the North against 23.5% in the Centre and 17.2% in the South (Istat, 2021)⁷ while about 14 million users have no access to Internet or can access but discontinuously. There are 2.3 million Italian households not connected to the Internet in any way, around 10% of the total; while another 30%, 7.2 million households, connect only via smartphone (Auditel-Censis, 2021)⁸. Already in 2019, there was «a strong digital divide among households to be attributed mainly to generational and cultural factors» (Istat, 2019, p. 3). Almost all households with at least one minor had a broadband connection (95.1%); among households composed exclusively of over 65, this share dropped to 34% (Ibid.).

⁶ FRA, Selected findings on age and digitalization from FRA's Fundamental Rights Survey, 2020.

⁷ Available at: <https://www4.istat.it/it/benessere-e-sostenibilit%C3%A0/misure-del-benessere/le-12-dimensioni-del-benessere/istruzione-e-formazione> (accessed 01/12/2022).

⁸ Available at: https://www.censis.it/sites/default/files/downloads/Rapporto%20integrale_0.pdf (accessed 01/12/2022)

Possessing adequate digital skills (Dig.Comp2.1 - understood not only as the use of devices with familiarity but as a critical, inclusive, and participative approach to social life⁹) is a fundamental and important tool, crucial for the sphere of possibilities, of choices in professional-occupational placement and of relational inclusion.

In a demographic context that will see Italy, in 2050, composed of 50% of over-55s out of the total population (Istat, 2022)¹⁰, “onlife” life will, therefore, be increasingly acted out between the real and the virtual, in a digital ecosystem as a pragmatic metaphor for social inclusion.

Indeed, digital poverty is objectively measurable in social terms whose effects are concrete and vary from short to long term, expressing the inability to carry out microeconomic, financial, money management and financial planning actions, as well as the impossibility to stay in touch with loved ones and the extended family network, impacting on the social bonding that is maintained through digital technologies¹¹.

In fact, it should be also emphasized that in Italy the pandemic emergency (especially in the two lockdown periods) has produced in many elderly people a willingness to learn new digital skills: a study by the University of Milan Bicocca entitled *Aging in a Networked Society* according to which: 27% of respondents learnt to make video calls, declaring an increase in use for other social media (instant messaging services such as WhatsApp; social networks such as Facebook and sending e-mails)¹². It is remarkable the reading advanced by Olphert & Damodaran (2013) who speak more appropriately of *Digital Disengagement* when participants «made an internal decision to stop the activity or when factors in the participants’ external environment caused them to cease being engaged» (ibid., p. 566). If action is not taken through digital literacy, from an integrated perspective, the right to full social participation, in other words, is undermined (Sala, Gaia & Cerati, 2022). Being technologically competent means not only to have the digital tools but to possess the ability to manage them, in a critical and careful manner, also

⁹ DigComp 2.1. Available at: https://www.agid.gov.it/sites/default/files/repository_files/digcomp2-1_ita.pdf (accessed 01/12/2022).

¹⁰ See: <https://www.istat.it/it/archivio/274898> (accessed 01/12/2022).

¹¹ See, on the other hand, precisely the strategic role of digital technologies in the pandemic period, in particular lockdown, between generations and between actors in the family networks.

¹² Study reported in: <https://welforum.it/il-punto/emergenza-coronavirus-tempi-di-precarita/anziani-e-reti-di-relazioni-durante-la-pandemia/> (accessed 02/12/2022). See the website dedicated to the project: <https://aginginanetworkedsociety.wordpress.com/> (accessed 02/12/2022). In addition, «even among the elderly (65 years and over) something is moving, as the use of the internet rises significantly (from 42.0% to 51.4%) and social media users increase from 36.5% to 47.7%. The need to maintain contact, at least virtually, with loved ones in the period of the most rigid isolation must have played a not insignificant role in the confidence acquired with the net by the over-65s» (Censis, 2022, p. 4).

because we must consider the criminal connotations, with specific reference to malfeasance online, financial frauds (and other frauds)¹³. It is therefore crucial to be able to recognize risks and to use protection tools by developing digital skills through social activities close to older people (Zhao *et al.*, 2022).

3. Seniors and ICTs: technology education as a factor in addressing the digital divide

In the cultural imagination, the condition of the elderly is related to the idea of a general process of decay, resulting from a progressive loss of both psychophysical, social, and productive functions. The most frequently traits attributed to the elderly are weakness and disengagement, starting from the assumption that the dichotomy between adulthood and old age is anchored in the individual's exit from the productive system. Actually, this is a typically stereotypical modern image, which can be attributed to the development of industrial society and its guiding values (Cesa-Bianchi, 2003), but it has become limited in late-modern society, with its economy based mainly on service activities. Indeed, the lengthening lifespan is redrawing the structure and demographic profile of contemporary societies, with important consequences for the economic and social system.

In particular, the over-65s today represent a heterogeneous segment of the population that, contrary to the stereotypical image just mentioned, increasingly shows a willingness to continue to learn and engage in staying active. In fact, some surveys show that older people have the desire to learn knowledge and skills that can help them to improve their quality of life, to engage their leisure time constructively, and to consider themselves capable of contributing to their communities (Cody *et al.*, 1999; White *et al.*, 1999).

In this framework, a key role is played by new technologies, which reshape the older people's lifestyle. When technologies are used by competent people, they actually improve their quality of life, promoting their active and responsible inclusion, helping them to remain independent, to age actively, and thus to maintain their health, especially when these evolutionary processes are the result of a re-engineering of care and assistance models (Grignoli & Boriati, 2019).

The new information and communication technologies – understood as a continuation of one's subjectivity – help, first and foremost, the elderly to cultivate their social relations, both as regards family and friendship, and to have what Risi & Olivero (2007) call «relational benefits», i.e. all those benefits that are linked to the inclusion of the person in a set of ties that can be

¹³ See, in fact, the phenomenon of online grooming of lonely/loving elderly people. Scams to extort money and goods by pretending to be interested (here one must also consider identity theft against third parties).

established through the web. Moreover, these benefits can also be linked to that set of advantages that Maguire (1989) identifies for social networks *tout court*: support for social identity, which in the elderly becomes important in stimulating the construction and reconstruction of less rigid and stereotyped social identities, a source of feedback, which in communication mediated by the new media other participants provide based on the conversations taking place, independently of the physical knowledge of the subject; a flow of information and informal knowledge, advice and word of mouth among the people connected; and lastly, emotional support. Finally, among the benefits that the elderly claim to perceive from the use of the Internet, are those related to better access to information and services, especially those related to health (Carlo, 2022), the creation of new opportunities for entertainment and leisure, and the possibility of new friendships and connection with peers and relatives who cannot be reached personally.

Information and communication technologies have their undoubted advantages, and, in our opinion, the devices used by older people can exploit their potential. Conversely, those who do not possess the skills to use them in a conscious and active way will be further exposed to social exclusion. This is even more true after the Covid-19 pandemic, a time when societies registered an increasing trend of ICTs use of an ageing population through the dissemination and active use of new technologies (Csesznek, Cersosimo & Landolfi, 2020).

In our view, it is important to emphasize that one should not limit oneself to providing the elderly with the technological tools with which society could improve health, personal skills, social integration, and active ageing, but one must imagine and design, otherwise that there will be a digital divide and an increasingly exclusionary system. We must think of some sort of technological pedagogy/education that enables the elderly individual to be an active part of the social system in which they live. Based on what Emile Durkheim (1922) stated, in fact, education is a process through which the individual adapts to society; on the other hand, the ultimate goal of education is more precisely, in the Durkheimian vision, the stability and continuity of society itself.

Within this framework, and with a view to democratic access to the use of technologies, there have been many sociological reflections that have defined the characteristics of the digital divide to try to break down the obstacles and to enhance and to support the abilities of each individual. The first theoretical reflections characterized the digital divide essentially in terms of access to information and communication technologies, emphasizing the exclusion of large portions of the population from the opportunities offered by virtual reality (Castells, 1996; Bauman, 1999b; Norris, 2001). Subsequent studies have focused on the relationship between direct access to digital in-

formation and communication infrastructures and their actual use (Hargittai, 2002; Bentivegna, 2009; Van Deursen & Van Dijk, 2011)¹⁴. Finally, more recently, other and new forms of digital divide have been traced (Gremigni, 2018); among them, one that has been referred to as the “third level” and which focuses on the importance of the individual’s ability to transform network use into useful resources in everyday life¹⁵.

Precisely related to the third level of the digital divide is all that kind of sociological literature that focuses on the skepticism of the elderly; skepticism that should prevent the over-65s from enjoying the economic, social and health benefits that the application of information and communication technologies would bring to them (Czaja *et al.*, 2017; Melchior, 2022). It should be considered, however, that the socialization of the elderly with digital technologies is also conditioned by relational network (Hoffman & Roos, 2022) and income availability (Choi & Dinitto, 2013): variables related to family/parental/friendly support networks may contribute, each to their own extent, along with income availability, to the digital divide for the elderly.

In order to counter this level of digital divide, analyzed in the following section from a statistical point of view, today more and more education systems and lifelong learning processes are being introduced with the aim of enabling the needs and requirements of an ageing population to meet those of an ever-changing world market and economy. Initiatives linked to lifelong learning processes are to be considered with an approach based on the so-called “double helix” (Malitza & Gheorghiu, 2006), which considers the learning and work system as interrelated and inseparable.

The European debate on lifelong learning becomes very crucial in what is now called the knowledge society¹⁶, in which the ability to produce and exchange knowledge through technological artifacts is seen as one of the determining factors of social inclusion. Lifelong learning¹⁷ is thus becoming a crucial process in the contemporary social configuration all over the world¹⁸. In examining the Italian panorama, in particular, the reference is not

¹⁴ Regarding the two descriptions of the digital divide, the first is referred to as the “social digital divide” and concerns the lack of access to digital technologies due to a lack of infrastructure (Millward, 2003), while the second is referred to as the “grey digital divide” and concerns the lack of interest and personal motivation in using technology (Anderson, 2008).

¹⁵ The so-called “third level of digital divide”, as precisely stated by Van Deursen and Helsper, «relate to gaps in individuals’ capacity to translate [...] Internet access and use into favorable offline outcomes» (Van Deursen & Helsper, 2005b, p. 30).

¹⁶ By “knowledge society” we mean the kind of society that considers knowledge as a fundamental element for its development and progress.

¹⁷ In this regard, the European Community Commission, in order to facilitate the transition to a knowledge-based society, supports the implementation of concrete actions in terms of lifelong education and training strategies.

¹⁸ Different studies (Drew, 1997; Diggs, 2008a; Diggs, 2008b; Quadagno, 1999; Lemon,

only to policies for the education of the elderly but, more generally, to adult education. Recent national legislative guidelines seem, in fact, to embrace the needs of lifelong learning and outline a perspective oriented towards the establishment of an integrated adult education system, particularly for those over 65 years of age.

From this perspective, the design of training activities should be prioritized because it can offer, to the older people, the possibility of specific learning that will enable them to continue their lives as actively as possible. In this regard, it is interesting to note that the elderly themselves indicated, among the best methods for obtaining the skills and abilities necessary for the capacity use of new media, that of attending a specially created learning course (Risi & Olivero, 2007). This data is significant if read in the perspective of a design and consequent promotion of *ad hoc* courses needed to foster the digital literacy of the elderly and fight the digital divide, both in Europe and in Italy.

4. To conclude: proposals for action to reduce the digital divide and social exclusion of the elderly

Working to reduce marginalization and social isolation of the elderly with particular attention to the technology and the use of digital media must be a real social priority in our view.

In fact, technologies and new technological devices represent a real opportunity to improve the quality of life, especially for elderly people who live in uncomfortable situations, who have a pathology or who experience a disability condition (Lusso, 2000; Capolla, 2011; Delello & McWhorter, 2017). The risk, otherwise, is to cause growing and further inequalities, leaving behind those who are already fragile, in a double social exclusion that affects overall well-being. As also argued by Özsungur, «Achieving well-being by increasing the satisfaction of life of elderly individuals and improving their quality of life depends on revealing the association between mobile internet applications that can be adapted to assistive technology and successful ageing» (Özsungur, 2022, p. 79).

On the other hand, the pandemic period (Armitage & Nellums, 2020) has clearly brought to light the “new” needs of the elderly population, which needs continuous, higher cultural education, enabling it to develop a greater aptitude for interacting with both the local area and technological products (Risi, 2009), which are now essential in terms of social interaction.

Bengston & Peterson, 1972) also shows that learning activities «at the third age can be solutions to achieve “successful aging”» (Bodi, 2018, p. 78).

The discussion, in our view, is about increasing learning opportunities in later life by designing co-construction learning spaces of knowledge. It is also a matter of finding new social solutions towards emerging problems: it is the social innovation as «new solutions (products, services, models, markets, processes, etc.) that simultaneously meet a social need (more effectively than existing solutions) and lead to new or improved capabilities and relationships and better use of assets and resources» (Caulier-Grice *et al.*, 2012, p. 18), which integrates, or rather must integrate, with digital.

These are needs that require concrete answers, where digital literacy as a relational process remains central. Digital literacy is to be understood precisely as the ability to use technology and to surf the Internet in a competent and critical, reflective way. It is the ability to participate actively in the increasingly digitized and connected social world, a tool that allows each person to maintain social ties, to build new relationships¹⁹ (Coppola & Zanazzi, 2021) towards a social progress that can take place precisely thanks to education and training (Durkheim, 1922).

The implement of accompanying and supporting paths, for the development of digital skills, is a necessary action because education, from a sociological point of view but not only, is perceived as a means to mitigate social inequalities, a place where individuals can develop new skills and competences, in mutual confrontation and trust. Furthermore it is necessary to mediate procedures and uses of the digital which are often perceived as difficult and complex (Leonardi, *et al.*, 2008), in the fear of the impossibility of controlling one's own online data (Hope, Schwaba & Piper, 2014), even though it is equally true that older people use technology a great deal in their daily lives (Kanakaris & Pavlis-Korres, 2021)²⁰. In this regard it is to be considered the so-called wearable technology, the set of digital and network-connected technological objects (for examples: smart-watches) that can be worn²¹.

Through digital pathways designed for the over-65s it will be possible, in our opinion, to make the real engine of lifelong learning processes through which to enhance the human and social capital of the elderly. It is through a very pragmatic educational relationship with digital devices that the capability model (Sen, 1979; Nussbaum, 2000) can really be triggered because «an individual's set of capabilities reflects his or her freedom to lead different kinds of lives» (Sen, 1999, p. 100) and because it is necessary to work for a minimum level where everyone is capable of evolving (Nussbaum, 2000). An approach, applied to intergenerational learning (Baschiera, 2013), that can develop an empowerment that should not be individual but purely social,

¹⁹ On the topic of "family-bonding" see, critically, the work of P. Aroldi (2015; 2018).

²⁰ On this topic, see also the work of Roupa *et al.* (2010). See also, on the topic of digitization in the care of older people, Nikou *et al.* (2020).

²¹ There is much research on the subject. Among them, see the article by Moore *et al.* (2021).

through which people, but also communities, gain competence over their lives in terms of ameliorative change and active citizenship.

Operating in terms of specific projects for the elderly population precisely it means: creating *ad hoc* «Age & Media Education» paths (Rivoltella, 2017a; 2017b), exploiting intergenerational solidarity also starting from everyday actions. It is a matter of a bottom-up actions, in other words, welfare policies towards the digital, where the possession of digital skills means being included in a social system that is increasingly “onlife” and connected²². To create, therefore, pathways that give basic and up-to-date digital skills, with a view towards a conscious and critical use of the technological medium, but also to ensure that it is an active accompaniment, mitigated by the socio-educational and family relationships, as well as institutional²³.

Today, more than ever, it is necessary, in our view, to plan and implement new social policies in the dimension of digital literacy and education as well as the definition of new training and educational trajectories that, centered on lifelong learning, enable the elderly people to be an active part of a world that is increasingly digitized and interconnected. Moreover, several studies²⁴ emphasize the benefits of a society in which everyone, including the older generations, knows how to use digital resources to their advantage.

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²² On the future vision, please refer to the work of Dhanya Pramod (2022).

²³ On this subject see Margherita Villa’s report (2021) on active ageing policies in the Italian Department for Digital Transformation of the Presidency of the Council of Ministers.

²⁴ As examples only, see the essays by Gil & Amaro (2010) and Helsper, van Deursen & Eynon (2015).

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