

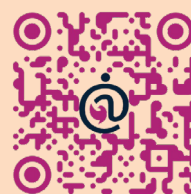


The St@ndbyMe project Booklet

On human rights, digital rights,
and the welfare of older persons.

St@ndbyMe

PROJECT



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Forward

This publication marks the conclusion of our three-year journey in the St@ndbyMe project, where we explored the impact of digitalization on the care and social welfare of older persons. This version is a refined adaptation of the text available in our MOOC courses, which you can access free of charge here (<https://adulteduc.gr/e-learning/course/view.php?id=3>). It is intended for anyone interested in human rights, digital rights, and the well-being of older persons.

In today's digital world, we emphasize the necessity of digital literacy, the right to secure equitable access to digital devices and services, the right to education in using digital tools, and the importance of preserving the right to remain offline. As essential services — such as healthcare, banking, and social interactions — move increasingly online, difficulties in adapting to new technologies can lead to frustration and social isolation.

By fostering inclusive discussions among professionals, caregivers, policymakers, volunteers, and older adults, we can strike a balance between promoting digital adaptation and respecting individual choices. We hope you find this publication a valuable resource on this journey.

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Digital transformations and the implications for your work with older persons

Chapter 1

Digital Transformations in Modern Societies

How did we get here?

Do you remember what life was like before smartphones? For some of us, this wasn't that long ago! Digitalization has profoundly transformed our lives in a very short time. From how we communicate with loved ones to how we work, learn, and access services, digital tools have reshaped nearly every aspect of daily existence. Instant messaging, video calls, and social media have replaced traditional communication methods, allowing us to connect across vast distances. In the workplace, automation, cloud-based systems, and remote work have revolutionized industries, improving productivity and flexibility. Education and healthcare have also been transformed, with e-learning platforms and telemedicine making services more accessible. With the rise of the Internet and digital platforms, tasks that once required physical presence, such as shopping, banking, and even socializing, can now be done virtually from anywhere.

Digital transformation is a term that has been used to describe the processes of adoption and implementation of digital technologies to create new or modify existing products, services and operations into a digital format (Vial, 2019).

The transition from an analogue to a digitally transformed society happened in a different pace for different countries and has been driven by several key developments over the past few decades (DiMaggio & Hargittai, 2001). The development of early computers began in the 1940s and 1950s. Machines like the ENIAC and UNIVAC were created during this time, and primarily used for military and scientific calculations. These computers were massive, costly, and far beyond the reach of the general public. Then, in 1971, Intel's invention of the microprocessor changed everything. This innovation made it possible to create smaller and more affordable personal computers. The release of the Apple II in 1977 and the IBM PC in 1981 brought computing into homes and offices, setting the stage for the digital revolution.

By the 1980s and 1990s, the Internet began to grow rapidly. Initially developed in the late 1960s, the Internet expanded with the creation of the Domain Name System (DNS) in 1984 and the World Wide Web in 1989. These developments have made the Internet much more user-friendly and accessible for sharing information and for communication. The introduction of the Mosaic web browser in 1993 played a key role in bringing the Internet to the public, leading to an explosion in Internet usage by the late 1990s.

The early 2000s saw the rise of mobile technology, with mobile phones becoming more common. Smartphones blend the power of computers with mobile communication, allowing people to access the Internet on the go. The growth of mobile apps and cloud services further integrated digital tools

into everyday life. Various platforms offered a wide range of applications for everything from social networking to productivity and entertainment.

The 2020s were marked by the COVID-19 pandemic, which greatly accelerated the adoption of digital technologies. With lockdowns and social distancing measures in place, people turned to remote work, online education, and digital health services. This rapid shift underscored the importance of digital tools in keeping the world connected during an unprecedented global crisis.

Europe Fit for the Digital Era

The European Union has unveiled an ambitious plan to ensure that Europe thrives in the digital age. Known as the “Europe Fit for the Digital Era” strategy (European Commission 2028), this comprehensive vision is designed to position Europe as a global leader in digital transformation. A key component of this plan is the digital transformation of businesses. The EU aims to help companies, especially small and medium-sized enterprises (SMEs), adopt cutting-edge technologies like artificial intelligence, blockchain, and other innovations that can drive productivity and growth, keeping them competitive in an ever-evolving global market.

Another essential part of the strategy focuses on digital skills and education. The EU is committed to promoting digital literacy across all segments of the population, ensuring that everyone, regardless of age or background, can participate in the digital economy. By integrating digital skills into educational curricula and vocational training programs, the EU seeks to prepare its citizens for the jobs and opportunities of the future.

Digital infrastructure is also a major priority. To ensure robust digital connectivity, the EU plans to invest heavily in high-speed Internet and 5G networks across the continent. Alongside this, strengthening cybersecurity measures is critical to protect both the digital infrastructure and the data that flows through it. The strategy also envisions a future where public services are digital-first (OECD, 2018). The EU is working to make these services more accessible and efficient by implementing digital identification and e-government solutions which will streamline interactions between citizens and public authorities.

In terms of regulation and data protection, the EU has made it clear that promoting innovation must go hand-in-hand with protecting citizens’ rights. The General Data Protection Regulation (GDPR) is a cornerstone of this effort, ensuring that individual privacy is safeguarded in the digital age. Ethical standards, particularly around the use of AI and data processing, are also emphasized to promote responsible and trustworthy innovation.

Sustainability is another key element of the plan. The EU recognizes the potential for digital technologies to contribute to its sustainability goals by promoting green digital solutions and reducing carbon footprints. Thus, the Europe Fit for the Digital Era strategy goes hand-in-hand with the green transformation strategies that aim to harness technology to build a more sustainable and environmentally friendly future (European Commission, 2020).

The dark side of the “digital” moon

Digital transformations brought our societies and our everyday lives to become increasingly dependent on digital devices and the Internet. To date, we are talking about digital devices as a necessity that makes life almost “stand still” when they malfunction. Have you ever noticed the level of panic today when the Internet or your Wi-Fi does not work? Do you remember the CrowdStrike glitch in 2024 that affected 8.5 million computers globally, with flights unable to take off or land, card payments freezing, and medical operations canceled? It seems that it takes a software update error to cause chaos nowadays. If nothing else, the CrowdStrike glitch (Euronews, 2024) highlighted the scale of dependency we have on technology, as well as the devastating and disruptive impact that digital malfunctions have on our lives. One may wonder, have we become “analogue” intolerant?

The digital era also brought a new form of illiteracy, namely that of digital illiteracy. Most of us are competent users of most digital devices, such as computers, smartphones, and tablets.

Digital literacy is described as the individual ability to find, evaluate, and communicate information using digital media or platforms. To be digitally literate requires technical abilities in using and handling digital devices with the goal of creating, evaluating, and sharing information (UNESCO, 2018).

To date, older persons, as well as persons of any age with low socioeconomic status, living with disabilities, and immigrants from developing countries, are overrepresented among the digitally illiterate (Drake & Kyrk, 2023).

In addition, the digital era brought new threats in terms of cybersecurity and misinformation (i.e., the spread of fake news). The issues of data ownership and data management for both digital content and personal information in the webspace are currently the battlefield of legislative mitigations in the effort to introduce some forms of regulations (Hofmann, 2024).

Many argue that these developments require a digital “proficiency” rather than a minimum degree of digital literacy to navigate safely through digital environments (UNESCO, 2018; Vercruyssen et al., 2023). Whenever these digital environments are the only gateway to secure access essential goods and services (e.g., payment, banking, shopping, prescription, healthcare), the disadvantages and the risks of social exclusion for those who are not digitally literate deepen (DiMaggio & Hargittai, 2001; Peine et al., 2024; Sanders & Scanlon, 2021).

Older people are not a homogeneous group but individuals with diverse identities, experiences, and challenges that shape how they engage with technology. The barriers they face in a digitalized world are primarily structural and societal, not personal shortcomings linked to ageing. Digital exclusion is a intersectional risk that stems from broader social inequalities, reinforcing its systemic nature. That means that digitally illiterate individuals tend to be persons with additional vulnerabilities in terms of low socioeconomic status, living with disabilities, or migration background. Therefore, it comes as no surprise that digital literacy is a social determinant of inclusion, and therefore, a consideration for the welfare states across the globe (Peine, Meissner, & Wanka, 2024).

Digital exclusion and older persons

It is important remember that access to digital technologies can improve older adults' quality of life by facilitating social connections, access to services, and opportunities for continuous learning and entertainment. At the same time, the increasing digital transformations rendered digital literacy as a problematic issue for some older adults who strive to manage their finances online and engage in the digital economy. The digital literacy of older persons should not be taken as given, as the third decade of the 21st century finds a generation of older individuals who can recall childhood memories with no smartphones, cell phones, or computers. For them, the Internet was not a subject to learn at school or at home, and only a few had Information and Communication Technologies (ICTs) as a subject to study or were trained in these in their workplace. Individuals who were not born into technology are often called "digital migrants".

Digital migrants are those who started using digital technology, computers, the Internet, etc. during their adult life, but did not grow up using them.

While most older persons are competent users of digital devices, such as computers, smartphones, and tablets, other citizens of this generation are digitally illiterate or never-users of technology. There are many reasons why some older persons cannot use the Internet, smartphones, apps, and other digital devices to date. The three main drivers are surprisingly non-technological, and these are low income, fewer years of attainment in education, and poor health (Hunsaker,& Hargittai, 2018).

Income and education are highly correlated, which means that a higher education usually brings a higher income down the road. Therefore, income and education are often grouped together as an indicator of socioeconomic status (or SES). In turn, low SES are related to digital illiteracy and the non-use of digital devices in older age (Heponiemi et al., 2023; Reddick et al., 2020). Low income could practically mean that some older persons could not afford an Internet connection and the purchase of digital devices. Older persons with lower educational attainment may have occupied "blue collar" jobs that usually was restricted to manual duties, which did not require from them to learn the use of ICTs. Indeed, "blue colour" occupations rarely required the use of computers and the Internet in the 20th century. Contrarily, older adults with a "white collar" working life benefited from lifelong learning opportunities in digitally transformed environments, all supported by their employers in the context of modernising their business, and in extend, the digital skills of their employees (Mesh & Talmud, 2011).

It should not be ignored that poorer overall health and impaired vision, both conditions with higher prevalence in older age, are related with increased risks of non-use of the Internet and low digital competence, irrespective of past occupation and income. Poor health is also related to failing attempts in attending and completing courses that could bring older and digitally illiterate persons to know how to use digital devices and services (Heponiemi et al., 2023).

Lastly, it is common observation that digital devices are ageist by design, meaning that their design largely overlooks the needs and the preferences of older consumers (Mannheim et al., 2023).

This dismissive practise does not exactly bring enthusiasm to older persons that contemplate using ICTs. After all, who wants to buy a pair of jeans that do not fit well on them? All these issues brought the discussion of the digital exclusion of older persons, often referred to as the “grey digital divide” (Friemel, 2016).

The digital divide describes inequalities in digital literacy, as well as the inequalities produced by an unequal distribution of access in digital tools and services. The “grey” digital divide refers to the specific challenges that older persons have in terms of digital literacy and digital inequalities, as they comprise a generation of digital migrants that may face additional barriers due to vision and hearing impairments, and sometimes, due to poorer physical and cognitive health.

Why the grey digital divide is a human rights issue

At this point, we hope that the reader has grasped the idea that while digitalization is beneficial, the changes imposed by digital agendas are leaving digitally illiterate and vulnerable citizens of older age in a very disadvantaged position. However, this population has not been effectively addressed by policies and social initiatives. As older persons are by virtue and nature human-rights holders, their digital exclusion raises human rights issues in modern societies (Sanders & Scanion, 2021). Among others, the narrative that progression is inevitable and digital migrants bear the responsibility to catch up puts the blame of exclusion on its own victims. Yet, the digital divide is neither a product of the present, a choice to abstain, nor a personal failure. One must consider whether someone has full control of their birth year, education, income, health, and occupation. Most scholars would agree that the individual has some agency in shaping the outcomes of their lives, but the powerful effect of the context cannot be overlooked. Therefore, the digital divide is a systemic and not a personal failure.

In economic and structural terms, individuals who are not able to navigate in digital environments are often considered outliers that have a personal responsibility to “catch up”. But from a human-rights perspective, these groups comprise an important minority in modern societies that need to be protected. For many years, the deployment and use of ICTs were regulated by the laws of consumerism and the free market. A human rights perspective has been most valuable in drawing policies of social protection, drawing the pathways of professional practice for those working closely with older persons, who, among other challenges, may lack the necessary digital proficiency within digitalized societies.

Human Rights are for everyone!

The value of human rights is that it can serve as a framework and tool in regulating sensitive issues around digitalization, or else digital rights. The Universal Declaration of Human Rights is a milestone document that proclaims the inalienable rights to which every individual is entitled, regardless of race, color, sex, language, religion, political or other opinions, national or social origin, property, birth, or any other status. Adopted by the United Nations General Assembly in 1948, the UDHR lays a foundation for human dignity, justice, and equality worldwide. Composed of 30

articles, it addresses a wide range of civil, political, economic, social, and cultural rights, aiming to safeguard human dignity and foster universal respect. These rights include (but are not limited to):

- The Right to Life, Liberty, and Security - Every individual has the right to live freely and safely.
- Freedom from Torture and Inhumane Treatment - No one should face torture or degrading treatment.
- Equal Treatment Before the Law – All individuals are entitled to justice and equality before the law.
- Freedom of Thought, Conscience, and Religion – The right to personal beliefs and the freedom to practice them.
- The Right to Work, Education, and an Adequate Standard of Living.

The UDHR aims to protect human dignity, asserting that all people are born “free and equal in dignity and rights” (Article 1). This is the basis of equality, emphasizing that everyone deserves respect simply because they were born humans. Therefore, human dignity is understood as an inherent quality, rather than something that must be earned or granted.

The UDHR has inspired numerous national and international laws, treaties, and constitutions, strengthening global human rights practices. In the 21st century, its principles continue to challenge discrimination, defend human rights defenders, and affirm the dignity of vulnerable communities worldwide. The enduring power of the UDHR is its moral authority, reminding individuals, governments, and organizations alike that human rights are the basis of freedom, justice, and peace for everyone, everywhere. The UDHR is the foundation of the international human rights law. Governments that become parties to international human rights treaties undertake the obligation to put into place domestic legislation compatible with their treaty obligations. The domestic legal system, therefore, provides the principal legal protection of human rights guaranteed under international law.

Digital Rights

The UDHR was drafted in 1948 when digitalization was less of an issue for welfare policies and the protection of basic rights. You may recall that the first digital computer started to operate in laboratory settings around this time. For many years to follow, the deployment and use of ICTs were regulated by the laws of consumerism and the free market, providing commercial and military advantages to the “haves” of these technologies. However, our dependency on digital infrastructures that we developed in the 21st century both in the public and private sectors brought the need to regulate digital processes, services, and content (Hoffman, 2024). Among other things, this has resulted in discussions on whether access to the Internet (Reglitz, 2020), the affordability of digital devices (Sanders & Scanlon, 2021), and education for digital literacy (Mikolajczyk, 2023) should be considered basic human rights. The United Nations has affirmed that digital rights are human rights, emphasizing that every individual should have equal opportunity to participate in the digital world.

Making digital rights something concise and tangible has been a slow process, and therefore, the establishment of digital rights is at the moment is at its infancy. The European Declaration on Digital Rights and Principles (EDDRP) is an attempt towards universal access and the regulation of the digital landscape within European borders. This Declaration refers to “the set of universal rights and freedoms that are essential for people to access, use, create, and share digital technologies and information freely and securely. These rights are necessary to ensure that people can fully participate in the digital world without being subjected to discrimination, censorship, surveillance, or other forms of abuse”. Bear in mind that although the EDDRP was signed by the Presidents of the Commission, the European Parliament, and the Council, this document is not legally binding for the member states of the European Union, nor have these principles been translated into national law.

The Council of the European Union adopted in 2020 the conclusion that the human rights, as well as the participation and well-being of older persons in the era of digitalization should be respect by maintaining essential public services in an analog form. The European Union Agency for Fundamental Rights (FRA, *ibid*) evaluated the national laws and policies relating to digitalized services provided by public administrations in Europe and concluded that:

- Only one in four people aged 65 to 74 in the 27 EU Member States have at least basic digital skills.
- The national legislation and policies do not always acknowledge the risk of exclusion from digitalized public services. They do not adequately address barriers to using digital services, such as insufficient coverage, costs of Internet and devices, lack of skills and external support.
- The laws of only four Member States include provisions aimed specifically at protecting older persons’ rights to equal access to digitalized public services.
- Only nine Member States’ policy documents recognise the importance of maintaining offline alternatives or granting freedom of choice of access channel.
- There is little evidence of national initiatives to provide digital skills training for older persons or to offer financial support for reliable Internet access or up-to-date devices and software.

It is important to note that the right to access a non-digital form of essential services (e.g., payment, banking, prescription, health), or the right not to use digital tools and services, either by choice or inability, is not included in the EDDRP.

Human Rights and your practice with older persons

A human rights approach in their work with older persons does not come automatically in educators’ and carers’ minds. However, the professional rules that mandate treating every individual with dignity and respect regardless of age or ability are inspired by the UDHR.

For health workers, the UDHR is relevant as the right to health is a fundamental human right. This includes “the right to control one’s health, including the right to be free from non-consensual

medical treatment and experimentation. Entitlements include the right to a system of health protection (i.e. health care and the underlying social determinants of health) that provides equality of opportunity for people to enjoy the highest attainable standard of health”.

Health care is carried out mainly through policies that have been designed, implemented, and enforced by the state (Mann et al., 1994). Regional treaties in Europe have recognized the human right to health and clearly influenced the rules for the provision of health care within national constitutions (Kinney & Clark, 2004). However, these considerations were made when digital health was not a key component in the mixture of public healthcare.

Therefore, clear and universal policies with legal basis that regulate fair, equitable, and trustworthy access to digital health are still missing.

Among the challenges in the modern and digitally-mediated healthcare systems are “digital illiteracy, resulting inequities in access to healthcare, truthful information sharing to end users demanding fully informed consent, dignity and fairness in storage, access, sharing and ownership of data” (Bral et al., 2019).

For adult educators, the UDHR is relevant as the right to lifelong learning opportunities is a fundamental human right. UNESCO (ibid) highlights that education can no longer be limited to a single period of one’s lifetime, as the fundamental and rapid developments in modern societies call for learning throughout the lifetime. This is particularly important for older digital migrants who were not born into technology, did not grow up using it, and in most cases did not receive any opportunities for “digital” education by the state. From a human-rights perspective, the state should ensure the right to lifelong learning by providing all learners of all ages in all contexts, so that older learners can acquire the knowledge and skills they need to realize their full potential and live with dignity.

We argue that the use of digital technology, computers, and the Internet later in their adult life is still a vital component in the lifelong learning mixture. Yet, UNESCO’s 5th global report on adult learning and education shows that disadvantaged and vulnerable groups such as rural populations, migrants, and older citizens, are deprived of access to learning opportunities. According to the same report, the participation of older adults in educational opportunities decreases in many countries. Consequently, adult educators and volunteers who teach older persons digital literacy have limited resources at their disposal yet bear nowadays the responsibility to address contemporary digital threats. These threats include:

- the spread of misinformation in social media
- identity theft and cybercrime
- data ownership and security
- informed consent
- digital inheritance
- the right to be “analogue”

These are emerging issues that expand beyond technical instructions on how to use digital tools and online services, and at the same time, domains that are poorly regulated by law or the official policies of digital service providers (e.g., Google, Meta, etc.). In the St@ndbyMe project, we argue that the use of a human rights framework is a valuable tool for adult educators to explain to older learners that some of their digital rights are still not sufficiently regulated and therefore still debated, but the path towards adequate solutions in the future has a clear direction– that is the one that respects the human rights of citizens.

Convention for the Human Rights of Older Persons

By now, we trust that the reader has understood that as society becomes more digitally connected, it's crucial to consider how human rights and digital rights apply to older individuals, who may face unique challenges in accessing and using digital technology. The Article 25 of the European Union's Charter of Fundamental Rights addresses the rights of older persons to lead a life of dignity and independence and to participate in social and cultural life. Yet, the question that may arise for many is whether there are specific human rights conventions for older persons.

Conventions are human rights instruments that supplement the UDHR and deal with specific concerns. Unlike the UDHR which sets moral obligations, conventions are legally binding treaties and foresee specific obligations that the states have to fulfill in terms of concrete actions to protect and promote the rights outlined in the treaty. Examples include the International Covenant on Civil and Political Rights and the Convention on the Rights of the Child. However, and up to 2025, older persons have not been recognized explicitly under the international human rights laws that legally oblige governments to realize their rights. A number of NGOs across the world have joined forces under the Global Alliance for the Rights of Older Persons (GAROP) in advocating for a Convention for the Rights of Older Persons. For many, this Convention is likely to be the next major human rights treaty adopted by the United Nations (UN), as many achievements towards this end goal have already been achieved. More precisely:

- The UN published the United Nations Principles for Older Persons in 1991, setting moral principles for the rights of older persons for independence, participation, care, self-fulfillment, and dignity.
- This document has been followed by the Proclamation on Ageing (1992), and the Political Declaration and Madrid International Plan of Action on Ageing (2002) which aims to provide governments with an explicit framework and guidance that would enable them to ensure that older people's rights are realised.
- In 2010, the United Nations General Assembly established the Open-Ended Working Group on Ageing (OEWGA) for the purpose of strengthening the human rights of older persons.
- In 2024, the United Nations adopted a resolution for the rights of older persons, virtually paving the way to establish an international, legally binding convention for the human rights of older people.

In short, there is no convention for the human rights of older persons that applies today. But all the necessary milestones towards the establishment of such a convention have been achieved. Therefore, it is a matter of time that the convention for the human rights of older people will take its rightful place among other legally binding treaties that foresee specific obligations that the states have to fulfill.

Concluding remarks

In the first chapter we provided a lot of contexts on why human rights are relevant for older people and for those working with older people within our increasingly digitalized societies. One may be tempted to assume that human rights and digital rights put an additional burden on the shoulders of an already overburdened body of workers within education, health care, and social care. But this is far from the truth.

With this self-study material, we hope that you will gain new knowledge about what digital transformation is and how we got to talk about digital dependencies. In this project we pose the questions: do we have the right to be digital? Do we have the right to remain “analogue”?

In the first chapter we tried to make you understand a bit better what the driving factors for the lack of digital literacy and the non-use of digital tools are, as well as why older persons should be considered vulnerable in this respect. You may have already noted that your profession and your everyday practices are increasingly carried out by digital means. What sometimes makes your practice challenging are older persons struggling to keep up with what the digital transformation of your services is requiring. When it comes to that, a question that often arises is whether the lack of digital competences is a personal choice, a personal failure, or simply a generational phenomenon. In the St@ndbyMe project, we argue that the answer to these questions is “clearly no.”

Where does this leave us? In practice, you are the most important expression of every law, regulation, or human rights convention for the rights of older persons that is established or will be established in the future. This is because, among people working with older persons, you are the one with the most contact hours. You may have a say, that is, the agency, in shaping your professional practice. That usually comes to a certain extent. You may be a person in the 50+ age span, and you may struggle yourself with technology

We hope that with this course we made you more aware of the digitalized context you are working in so that you are aware of the implications of digital transformation for work and interaction with older persons who struggle with technology. In a digitalized context where much more is left to be regulated, we hope that you are now aware of the ambiguities and the debates that implicate your way of working with older persons. In the end, you may be the catalyst of change that will raise awareness among other groups of practitioners within your working environment. But your wellbeing should remain a priority since that will determine the quality of services that you provide to older persons.

The team of the St@ndbyMe project can only anticipate that you will avoid a “blame-game” and will be readily available to discuss the benefits and challenges of digital transformation from a human

rights-based perspective. One must choose their battles carefully, and this is also what we wish for you too! But we know that you will be more competent now in supporting older persons in the field, to the degree that the knowledge provided, and the given circumstances, will allow this.

References

- Australian Human Rights Commission. (n.d.). Human rights explained: The International Bill of Rights. Retrieved from <https://humanrights.gov.au/our-work/education/human-rights-explained-international-bill-rights>
- Brall, C., Schröder-Bäck, P., & Maeckelberghe, E. (2019). Ethical aspects of digital health from a justice point of view. *European Journal of Public Health*, 29 (Supplement_3), 18–22. <https://doi.org/10.1093/eurpub/ckz167>
- Cambridge Dictionary. (n.d.). Digital immigrant. Retrieved from <https://dictionary.cambridge.org/dictionary/english/digital-immigrant?q=%2Bdigital-immigrant>
- DiMaggio, P., & Hargittai, E. (2001). From the 'digital divide' to 'digital inequality': Studying internet use as penetration increases. Center for Arts and Cultural Policy Studies, Woodrow Wilson School, Princeton University, 4(1), 4–2.
- Drake, A., & Kyrk, W. (2023). Bevakning av grundläggande betaltjänster 2023. Länsstyrelsen. Retrieved from <https://catalog.lansstyrelsen.se/store/26/resource/294>
- Euronews. (2024, July 21). Microsoft estimates 85 million computers globally affected by CrowdStrike glitch. Retrieved from <https://www.euronews.com/next/2024/07/21/microsoft-estimates-85mln-computers-globally-affected-by-crowdstrike-glitch>
- European Commission. (2020). A Europe fit for the digital age: Empowering people with a new generation of technologies. Retrieved from https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age_en
- European Commission. (2022). European Declaration on Digital Rights and Principles. Retrieved from <https://digital-strategy.ec.europa.eu/en/library/european-declaration-digital-rights-and-principles>
- European Commission. (n.d.). The rights of the elderly. Retrieved from <https://commission.europa.eu/aid-development-cooperation-fundamental-rights/your-fundamental-rights-eu/know-your-rights/equality/rights-elderly>
- FRA (European Union Agency for Fundamental Rights). (2023). Fundamental rights of older people: Ensuring access to public services in digital societies. Retrieved from <https://fra.europa.eu/en/publication/2023/older-people-digital-rights>
- Friemel, T. N. (2016). The digital divide has grown old: Determinants of a digital divide among seniors. *New Media & Society*, 18(2), 313–331. <https://doi.org/10.1177/1461444814538648>
- GDPR-info.eu. (n.d.). General Data Protection Regulation (GDPR). Retrieved from <https://gdpr-info.eu/>
- Heponiemi, T., Kainiemi, E., Virtanen, L., Saukkonen, P., Sainio, P., Koponen, P., & Koskinen, S. (2023). Predicting internet use and digital competence among older adults using performance tests of visual, physical, and cognitive functioning: Longitudinal population-based study. *Journal of Medical Internet Research*, 25, e42287. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/37145836/>

- Hofmann, H. C. (2024). EU legislative approaches to the regulation of digitalisation. University of Luxembourg Law Research Paper (2024-02).
- Hunsaker, A., & Hargittai, E. (2018). A review of internet use among older adults. *New Media & Society*, 20(10), 3937–3954. <https://doi.org/10.1177/1461444818787348>
- Kinney, E. D., & Clark, B. A. (2004). Provisions for health and health care in the constitutions of the countries of the world. *Cornell International Law Journal*, 37, 285.
- Mann, J. M., Gostin, L., Gruskin, S., Brennan, T., Lazzarini, Z., & Fineberg, H. V. (1994). Health and human rights. *Health & Human Rights*, 1, 6. <https://doi.org/10.2307/4065260>
- Mannheim, I., Wouters, E. J., Köttl, H., Van Boekel, L. C., Brankaert, R., & Van Zaanen, Y. (2023). Ageism in the discourse and practice of designing digital technology for older persons: A scoping review. *The Gerontologist*, 63(7), 1188–1200. <https://doi.org/10.1093/geront/gnac163>
- Mesch, G. S., & Talmud, I. (2011). Ethnic differences in internet access. *Information, Communication & Society*, 14, 445–471. <https://doi.org/10.1080/1369118X.2010.507379>
- Mikołajczyk, B. (2023). Universal human rights instruments and digital literacy of older persons. *The International Journal of Human Rights*, 27(3), 403–424. <https://doi.org/10.1080/13642987.2022.2121848>
- OECD. (2018). OECD reviews of digital transformation: Going digital in Sweden. OECD Publishing. <https://doi.org/10.1787/9789264302259-en>
- Peine, A., Meissner, A., & Wanka, A. (2024). Digitalisation and population ageing: Social policy dimensions of the digital divide and innovation.
- Reddick, C. G., Enriquez, R., Harris, R. J., & Sharma, B. (2020). Determinants of broadband access and affordability: An analysis of a community survey on the digital divide. Retrieved from <https://www.sciencedirect.com/science/article/pii/S026427512031252X>
- Reglitz, M. (2020). The human right to free internet access. *Journal of Applied Philosophy*, 37(2), 314–331. <https://doi.org/10.1111/japp.12395>
- Sanders, C. K., & Scanlon, E. (2021). The digital divide is a human rights issue: Advancing social inclusion through social work advocacy. *Journal of Human Rights and Social Work*, 6(2), 130–143. <https://doi.org/10.1007/s41134-020-00147-9>
- UNECE (2021). Ageing in the digital era. Retrieved from https://unece.org/sites/default/files/2023-03/PB26-ECE-WG.1-38_E.pdf
- UNESCO (2022). 5th global report on adult learning and education: Citizenship education: Empowering adults for change. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000381666>
- UNESCO (2018). Global framework of reference on digital literacy skills. Retrieved from <https://uis.unesco.org/sites/default/files/documents/ip51-global-framework-reference-digital-literacy-skills-2018-en.pdf>
- UNESCO (2021). Reimagining our futures together: A new social contract for education. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000379707>
- UNESCO (2022). The right to lifelong learning: Why adult education matters. Retrieved from <https://www.>

unesco.org/en/articles/right-lifelong-learning-why-adult-education-matters

United Nations (1991). United Nations principles for older persons. Retrieved from <https://www.ohchr.org/en/instruments-mechanisms/instruments/united-nations-principles-older-persons>

United Nations (1992). Proclamation on ageing: Resolution adopted by the General Assembly. Retrieved from <https://digitallibrary.un.org/record/155060?ln=en&v=pdf>

United Nations (2000). The right to the highest attainable standard of health (Article 12 of the International Covenant on Economic, Social and Cultural Rights). Retrieved from <https://documents.un.org/doc/undoc/gen/g00/439/34/pdf/g0043934.pdf>

United Nations (2002). Political Declaration and Madrid International Plan of Action on Ageing. Retrieved from <https://social.un.org/ageing-working-group/documents/mipaa-en.pdf>

United Nations (2010). Open-ended working group on ageing for the purpose of strengthening the protection of the human rights of older persons. Retrieved from <https://social.un.org/ageing-working-group/index.shtml>

United Nations (n.d.). About the right to health and human rights. Retrieved from <https://www.ohchr.org/en/special-procedures/sr-health/about-right-health-and-human-rights>

United Nations (n.d.). The core international human rights instruments and their monitoring bodies. Retrieved from <https://www.ohchr.org/en/core-international-human-rights-instruments-and-their-monitoring-bodies>

United Nations. (n.d.). The foundation of international human rights law. UN Human Rights Office. Retrieved from <https://www.un.org/en/about-us/udhr/foundation-of-international-human-rights-law>

United Nations. (n.d.). Universal Declaration of Human Rights. Retrieved from <https://www.un.org/en/about-us/universal-declaration-of-human-rights>

Vercruyssen, A., Schirmer, W., Geerts, N., & Mortelmans, D. (2023). How “basic” is basic digital literacy for older adults? Insights from digital skills instructors. *Frontiers in Education*, 8, 1231701. <https://doi.org/10.3389/educ.2023.1231701>

Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, 28(2), 118–144. <https://doi.org/10.1016/j.jsis.2019.01.003>



Fostering digital inclusion in older age through education and training

Chapter 2

Addressing the grey digital divide

Digital literacy and digital proficiency

In the past, the term “digitally excluded” primarily referred to individuals who lacked internet access or did not possess the basic skills necessary to operate computers (van Deursen & Helsper, 2015). This exclusion created barriers to participation in an increasingly digital society, affecting access to information, communication, and essential services (Helsper & Reisdorf, 2017). However, digital literacy has since evolved into a multi-dimensional concept that extends beyond basic computer use. Today, digital literacy has become a “survival skill” - a key that helps users work naturally in executing complex digital tasks and encompasses a broad range of competencies, including the ability to effectively navigate and utilize complex digital tools such as smartphones, applications, and tablets (Eshet, 2012).

It also involves mastering skills necessary for staying informed, critically evaluating online content, and maintaining security and privacy in digital environments. Critical evaluation of digital content is essential to distinguish between credible and misleading information, recognize biases, and assess the reliability of digital media. Additionally, digital literacy requires an understanding of cybersecurity practices, such as creating strong passwords, recognizing phishing attempts, and managing personal data to protect privacy in online interactions (Ng, 2012). Given the rapid advancement of technology, digital literacy is now considered a continuum rather than a fixed skill set, requiring ongoing adaptation to emerging digital tools and platforms (Livingstone et al., 2021). Furthermore, it requires a different meaning-making method: from text-based to graphic-based interfaces, users now rely more on visual skills to navigate them. This “photo-visual” skill helps people understand icons, symbols, and other graphical elements without needing text (Eshet, 2012).

Digital literacy is not equally distributed across populations, as factors such as age, socioeconomic status, education level, and geographic location influence an individual’s ability to engage with digital technologies (van Dijk, 2020). Older adults, in particular, often encounter distinct challenges, including accessibility barriers, lack of confidence, and unfamiliarity with evolving digital tools (Vaportzis, Clausen, & Gow, 2017). As digital literacy is increasingly recognized as a continuum that spans from digital literacy to digital proficiency, older persons ongoing adaptation requires targeted educational interventions and support systems that facilitate lifelong digital learning (Livingstone et al., 2021). The right to be digital requires not only motivation but also appropriate support. Accessible training programs, step-by-step guidance from caregivers, and community initiatives can empower older adults to gain digital confidence and maintain their independence (Digital Inclusion Report, 2022).

Although older adults' adoption rates of technology have traditionally been low, these rates are steadily increasing, narrowing the gap between younger generations. The World Health Organization estimates that by 2030, 1 in 6 people worldwide will be 60 years or older, emphasizing the importance of age-friendly technological developments that are usable by older adults (Stanford Center on Longevity, n.d.). However, the factors influencing older adults' intention to use digital technologies remain complex and not fully understood. According to Pew Research Center (n.d.), older adults are the fastest-growing segment of the online population. Those who use technology often feel more connected to others, are more actively engaged in their communities, benefit from online services, and stay better informed about news and events.

Older adults are often perceived as reluctant to embrace the digital world, yet many make the internet an integral part of their daily routine once they do. According to Pew Research Center (2017), a substantial proportion of older internet users engage online frequently, with roughly three-quarters going online at least once a day. Of those, 51% report accessing the internet several times daily, and 8% use it almost constantly. While a relatively small share of older adults use social media compared to younger generations, those who do tend to be highly engaged. For example, 70% of older adults who use Facebook log in daily and actively participate in online conversations, similar to the engagement levels of younger social media users. And although video gaming is more common among younger generations, seniors are increasingly participating in this activity as well. According to a Pew Research Center survey conducted in 2015, one in four adults aged 65 or older reported playing online video games, demonstrating that older adults are increasingly exploring a broader range of digital activities.

Despite these advancements, digital literacy among older adults still varies widely, particularly in Europe. The 2022 Digital Economy and Society Index (DESI) report highlights that insufficient digital skills hinder future growth, deepen the digital divide, and increase the risk of digital exclusion, as more essential services move online (European Commission, 2022). The European Union's Digital Decade initiative aims to have 80% of adults (aged 16 to 74) with basic digital skills by 2030. However, the percentage of older adults with these skills remains uneven. For instance, in 2021, only 25% of people aged 65 to 74 had at least basic digital skills, with significant variations across European countries. In countries like the Netherlands and Finland, over 70% of individuals aged 55 to 64 had basic digital competencies, while in Serbia, Romania, and North Macedonia, the figure was less than 15%.

Educational disparities play a crucial role in digital skill acquisition among older adults. While 66% of highly educated individuals have at least basic digital skills, only 15% of those with low education levels can claim the same. Additionally, slightly more men (39%) than women (31%) aged 55 to 74 possess basic digital skills. Recognizing these gaps, the 2020 Council of the European Union stressed the importance of preserving some non-digital public services to ensure inclusivity for all older adults, regardless of their digital proficiency. The Council also called for respecting older adults' fundamental rights and ensuring their active participation in an increasingly digital society (European Union Agency for Fundamental Rights, 2023).

The grey digital gap

Advancing digitalization presents societies, and older people in particular with new opportunities in many areas such as communication, education, and access to information. Older persons are often faced with the difficulty of adapting to rapid technological changes and learning how to use digital media. If they also live in precarious situations, buying a device and the associated follow-up costs can be difficult.

The grey digital gap means that older persons, often have less access to digital devices or the internet or they may feel less comfortable using them compared to younger generations (Jun M et al. 2024). One reason for this gap is that many older people simply haven't had the same exposure to digital technology. Unlike younger people who grew up with computers, smartphones, and apps as part of their schooling and work, older generations often completed their careers before digital devices became widespread. As a result, they may lack basic digital skills, such as navigating the internet, setting up devices, or using apps. Without this foundation, diving into the digital world can feel daunting. Beyond this lack of experience, there is often a fear associated with technology. Many older people worry about making mistakes or accidentally damaging a device, which can create a mental block. While younger people are generally more comfortable experimenting and learning through trial and error, older adults might feel that a mistake could be costly or irreversible, making them hesitant to try at all. This fear can hold them back from learning, especially when every interaction with a new device or software seems to carry potential risks.

Our focus groups with older persons showed that there's often a sense of embarrassment that comes with not knowing how to use digital tools. Older adults may feel self-conscious admitting they need help, especially when younger people seem to navigate technology so effortlessly. This can prevent them from asking questions or seeking support, creating a cycle where they feel increasingly isolated from the digital world. This combination of factors keeps many older people at a distance from the digital tools that could otherwise help them stay connected, informed, and engaged with the world around them.

The Right to be Offline: a matter of respecting Choice or Inability

Digitalization is becoming increasingly integrated into nearly all aspects of daily life. Many essential activities—such as banking, shopping, healthcare, and social interactions—are now primarily conducted online. Over time, the use of analogue services is declining, making digital literacy a crucial skill.

For many older adults, digital technology is not just a convenience but a necessity for maintaining independence and staying connected. Imagine an older person trying to book a doctor's appointment the way they always have—by calling the office—only to be told they must use an application. Healthcare consultations are increasingly moving online, smart devices are becoming the norm for health monitoring, and local businesses are shifting towards cashless transactions. Even family communication is changing, with video calls and messaging apps replacing in-person visits. For those unfamiliar with these tools, the experience can be frustrating and isolating.

Research shows that digital literacy plays a crucial role in ensuring that older adults can engage with modern digital environments (Smith & Jones, 2021). While digital literacy is increasingly essential, it is equally important to recognize the right of older adults to choose whether or not to engage with digital technologies. Respecting the right to be offline ensures that individuals are not disadvantaged or excluded simply because they carry out analogue methods of interaction either due to choice or inability. This principle acknowledges that while technology offers convenience, it should not become a driver of social exclusion for those who do not use it (Smith & Jones, 2021).

To uphold this right, access to traditional services—such as face-to-face consultations, telephone communication, and mail correspondence—must remain available (Digital Inclusion Report, 2022). Older adults should not feel pressured to adopt technology out of necessity, and alternatives should exist in critical areas like healthcare and social services (Brown et al., 2020). Where digital solutions are the only option, assistance should be provided to ensure older adults can navigate these systems with ease (Clark, 2021).

The St@nd By Me project argues that older persons' digital rights should focus not only on increasing access to technology but also on ensuring that older persons have the freedom to choose how they engage with it. In other words, technological progress should complement human interaction and not replace it at the expense of individual rights and well-being. A balanced approach—one that both supports digital adaptation and respects the right to remain offline—will create a more inclusive and equitable future for older persons.

Common barriers to developing digital skills for older persons

Our experience in the field taught us many lessons on what challenges older persons face when it comes to developing digital skills. One common barrier is the fear of new technologies and a lack of confidence, as they may feel unsure about their ability to learn and use new technologies. They often believe that it's too late for them to catch up and have a negative position towards lifelong learning. In addition, many older individuals may not feel motivated to learn digital skills because they don't immediately see the benefits or feel a direct need. There's also a fear of making mistakes, with some worried that they might break the device or become victims of online scams. This fear can create a reluctance to even try. Also, the lack of readily available support or digital literacy training that meets their needs can make the learning process overwhelming, leaving them feeling isolated from the digital world.

Furthermore, for some, access to the necessary devices or reliable internet is limited, and the financial burden of acquiring these tools can be a significant obstacle. Older persons may find that they lack the financial resources for basic ICT equipment, perhaps due to the low-level of pension benefits that they receive as well as to the prioritization of other activities. This lack of resources might also impact older adults' ability or desire to pay for training on the use of ICT equipment or to participate in professional courses that develop digital competencies. Older adults may also face physical challenges that make it difficult to use devices, such as poor vision, hearing loss, or the deterioration of sensory and fine motor skills (International Journal of Technology and Educational

Innovation, 2023).

The rapid pace at which technology evolves is another obstacle. Devices and software frequently change, with each update introducing new features or rearranging familiar settings, which can overwhelm someone currently learning the basics. This rapid evolution creates a “learning gap” and a sense of instability, as just when a person becomes comfortable with a device, it may require updates, or a newer version may replace it. Additionally, even if they’re willing to learn, it can be difficult for older adults to find convenient or accessible training opportunities. In many places, especially in rural areas, digital education resources are limited, and the nearest support may require extensive travel or may not be tailored to individual needs (Vaportzis, Clausen, & Gow, 2017).

Another barrier is the language of technology itself. Technical jargon, such as “4.4 GHz TurboBoost” or “512 GB PCIe SSD,” can be baffling and off-putting for those unfamiliar with it. For someone who has not spent much time around computers, these terms can feel like a foreign language, making the digital world seem even more unapproachable. This has been a finding in the focus groups that we carried out with older persons in the context of the St@ndbyMe project.

An additional issue is the specificity of new media: the ways in which new media are used do not build on the ways analogue solutions were previously used for accessing information or communication. The techniques and approaches most familiar to older people often have no direct online equivalent. For instance, writing a letter required knowing how to hold a pen, but with age-related deterioration, older adults could adapt by using a larger pen or a specially made grip. However, typing an email on a screen can seem like an insurmountable challenge, especially for those unfamiliar with the accessibility options provided by their device.

The world of ICT is virtual in a way that the analogue world never was. Sending a letter involved placing the document in an envelope, affixing a stamp, and placing it in a postbox—a process that was comprehensible and could be explained by a non-expert. In contrast, digital communication requires an understanding of interfaces, passwords, and online procedures, which can create significant barriers for older individuals unfamiliar with such technologies (International Journal of Technology and Educational Innovation, 2023).

Digital transformation and the role of adult educators

Digital transformation refers to integrating digital technology into all areas of business and society, fundamentally changing how we operate and how services are delivered. Adult educators and volunteers teaching older persons digital skills often feel being between the clashing rocks of the rapid digital transformations on the one side, and the persisting digital divide on the other. New technologies and digital services bring new learning needs, teaching tools, and methods that can enable or enhance accessibility. It also requires educators to continuously update their digital skills, rethink pedagogical approaches, and address contemporary challenges like data privacy, digital inheritance, AI-generated deep fake news, and many more. For those teaching older persons digital skills, this task can be especially challenging, especially with the few means that they often have at

their disposal.

When it comes to training older adults in ICT, it is crucial to consider their “life-worlds” — their lived experiences, values, and everyday realities — to ensure that digital learning resonates with their current needs while also addressing any disconnects between their past experiences and new digital skills. Educators and volunteers can achieve this by designing content and pedagogical approaches that align with older adults’ learning expectations and integrating these skills into their everyday routines, making them a meaningful part of their lives (Grenier & Lussier, 2022). In other words, avoid teaching abstract concepts and digital solutions that are out there with limited chance that older persons will use them. Relevance to everyday life is key.

Furthermore, to improve digital literacy and increase the adoption of digital technology among older adults, learning interventions must focus on eliminating stereotypes, prejudice, and discrimination based on age. Accepting ageing itself as an opportunity to learn drawing from experience, instead of a barrier to digital engagement, will enable transformative learning. Ageism presents a significant challenge that affects older adults’ interactions with digital technology at multiple levels. Therefore, avoiding ageist attitudes and practices when teaching older persons digital skills is important. Educators and volunteers teaching older persons digital skills have an important role in overcoming societal and organizational attitudes influencing design decisions, which in turn impact individual behavior, perpetuating age-based exclusion from the digital world (Grenier & Lussier, 2022).

Learning in Later Life

The learning capacity of older persons has direct and practical implications for those trying to help them develop their digital skills. Therefore, it is important to explore the issue of how older people learn. We offer some tips on how you can adapt your educational programs and materials to build on your learner’s cognitive strengths and compensate for some of the losses that can occur with ageing. For example, older persons make up the largest group who have vision and hearing impairments. Currently, we have a limited understanding of how older adults with late-life hearing or vision impairments adapt, learn, and use ICTs, but a supportive and encouraging environment can help maintain an active and fulfilling learning experience. How to identify disempowering practices in teaching older adults that can undermine their confidence and engagement, is key.

More than education: rethinking learning in older age

Learning in older age supports the process of life changes and empowers us as learners to use and develop the skills we already have, to cope with the constant social and economic changes around us, and to participate actively in society. But what is it about older people that separate them from other adult learners? Why is their education more than just educating a specific target group?

From a societal perspective, the answer is simple: society has constructed a negative image of old age and older people (Findsen 2005). People after their 70s are often seen as a burden on society, as resources must be found to provide incomes for them, care for their declining health and

maintain institutions for those who cannot otherwise support themselves (Laslett, 1991). One could say that the primary goal of education for this age group is to deconstruct and reconstruct this image because trainers and trainees have been nurtured with limiting prejudices and stereotypes. According to Brookfield (2012), critical thinking is a productive and positive activity, a process that varies according to context. Therefore, in the context of empowering older people, this means recognizing and transforming dysfunctional assumptions about the inevitable effects of ageing. Also, according to Mezirow's theory of Transformative Learning (1999), education can encourage older people to reflect critically on the assumptions they have internalized about their self-image and their potential, as well as how assumptions shape attitudes and behaviors towards them, and to free themselves from them.

In contrast to the model of decadence that sees ageing as inevitable and unwanted, a more optimistic view is needed that sees this period of human life as one that can be creative and productive, filled with personal choices and no time pressure to pursue them. According to Withnall (2000), education can contribute to this direction by enhancing physical and mental health efforts as well as personal satisfaction.

One should keep in mind that older people also differ from younger people in terms of the wealth of experience and skills they already have, which can be used in the educational process and enrich it. Indeed, their experience could be relevant to the subject being taught and could outweigh that of the trainer.

However, older persons differ greatly from one another, as age alone does not define a common social identity. Older learners do not form a homogeneous group; they show differences according to their gender, social class, educational background, income, and even their general physical condition. In fact, the older people get, the more differences there are. The speed and intensity of ageing varies from person to person, both physiologically and psychologically (WHO 2015). Do not spend time in trying to define the onset of older age. There are only abstract and arbitrary criteria to categorize someone as an older person, whereas in older age most persons have different potentials and weaknesses.

On the contrary, the difficulty that some older people may have in acquiring new knowledge is compensated by maturity and experience. This compensation has also a neuronal correlate: research has shown that older people can use both hemispheres of their brain for processes for which younger people use only one (Reuter-Lorenz, 2001). According to our experience, older persons are usually more enthusiastic and committed learners than younger people. But their educational needs should be considered carefully.

The educational needs of older persons

According to Findsen (2007), the educational needs of older persons usually revolve around three pillars:

- self-sufficiency, i.e. the need to meet the demands of the environment

- personal expression, meaning that they participate in activities for their own pleasure and not necessarily to achieve a specific goal
- social contribution, whereby the individual decides how to be useful by contributing to society

Digital skills have become a key component for older persons self-sufficiency, even that older people use digital applications much less than younger people. Teaching digital skills can be a vehicle to combat social injustice and give older people the opportunity to regain their position as equal citizens in digitalized society. By using critical thinking and open discussions, older learners can challenge the beliefs they've internalized over time about their ability of "old dogs learning new tricks". This allows them to see their experiences in a new light and make positive changes in their lives. (Formosa 2004).

Of course, the biological changes that accompany ageing, mainly in hearing, vision and reflexes, cannot be overlooked, which requires adaptation of the educational methods and techniques applied. Although age-related changes, both internal and external, may result in some functional losses, these changes do not mean that the person is ill or that all older people are necessarily weak and impaired.

Supporting older persons with hearing or vision impairments

Older people make up the largest group who have vision and hearing impairments. As people live longer, there is a greater chance of losing some vision and hearing to a point when communication and independence are significantly impacted. Currently, we have a limited understanding of how older adults with late-life vision impairments adopt, learn, and use ICTs to communicate and seek information as they are underrepresented in cognitive training interventions. However, this loss of freedom and connection can be reversed with a supportive and encouraging environment that can help older adults with sensory impairments maintain an active and fulfilling learning experience.

Learning for older adults with hearing or vision impairments involves specialized strategies to address their unique needs. For those with hearing impairments, it's crucial to use assistive devices like hearing aids, cochlear implants, and other listening systems such as FM or infrared systems, which enhance sound clarity and reduce background noise. Communication strategies also play a vital role, such as speaking clearly and slowly, facing the person directly, and ensuring good lighting on the speaker's face. Additionally, providing written information and avoiding background noise and distractions can significantly improve understanding and engagement in learning activities.

Vision impairment in older adulthood presents complex challenges due to one's changing visual abilities coupled with an evolving landscape of accessible communication technologies. For older adults with vision impairments, optimizing their learning environment is essential. This includes ensuring good lighting, removing hazards that could cause falls, and using visual aids like electronic magnifiers and large print materials. Recommending a consultations with an ophthalmologist can help manage and treat undetected conditions like macular degeneration, glaucoma, diabetic

retinopathy, and cataracts. Assistive technologies such as handheld magnifiers and video magnifiers can also aid in reading and other daily tasks (Kaur & Agnihotri, 2023).

For visually impaired individuals, there are some innovative, voice-based email systems designed to improve email accessibility. The proposed systems leverage Artificial Intelligence and speech recognition technologies to convert speech to text and text to speech, enabling visually impaired individuals to send and receive emails using voice commands. Despite certain limitations, future enhancements promise to further refine the system, paving the way for a more inclusive digital communication environment.

Emerging subjects on digitalization and older age

As we mentioned, there are some topics in our digitalized world that spark many heated debates. Data ownership and inheritance, the spread of fake news, digital security and identity theft, as well as the wider implementation of AI technologies, are dominating the public discourse and influencing our everyday lives to a significant degree. This means that citizens of all ages must be well equipped with knowledge and digital skills to follow the relevant debates. Therefore, the value of including these topics in digital literacy programs at the basic level is undeniable. We present a brief account and some useful resources for adult educators who wish to teach these subjects to older persons.

Data ownership and inheritance

Data ownership refers to the rights and control an individual or organization has over specific data, including how it is accessed, used, and shared (European Commission, 2024). This concept becomes particularly complex with the advent of digital assets and personal data stored online. Data inheritance extends this idea, addressing the transfer of data ownership after an individual's death. As digital footprints grow, questions arise about who inherits this data, how it should be managed, and what legal frameworks apply. To date, there are no clear policies and legal provisions for data ownership and inheritance, although this is crucial to protecting individuals' digital legacies and maintaining privacy and security for both the deceased and their heirs. Raising these issues in respective digital literacy initiatives would be beneficial for increasing awareness among your older learners.

Fake news in the digital age

Fake news refers to false or misleading information presented as legitimate news, often intended to deceive. While misinformation has existed throughout history, its reach has expanded dramatically with digital technologies. Social media platforms accelerate its spread, making it increasingly difficult to separate fact from fiction. Addressing this issue requires understanding its origins, mechanisms, impacts, and potential solutions.

Though fake news has historical roots in propaganda, its modern power lies in digital amplification. Platforms like Facebook, Twitter, and YouTube prioritize engaging content — often sensational or emotionally charged — regardless of accuracy (Vosoughi, Roy, & Aral, 2018). Bots and automated

accounts further intensify this by rapidly sharing false content, making it seem widespread and credible (Shao et al., 2018).

Psychological factors also play a role. Confirmation bias causes people to accept information that aligns with their beliefs (Lazer et al., 2018), while echo chambers limit exposure to differing views (Del Vicario et al., 2016). This means that in social and online environments, especially on social media, people tend to interact with others who share similar opinions, beliefs, or values. As a result, they are repeatedly exposed to information and perspectives that reinforce their existing views, while opposing or diverse viewpoints are filtered out or ignored. Furthermore, emotional content, particularly stories evoking fear or anger, is more likely to be shared without fact-checking (Lewandowsky, Ecker, & Cook, 2017).

Fake news has significant consequences. Politically, it can influence public opinion and election outcomes, as seen in the 2016 U.S. Presidential election and Brexit (Allcott & Gentzkow, 2017). Socially, it deepens divisions, fosters mistrust, and can incite violence, as observed in cases where online misinformation led to real-world clashes (Banaji et al., 2019). Public health is also at risk. During the COVID-19 pandemic, false claims about the virus and vaccines led to confusion, vaccine hesitancy, and reduced compliance with health measures (Motta, Stecula, & Farhart, 2020).

Addressing fake news requires a multi-faceted approach. Technological solutions include AI-driven content moderation and partnerships with fact-checkers (Pennycook & Rand, 2019). Education is equally critical: media literacy programs help individuals assess sources and identify misinformation (Bulger & Davison, 2018). Governments are exploring regulatory frameworks for transparency in online content, particularly around political advertising and platform accountability (Tambini, 2017).

Security and identity theft

Digital security involves measures and practices to protect electronic information from unauthorized access, breaches, and other cyber threats (Andress, 2014). It is crucial in safeguarding personal and sensitive data, especially as identity theft becomes increasingly prevalent. Identity theft occurs when someone unlawfully obtains and uses another person's personal information, such as social security numbers, bank details, or login credentials — often leading to financial loss and reputational damage (Federal Trade Commission [FTC], 2021). Strengthening digital security through robust passwords, encryption, two-factor authentication, and regular monitoring is essential to mitigate the risk of identity theft and ensure the integrity and privacy of personal data (Sicari et al., 2015).

AI and technology: the magic solution?

AI and advanced technologies offer promising solutions to improve the lives of older adults, particularly in healthcare, but they are not a one-size-fits-all magic solution. While AI can assist with tasks like medication reminders, fall detection, or remote health monitoring (Luxton, 2016), it's essential to approach these tools critically. Many older adults may feel overwhelmed or intimidated by unfamiliar technology, especially when not provided with clear guidance or realistic expectations

(Peek et al., 2014). Educators and caregivers play a crucial role in demystifying AI by explaining both its benefits and limitations. Step-by-step support is essential, as AI systems may struggle with issues like voice recognition errors or the need for precise inputs (Berridge & Wetle, 2020). Helping older adults gain digital confidence is not just about teaching technical skills, but also about empowerment and fostering a sense of control (Tsai et al., 2017). Rather than assuming that AI will automatically solve the pressing problems of our society, we must focus on practical, empathetic support. When older adults understand how AI works and feel comfortable using it, these tools can enhance independence, improve healthcare engagement, and ultimately support a better quality of life (Mitzner et al., 2019). But it is doubtful that AI tools will replace human contact, human agency, or human interaction.

Concluding remarks

In today's rapidly evolving digital world, digital literacy is no longer a luxury but a fundamental skill for independent, informed, and socially connected living. For older persons, digital inclusion is not simply about learning how to use a device — it is about maintaining autonomy, accessing essential services, staying connected to others, and exercising the right to participate fully in society.

However, the digital divide affecting older persons runs deeper than issues of access to technology. It is shaped by lifelong disparities in learning opportunities, confidence, exposure to digital tools, and the availability of supportive learning environments. Bridging this gap requires more than technical training — it calls for a shift in how we perceive both ageing and digital competence.

Older adults are not a homogeneous group. They bring a wide range of life experiences, cognitive strengths, and motivations to the learning process. While physiological changes such as hearing or vision loss may require adjustments in educational methods, these do not diminish the capacity — or the right — to learn. On the contrary, older adults often bring depth, maturity, and commitment to their learning, which can be powerful assets in the digital age.

Effective education for older people must be grounded in empathy, realism, and inclusiveness. Programs must be tailored to the real-life needs, interests, and pace of older learners, and designed with their active participation. Educators must be equipped not only with tools and methods, but with the sensitivity and critical perspective needed to challenge ageist assumptions and create empowering, respectful learning environments.

Supporting the digital learning of older adults is, ultimately, a deeply human, social, and political act. It is about more than bridging a skills gap — it is about dismantling stereotypes, restoring confidence and dignity, and affirming the right of all individuals to grow, learn, and contribute at every stage of life.

Dos and Don'ts

Based on our extensive experience in assisting older adults in achieving their educational goals, we have identified some helpful tips on what to do and what to avoid:

1. Combat ageism in all its forms, especially ageist language and assumptions.
2. Understand how different older people learn in different contexts.
3. Respect their needs and preferences whenever possible. The right to be digital and the right to remain non-digital are equally important.
4. Allow each learner to follow his/her own learning pace.
5. Give them the recognition and support they need to succeed.
6. Make your learning environment age-friendly.
7. Do not patronize your learners and don't make assumptions.
8. Speak slowly or repeat what you have said.
9. Use experiential and participatory approaches.
10. Always keep in mind that what we think is easy, isn't necessarily easy for older learners.

First and foremost, it is crucial to remember and emphasize the importance of joy, sociability, creativity, and fun as key factors in encouraging participation in learning!

References

- Aging Research & Technology. (2023). Technology use among seniors. *JMIR Aging*, 6(1), e44564. <https://aging.jmir.org/2023/1/e44564/>
- Allcott, H., & Gentzkow, M. (2017). Social media and fake news in the 2016 election. *Journal of Economic Perspectives*, 31(2), 211–236.
- Andress, J. (2014). *The basics of information security: Understanding the fundamentals of InfoSec in theory and practice* (2nd ed.). Syngress.
- Banaji, S., Bhat, R., Agarwal, A., Passanha, N., & Pravin, M. S. (2019). WhatsApp vigilantes: An exploration of citizen reception and circulation of WhatsApp misinformation linked to mob violence in India. *London School of Economics and Political Science*.
- Berridge, C., & Wetle, T. F. (2020). Why older adults may be the last to adopt artificial intelligence-enabled technology. *Health Affairs*, 39(9), 1506–1513. <https://doi.org/10.1377/hlthaff.2020.00703>
- Bovet, A., & Makse, H. A. (2019). Influence of fake news in Twitter during the 2016 US presidential election. *Nature Communications*, 10(1), 7.
- Bulger, M., & Davison, P. (2018). The promises, challenges, and futures of media literacy. *Journal of Media Literacy Education*, 10(1), 1–21.
- Brookfield, S. D. (2012). *Teaching for critical thinking: Tools and techniques to help students question their assumptions*. Jossey-Bass.
- Brown, M., Smith, J., & Taylor, R. (2020). Digital inclusion and aging: Bridging the gap in healthcare and social

services. *Aging & Society*, 42(3), 215-230.

Burkhardt, J. M. (2017). History of fake news. In *Combating fake news in the digital age* (pp. 5–10). American Library Association.

Clark, P. (2021). Ensuring accessibility in a digital world: Strategies for inclusion. *Journal of Digital Equity*, 5(2), 112-126.

Del Vicario, M., Bessi, A., Zollo, F., Petroni, F., Scala, A., Caldarelli, G., & Quattrociocchi, W. (2016). Echo chambers in the age of misinformation. *Nature Human Behaviour*, 1, 1–8.

Digital Inclusion Report (2022). The impact of digitalization on older adults: Challenges and solutions. *International Journal of Digital Studies*, 8(4), 89-102.

Eshet, Y. (2012). Thinking in the digital era: A revised model for digital literacy. *Issues in Informing Science and Information Technology*, 9, 267–276.

European Commission (2022). Digital economy and society index (DESI). <https://digital-strategy.ec.europa.eu/en/policies/desi>

European Commission (2024). What is data ownership, and does it still matter under EU data law? Available at: <https://data.europa.eu/sites/default/files/report/What%20is%20data%20ownership%20and%20does%20it%20still%20matter%20under%20EU%20data%20law.pdf>

European Union Agency for Fundamental Rights. (2023). Older people and digital rights. Available at: <https://fra.europa.eu/en/publication/2023/older-people-digital-rights?page=3#read-online>

Federal Trade Commission (FTC). (2021). Identity theft: What to know, what to do. <https://www.consumer.ftc.gov/articles/what-know-what-do>

Findsen, B. (2007). Freirean philosophy and pedagogy in the adult education context: The case of older adults' learning. *International Journal of Lifelong Education*, 26(3), 303–319. <https://doi.org/10.1080/02601370701256373>

Formosa, M. (2002). Critical gerogogy: Developing practical possibilities for critical educational gerontology. *Education and Ageing*, 17(1), 27–41. <https://doi.org/10.1080/02660830.2002.11700660>

Grenier, L., & Lussier, M. (2022). Digital skills training for older people: The importance of the 'lifeworld'. *Educational Gerontology*, 48(4), 243–258. <https://doi.org/10.1016/j.edgero.2022.04.003>

Helsper, E. J., & Reisdorf, B. C. (2017). The emergence of a “digital underclass” in Great Britain and Sweden: Changing reasons for digital exclusion. *New Media & Society*, 19(8), 1253–1270. <https://doi.org/10.1177/1461444816634676>

International Journal of Technology and Educational Innovation. (2023). Barriers to digital literacy among older adults. *Innoeduca*, 9(1), 5, 26. <https://doi.org/10.24310/innoeduca.2023.v9i1.16433>

Jun M et al. (2024) Examining the Digital Technology Usage of Older Adults as Determinants of Life Satisfaction in the Digital Divide. *Journal of Applied Gerontology*. Available at: <https://journals.sagepub.com/doi/10.1177/07334648241302674?icid=int.sj-fulltext.citing-articles.25>

Kaur, J., & Agnihotri, R. (2023). Enhancing email accessibility for visually impaired individuals: A voice-based email system using artificial intelligence. Available: https://www.researchgate.net/publication/373701158_Enhancing_Email_Accessibility_for_Visually_Impaired_Individuals_A_Voicebased_Email_System_using

Artificial Intelligence

Laslett, P. (1991) *A Fresh Map of Life*, Cambridge: Harvard University Press

Lazer, D. M., Baum, M. A., Benkler, Y., Berinsky, A. J., Greenhill, K. M., Menczer, F., & Zittrain, J. L. (2018). The science of fake news. *Science*, 359(6380), 1094–1096.

Lewandowsky, S., Ecker, U. K., & Cook, J. (2017). Beyond misinformation: Understanding and coping with the “post-truth” era. *Journal of Applied Research in Memory and Cognition*, 6(4), 353–369.

Livingstone, S., Stoilova, M., & Nandagiri, R. (2021). Children’s data and privacy online: Growing up in a digital age. *The International Journal of Communication*, 15, 699–725.

Luxton, D. D. (2016). *Artificial intelligence in behavioral and mental health care*. Academic Press.

Mezirow, J. (1999). Transformation theory—Postmodern issues. *Journal of Transformative Education*, 3(3), 222–232.

Mezirow, J. (2000). *Learning as transformation: Critical perspectives on a theory in progress*. Jossey-Bass.

Mitzner, T. L., Savla, J., Boot, W. R., Sharit, J., Charness, N., Czaja, S. J., & Rogers, W. A. (2019). Technology adoption by older adults: Findings from the PRISM trial. *The Gerontologist*, 59(1), 34–44. <https://doi.org/10.1093/geront/gny113>

Motta, M., Stecula, D., & Farhart, C. (2020). How right-leaning media coverage of COVID-19 facilitated the spread of misinformation in the early stages of the pandemic. *Canadian Journal of Political Science*, 53(2), 335–342.

National Institute on Aging. (n.d.). Talking to your older patients. National Institute on Aging. Retrieved March 23, 2025, from <https://www.nia.nih.gov/health/health-careprofessionals-information/talking-your-older-patients>

Ng, W. (2012). Can we teach digital natives digital literacy? *Computers & Education*, 59(3), 1065–1078. <https://doi.org/10.1016/j.compedu.2012.04.016>

Peek, S. T. M., Wouters, E. J. M., van Hoof, J., Luijkx, K. G., Boeije, H. R., & Vrijhoef, H. J. M. (2014). Factors influencing acceptance of technology for aging in place: A systematic review. *International Journal of Medical Informatics*, 83(4), 235–248. <https://doi.org/10.1016/j.ijmedinf.2014.01.004>

Pennycook, G., & Rand, D. G. (2019). Fighting misinformation on social media using crowdsourced judgments of news source quality. *Proceedings of the National Academy of Sciences*, 116(7), 2521–2526.

Pew Research Center (2017, May 17). Barriers to adoption and attitudes towards

Reuter-Lorenz, P. A. (2001). For aging brains, two hemispheres are better than one. University of Michigan News. <https://news.umich.edu/for-aging-brains-two-hemispheres-are-better-than-one/>

Shao, C., Ciampaglia, G. L., Varol, O., Flammini, A., & Menczer, F. (2018). The spread of fake news by social bots. *Nature Communications*, 9(1), 1–9.

Sicari, S., Rizzardi, A., Grieco, L. A., & Coen-Porisini, A. (2015). Security, privacy and trust in Internet of Things: The road ahead. *Computer Networks*, 76, 146–164. <https://doi.org/10.1016/j.comnet.2014.11.008>

Smith, A., & Jones, L. (2021). The right to be offline: Digital choice and inclusion for older adults. *Journal of Technology & Society*, 17(2), 67-84.

Stanford Center on Longevity. (n.d.). Older adults and technology: Moving beyond the stereotypes. <https://longevity.stanford.edu/older-adults-and-technology-movingbeyond-the-stereotypes/>

Tambini, D. (2017). Fake news: Public policy responses. Media Policy Brief 20. London School of Economics and Political Science.

Tsai, H. Y. S., Shillair, R., & Cotten, S. R. (2017). Social support and “playing around”: An examination of how older adults acquire digital literacy with tablet computers. *Journal of Applied Gerontology*, 36(1), 29–55. <https://doi.org/10.1177/0733464815609440>

UNESCO (2018) A Global Framework of Reference on Digital Literacy <https://uis.unesco.org/sites/default/files/documents/ip51-global-frameworkreference-digital-literacy-skills-2018-en.pdf>

UNESCO Institute for Statistics. (n.d.). Digital literacy and older adults. <https://uis.unesco.org/>

Van Deursen, A. J. A. M., & Helsper, E. J. (2015). The third-level digital divide: Who benefits most from being online? *Communication and Information Technologies Annual*, 29, 29–52. <https://doi.org/10.1108/S2050-206020150000010002>

Van Dijk, J. (2020). *The digital divide*. Policy Press.

Vaportzis E, Clausen MG, Gow AJ. Older Adults Perceptions of Technology and Barriers to Interacting with Tablet Computers: A Focus Group Study. *Front Psychol.* (2017) doi: 10.3389/fpsyg.2017.01687. PMID: 29071004; PMCID: PMC5649151.

Vaportzis, E., Clausen, M. G., & Gow, A. J. (2017). Older adults’ perceptions of technology and barriers to interacting with tablet computers: A focus group study. *Frontiers in Psychology*, 8, 1687. <https://doi.org/10.3389/fpsyg.2017.01687>

Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science*, 359(6380), 1146–1151.

Westerman, G., Bonnet, D., & McAfee, A. (2014). *Leading digital: Turning technology into business transformation*. Harvard Business Review Press.

Withnall, A. (2000). Older learners—Issues and perspectives. In *Lifelong Learning: A Global Colloquium*

World Health Organization (WHO). (2015). *World report on ageing and health*. World Health Organization. <https://www.who.int/publications/i/item/9789241565042>

Digital solutions for the care of older persons: challenges and opportunities

Chapter 3

The digital transformation of care - implications for the practice of carers

In this chapter we will examine the meaning of e-health in securing adequate health and care provision for older persons. We will also explore age-friendly practices for digital-mediated health and care provision. Digital transformation is affecting the practice of care. The successful implementation of digital solutions in healthcare requires a good balance between the use of digital tools and personal contact. As we are in a transitional phase when it comes to digitally transforming certain aspects and processes within healthcare, many aspects of e-health are left unexploited or not well regulated by existing therapeutic protocols and regulations. This brings challenges and opportunities to practitioners in care, such as issues of safety, integrity, and inclusion. In this context, we need to illuminate both the ambiguities and digital dependencies that are in their making in the care sectors when training care professionals on how to use e-health technologies effectively and inclusively.

Introduction to the digital transformation in care

Digital transformation is fundamentally changing the way we care for older adults. Modern technology enables a more efficient and cost-efficient approach to care (Ernst & Young, 2022). There are numerous examples, such as telemedicine, which provides remote health monitoring, thereby increasing access to care and reducing the need for in-person visits. It has also been applied in physiotherapy, promoting both physical fitness and psychological well-being in older persons. Electronic health records (EHRs) facilitate the sharing of information between healthcare professionals and caregivers, improving the coordination of care. Smart solutions, such as wearable devices or sensors, increase clients' self-sufficiency and safety. Digital technologies facilitate communication for people with sensory disabilities. Apps and devices help seniors with limited hearing or vision to communicate with caregivers and loved ones, thereby reducing the risk of social isolation and improving mental health. Artificial intelligence (AI) offers new opportunities for monitoring and analysing health data. It can draw from a large pull of knowledge to help in early intervention and tailored care to individual with specific needs and conditions. In the following section, we will explore some of these digital solutions in care.

While the integration of e-health and digital technologies presents significant opportunities for improving healthcare accessibility, efficiency, and personalization, it also comes with a set of challenges that must be addressed in social services and the community as a whole. In the previous chapters, we analyzed how and why ensuring safety and inclusion for all users, particularly vulnerable populations, is crucial. By tackling barriers to digital literacy,

accessibility, and equity, we can create an environment where technology enhances the healthcare experience for everyone, regardless of their age, abilities, or socioeconomic status. Ultimately, the successful adoption of these technologies will depend on collaboration, thoughtful implementation, and ongoing support from the non-digital segment of the care systems (i.e., people and care professionals) to ensure that no one is left behind

Benefits of digital services in care

Digital services in healthcare are transforming the way care is delivered, offering significant benefits to a wide range of people, including healthcare professionals, families, informal caregivers, and older adults (Domovy Online, 2024). Furthermore, integrating digital technologies into the care of older adults offers immense potential but also presents significant challenges that need to be addressed for successful implementation. Imagine a world where a doctor, instead of being bogged down by endless paperwork, can quickly access a patient's full medical history with a few clicks, freeing up time to focus on providing better care. Through electronic health records and telemedicine, this is now possible. Doctors can instantly share test results and treatment plans with other specialists, working together to ensure the patient gets the best treatment. Real-time data and predictive tools allow healthcare providers to make more informed decisions, potentially catching health issues before they become serious problems.

For families and informal caregivers, the benefits of digital healthcare are equally profound. Imagine a daughter who lives in another city, worried about her aging mother's health. Thanks to wearable health devices and monitoring apps, she can now keep an eye on her mother's heart rate, blood pressure, and activity levels in real-time from miles away. If something seems off, the app sends an alert, giving her peace of mind and allowing her to act quickly if necessary. Digital communication tools also mean she can consult her mother's doctor online without needing to arrange long-distance travel. In addition, the wealth of online educational resources empowers her with knowledge on how to best care for her mother, reducing stress and making her feel less alone in her caregiving journey.

Older adults themselves are reaping the rewards of digital healthcare tools. For those who find it difficult to travel to the doctor's office, telemedicine allows them to consult with their physicians from the comfort of home. Take, for example, an older man managing diabetes who used to struggle with getting to the clinic for frequent check-ups. Now, he can use a health app to track his blood sugar levels, which are automatically sent to his doctor. With personalized medication reminders and real-time feedback, he feels more in control of his health. These tools not only help maintain independence but also reduce the likelihood of emergency hospital visits by enabling early intervention when something is amiss.

To date, the value and the roles that the healthcare personnel have through human contact cannot be replaced by technology. But for healthcare systems, technology can play a valuable supplementary and facilitating role. The integration of digital services means better

use of resources and more effective management of patient care. Hospitals and clinics can reduce costs by offering remote consultations, allowing them to focus on patients who need in-person care the most. Policymakers and health administrators gain valuable insights from the data generated by digital health platforms, helping them make informed decisions to address public health concerns and ensure that care is more accessible, especially to those in underserved areas.

Modern digital tools

Digital health technology is constantly developing and offers innovative tools and solutions that promote a more connected, responsive, and client-centered system, particularly for older adults (Táborský & Horecký, 2022). These advancements are not just improving the quality of care but also enhancing the autonomy and safety of older persons in various ways. Wearable devices, such as smartwatches and sensors, are key in this transformation. They provide real-time monitoring of vital signs, including heart rate, oxygen saturation, and sleep patterns, enabling healthcare providers and informal carers to track a patient's condition remotely. Additionally, these devices can detect patient location, falls, or sudden changes in physical condition, sending alerts to caregivers, healthcare, or social care providers, which is crucial for individuals with mobility issues or cognitive impairments, like dementia (Ernst & Young, 2022). It is important to note that these technologies have been far from perfect, and developers work hard to increase their reliability.

Mobile health apps are another major contributor to improving the healthcare experience for older adults. These apps enable individuals to manage their medication, track physical activity, and keep in touch with loved ones. For older individuals, these tools also help combat social isolation, ensuring a sense of connection and support even when physical visits may not be possible. The concept of “smart homes” further complements these digital advancements. By integrating sensors that monitor movement, detect unusual activity, and ensure safety, smart homes help prevent or warn about accidents like falls or leaving appliances running, or when a person with advanced dementia leaves the bed or even the residence.

Telemedicine is rapidly becoming a cornerstone of senior healthcare, particularly for those with limited mobility or those living in rural areas. By allowing remote consultations with doctors, telemedicine bridges the gap between patients and healthcare professionals, offering convenient and timely medical advice without the need for travel. Furthermore, telehealth is expanding into mental health and rehabilitation services, offering therapy, counseling, and rehabilitation sessions remotely, which is vital for promoting mental well-being and supporting physical recovery when physical visits are not possible (National Telemedicine Center, University Hospital Olomouc, n.d.).

Virtual reality (VR) is another groundbreaking tool, particularly in cognitive training for older persons. VR allows especially those with neurodegenerative diseases such as dementia,

to engage in immersive and stimulating activities that promote cognitive function and mental engagement. These VR-based exercises offer an enjoyable and effective way to maintain cognitive abilities and escape for brief periods from the institutionalized environment of eldercare homes, which traditional methods might not provide.

Voice assistants, such as Amazon Alexa or Google Assistant, also play a key role in enhancing independence and promoting self-sufficiency. By providing voice-activated control over everyday tasks—such as turning on lights, setting reminders, or managing entertainment, these devices carry the potential of helping older adults navigate their daily lives more easily, reducing the need for physical assistance and offering a sense of control over their environment.

Together, these digital innovations can reshape care, offering a holistic approach that improves physical, mental, and emotional well-being. By enabling continuous monitoring, enhancing communication, and promoting assisted but autonomous living, these technologies empower older persons to live fuller, safer, and more connected lives. The ongoing integration of digital tools into senior healthcare promises to continue improving the quality of care and overall life satisfaction for older patients, while reducing the working load of an overburdened care workforce.

Practical examples of digital solutions in healthcare

- **The “Smart City” project in Barcelona**

This project uses sensors to monitor the movement and health of older adults, detect falls, and alert them to inactivity. The system allows seniors to be more independent and safer in their own homes for longer. (<https://www.barcelona.cat/infobarcelona/en/tema/senior-citizens>).

- **The use of virtual reality (VR) in therapy**

VR is used in the therapy of seniors with dementia. It helps to stimulate cognitive function and improve their mental health. VR also promotes rehabilitation and restoration of physical abilities.

<https://www.hartmann.info/cs-cz/novinky/l/cz/casopis-insight/virtualni-realita-po-maha-pri-ztrate-pameti-a-demenci>.

- **Telemedicine and telemedpoints**

Remote consultations via telemedicine allow seniors in small villages to access medical care. Telemedpoints provide basic health services and allow recording of physiological functions and consultations with doctors through video calls, increasing access to care in remote areas. (<https://www.telemedpoint.cz/zalezi-nam-na-vasem-zdravi.html>).

Challenges when assisting older adults in the use of ICTs

Digital tools in healthcare, such as telemedicine and health apps, can make life easier for both carers and older persons, offering quicker access to services and better communication with professionals. At the same time, many older people struggle with limited digital skills, accessibility issues, or hesitation to use new technologies. This is where carers play a vital role: by combining basic technical know-how with patience, clear communication, and encouragement, they can help older persons feel more confident and included in the digital world of healthcare.

Challenges of ICT use in healthcare

One of the primary concerns is personal data protection and privacy. With the widespread use of electronic health records (EHRs) and telemedicine (European Commission 2025), ensuring the security of sensitive personal data is critical. These systems must be fortified against cyberattacks and unauthorized access to protect individuals' privacy and maintain trust in digital healthcare solutions.

Another challenge is the gap in digital skills and motivation among both caregivers and older adults. Effective use of technology requires training and support to ensure that everyone can use digital tools proficiently. Bridging this digital gap is essential to unlocking the full potential of these technologies for care. Moreover, data interoperability and cooperation are crucial for seamless integration. Different systems—such as EHRs, telemedicine platforms, and wearable devices—must be able to communicate and share data efficiently. This requires collaboration among developers to create universal standards that ensure data compatibility across platforms.

The involvement of professionals who understand both ICTs and elder care is essential for successfully integrating these technologies. These experts can bridge the gap between technical solutions and practical caregiving needs, ensuring that technology serves its intended purpose in improving care for older adults. Ensuring user-friendliness and accessibility is also critical. For digital tools to be effective, they must be intuitive and easy for older adults to use, many of whom may have limited physical or cognitive abilities. Features such as large buttons, voice control, and customizable interfaces can make technology more accessible to this demographic.

While digital technologies have great potential to enhance the quality, efficiency, and personalization of care, their high costs can create significant barriers to access, particularly for individuals from lower-income backgrounds. To ensure that these innovations do not deepen existing inequalities, policymakers and healthcare providers have a responsibility to promote affordability and universal accessibility.

At the same time, it is crucial to preserve analogue alternatives in care services. Human

contact, empathy, and interpersonal interaction are irreplaceable elements of healthcare that no machine or digital platform can fully replicate. The shift toward digital environments must not come at the expense of those who are digitally illiterate or lack access to technology. In the absence of analogue options, these individuals risk being excluded from essential care. Therefore, a balanced approach is needed—one that embraces technological advancements while safeguarding inclusive, human-centered care, and analogue alternatives.

The necessary digital skills and competencies for carers

In today's rapidly evolving digital landscape, caregivers need to develop essential digital skills to provide quality care for older adults. As technology plays an increasingly central role in healthcare/social care, caregivers need to become proficient in various digital tools that can enhance the care they deliver. For example, a wide range of apps are implemented in monitoring physical activity, ensuring that daily routines are followed, and in some countries, even manage medication. Although we are still far from their wider application in the health sectors, these apps are often tailored to the specific needs of seniors, allowing caregivers to track health indicators and provide more personalized care. Familiarity with such apps can make a significant difference in the day-to-day management of care.

Although it is not applicable in all European countries, another critical skill for caregivers is Electronic Health Record (EHR) management. EHRs provide access to a client's comprehensive health history, enabling better coordination between healthcare providers and caregivers. The ability to manage these records, track changes in a senior's health status, and communicate effectively with doctors is vital for delivering high-quality, informed care. EHRs also improve communication between social and healthcare workers, ensuring that care plans are consistent and up-to-date. In the case of Sweden, understanding EHR and writing good notes for a patient's EHR is not always a straightforward process, which many times creates controversy and confusion on which system is better. In addition, such systems are often dissimilar and incompatible with each other, creating the loss of crucial information about the patients' health records.

Caregivers must also understand the fundamentals of cybersecurity to protect their clients' sensitive health data. Knowing how to use strong passwords, secure devices from unauthorized access, and recognize potential cyber threats is essential in safeguarding personal information. Knowing who has the right to be exposed to a patient's health data, either verbally or in writing, is crucial to protect the privacy rights of patients. As healthcare and social care increasingly move online, the risks of data breaches and unauthorised sharing of health data grow, making privacy and cybersecurity awareness two critical parts of caregiving.

The rise of telemedicine and remote consultation also demands that caregivers develop the skills to use these technologies effectively. Telemedicine platforms allow caregivers and

healthcare professionals to monitor clients' conditions and provide consultations remotely, which is especially beneficial for seniors with mobility issues. Understanding how to operate these platforms, who is the owner of the digital data produced and transmitted, ensures that professionals in senior care can facilitate remote health services and respond to clients' needs and reservations on time.

Supporting older people in the digital healthcare era

Building on the in-depth knowledge shared by our partner APSS ČR (Association of Social Services Providers of the Czech Republic), along with a thorough examination of a range of relevant literature and data sources, we can provide some insight to how assisting older persons in using information and communication technologies for healthcare can often feel like. For some older patients, health technologies can feel like navigating a maze with many obstacles, both visible and hidden, in a time of need and anguish. Imagine an older woman, once vibrant and independent, who now finds herself overwhelmed by the technology that promises to make her life easier, while being the only she has at her disposal to access healthcare. She is told that a simple app on her phone can help manage her medications or that a video call with her doctor can replace the tiring trips to the clinic. But for her, it's not that simple. The very idea of using these tools creates a mix of confusion, frustration, and anxiety.

One of the biggest challenges is the unfamiliarity with the technology itself. Many older adults have spent most of their lives in a world where healthcare was a personal, face-to-face experience. The shift to digital tools, with their screens, passwords, and complex interfaces, can be daunting. Some may have never used a smartphone or computer before, while others struggle with basic functions such as navigating a touchscreen or downloading an app. What feels intuitive to younger generations is often foreign territory for the older.

Then there's the fear of doing something wrong—pressing the wrong button, losing important information, or even accidentally breaking the device. This fear often leads to hesitation, with many opting to avoid technology altogether, even when it could greatly improve their access to healthcare. There's a sense of being left behind, watching the world move forward, but feeling stuck in a system that no longer seems designed for them.

Physical limitations, such as declining vision, hearing, or dexterity, also add layers of complexity. The tiny text on a smartphone screen might be impossible for someone with impaired eyesight to read, while touch-sensitive buttons can be tricky for those with arthritis or tremors. These physical barriers make using ICTs more difficult, turning what should be a helpful tool into yet another challenge to overcome.

Moreover, there's the issue of trust. Older adults often come from a generation that places a high value on face-to-face interaction, especially in something as important as healthcare. Asking them to trust a machine or app with their health information can be difficult, parti-

cularly when they don't fully understand how the technology works or worry about privacy breaches.

However, while these challenges are real, they are not insurmountable. With patience, empathy, and the right support systems, older adults can be empowered to engage with digital healthcare services. Imagine a scenario where a dedicated caregiver or family member patiently guides an older person through the steps of using a health app, explaining each function slowly and reassuring them along the way. Simple changes like larger text, voice commands, and more intuitive design can make a world of difference. Creating training programs that cater to different learning speeds and using language that is accessible and relatable can also help ease the learning curve.

The key to addressing these challenges lies in empathy and understanding. When we recognize the fears and barriers older adults face, we can create solutions that are not just about the technology but about making them feel confident and capable in using it. By providing ongoing support, building trust, and designing tools that are truly user-friendly, we can ensure that older adults are not left behind in the digital revolution of healthcare.

The goal is not just to teach them how to use the technology but to give them the tools to feel empowered in their healthcare journey. This can be achieved by including older persons with difficulties in navigating the digital-health environment in the design process of the respective apps. When older adults can confidently navigate ICTs, the results can be transformative. They gain access to better, more personalized care, maintain their independence longer, and ultimately enjoy a higher quality of life. Through thoughtful, inclusive approaches, the digital healthcare landscape can become a place where everyone, regardless of age or experience with technology, can thrive. Lastly, we in the St@ndbyMe project firmly believe that analogue alternatives must always be available for those beneficiaries whose treatment with digital solutions is not viable. We believe that this may be a costly solution for health providers, yet it does ensure that older “non-liners” are not excluded from the provision of adequate healthcare – which is a fundamental human right.

Disempowering practices

Disempowering practices in healthcare, whether in traditional or digital settings, can limit older persons' autonomy and well-being. This module explores common pitfalls when supporting older adults — especially those with low digital skills — and offers strategies to avoid them. By focusing on respectful, inclusive approaches, carers and healthcare providers can ensure that older adults' rights are upheld, their choices valued, and their active participation encouraged in both care and digital health.

Disempowering practices can undermine the autonomy of older persons, their dignity, and overall their well-being. The same applies when helping older adults with low digital skills get the most out of what the digital world has to offer regarding digital health services. This module will examine some common disempowering practices in traditional and digital health contexts and highlight strategies to avoid them. Avoiding these will help healthcare providers and caregivers with approaches that respect

the rights and abilities of older adults, fostering an environment where their voices are heard, their choices are respected, and they are actively engaged in their care and digital literacy journey.

According to studies (see McAuliff, Keys, Back, Williams, & Steltenpohl, 2014), factors that empower and disempower users were identified within three thematic areas:

- enrollment experiences
- access to care
- communication with managed care organizations and providers.

Now, imagine an older man named George, who has always been independent, managing his health and life with dignity. But as the years go by, his body begins to slow down, and he finds himself more reliant on digital healthcare services. George's encounters with the healthcare system, however, start to leave him feeling invisible. Doctors and caregivers often communicate with his digitally literate family members instead of addressing him directly. They make decisions about his treatment without fully explaining the options to him or seeking his opinion. Slowly, George feels his sense of autonomy slipping away, as though his voice no longer matters.

This disempowerment happens in subtle ways. When George is introduced to digital health services, the new tools — smartphones, apps, and wearable devices — are presented to him without much explanation, as though it's assumed he won't understand, engage, or object. He's handed a tablet and told that it will help him schedule appointments and monitor his health, but no one takes the time needed to ensure he knows how to use it. When he hesitates or struggles, the response is often impatience or taking the device out of his hands to do it for him, reinforcing the idea that he's incapable. Each of these moments chips away at his confidence, leaving him feeling more isolated and disconnected.

This kind of disempowerment is more common than it should be. In both traditional and digital healthcare contexts, older adults like George are often treated as passive recipients of care rather than active agents of their own health. Their autonomy is undermined when decisions are made for them without considering their preferences or abilities. Their dignity is compromised when healthcare providers, due to the lack of resources and time to dedicate to this task, fail to engage with them as individuals, assuming they are incapable of understanding complex information or navigating digital tools. These practices don't just affect their immediate healthcare experience; they have a deeper impact on their overall well-being, eroding their sense of self-worth and control.

In the digital world, the issue becomes even more pronounced for older adults with low digital skills. Many healthcare professionals find themselves at a crossroad, where they recognize the potential benefits of digital health services but feel overwhelmed by the mandate to use these very tools meant to help them in their role as carers. They are handed technologies without proper support, or worse, they are bypassed altogether, with the assumption that these technologies provide solutions, no matter what. This leaves them feeling dependent on the decisions of others on how to use healthcare information and services, further diminishing their independence as professionals.

But this doesn't have to be the reality. With the right approach and enough resources, healthcare providers and caregivers can foster a sense of empowerment in older adults, ensuring their voices are heard, their choices are respected, and they are active participants in their care. Imagine a different experience for George, where his health practitioner or a support service takes the time to sit down with him, explains his treatment options clearly, and asks for his opinion. The health system treats him as a partner agent of his own health, not just a patient to be managed. When George is introduced to digital tools, a dedicated person patiently walks him through how to use them, checking in regularly to make sure he feels comfortable and in control. He encourages George to try for himself, offering guidance and support along the way. This simple act of treating George as capable and valuable resource restores his confidence, allowing him to feel more in charge of his health once again.

Empowering practices go beyond just teaching skills; they are about honoring the individual's right to autonomy and dignity. In healthcare/social care, this means giving older adults the space to ask questions, make choices, and take an active role in their care. It means recognizing their abilities and providing the support they need to engage meaningfully with digital health and social services while offering support in ways that make them feel capable, not patronized.

By avoiding disempowering practices and fostering environments where older adults like George feel respected and supported, we can transform their healthcare experience. They become not just recipients of care but empowered individuals whose voices matter, whose preferences guide their treatment, and who can take full advantage of the benefits that the digital world has to offer. In this way, their journey through healthcare/socialcare—both traditional and digital—becomes one of partnership, respect, and active engagement, leading to better health outcomes and a renewed sense of agency.

Concluding remarks

Digital services are transforming healthcare, offering tremendous benefits not only to professionals but also to families, informal caregivers, and older adults themselves. These innovations promise more efficient, accessible, and personalized care. However, for many older individuals, engaging with digital health tools can feel like navigating a maze—complex, unfamiliar, and often overwhelming.

While the obstacles are real, they are not insurmountable. With empathy, patience, and well-designed support systems, older adults can be empowered to confidently use digital healthcare services. Picture a caregiver or family member gently guiding an older person through a health app, taking time to explain each function clearly, offering reassurance every step of the way. Small adjustments—like larger text, voice commands, and intuitive interfaces—can significantly ease the experience.

Training programs that embrace different learning styles and use accessible, relatable language are key to bridging the digital divide. At the heart of this effort lies a simple truth: understanding and empathy matter. When we truly listen to the concerns and challenges faced by older adults, we can

design solutions that not only teach them how to use technology, but also help them feel secure, confident, and in control of their healthcare journey.

Importantly, older adults should be included in the design and testing of digital health tools — especially those who struggle with digital environments. Their insights are invaluable in creating services that meet real needs and reflect real experiences. When older adults are supported to navigate ICTs with confidence, the impact is transformative: they gain access to more personalized care, maintain their independence longer, and enjoy a higher quality of life.

At the St@ndbyMe project, we are committed to ensuring that no one is left behind in the digital healthcare revolution. We strongly believe that analogue alternatives must always remain available for those whose circumstances make digital solutions impractical. While this may present added costs for healthcare providers, it is a necessary investment in equity, dignity, and inclusion — so that even the so-called “non-liners” receive the care they deserve.

Through thoughtful, inclusive, and compassionate approaches, we can build a digital healthcare system where everyone—regardless of age or digital experience—has the opportunity to thrive.

References

- DomovyOnline. (2024). The use of artificial intelligence (AI) in nursing homes opens new opportunities. Nursing Homes Online. <https://www.domovyonline.cz/aktuality/200-vyuziti-umele-inteligence-ui-v-domovech-pro-senior-y-ote-vira-nove-moznosti>
- Ernst & Young, (2022). Analysis of the potential for digitization and process optimization in social services in the Czech Republic (p. 62). www.atdz.cz.
- Ernst & Young, (2022). Analysis of the potential for digitization and process optimization in social services in the Czech Republic (p. 62). www.atdz.cz.
- European Commission. (2025, January 15). Electronic health (eHealth): Digital solutions in health and long-term care. Public Health. https://health.ec.europa.eu/ehealth-digital-health-and-care_cs
- McAuliff, V., Keys, L., Back, K., Williams, S., & Steltenpohl, M. (2014). Empowered and disempowered voices of low-income people with disabilities on the initiation of government-funded, managed health care. *Gaceta Sanitaria*, 28(4), 267–273. <https://doi.org/10.1016/j.gaceta.2014.03.003>
- National Telemedicine Center, University Hospital Olomouc. (n.d.). Introduction to telemedicine. <https://ntmc.fnol.cz/uvod-do-telemediciny>
- Táborský, M., & Horecký, J. (2022). Analysis of the potential for digitalization and process streamlining in social services in the Czech Republic (p. 62). Ernst & Young, s.r.o. Available at: www.atdz.cz.