

A Guide to Designing Digital Health Literacy Courses for Adults 50+



Liter **AGE4ALL**

Fostering e-inclusion to improve digital health literacy
and healthy ageing in adults 50+

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Abstract

“A Guide to Designing Digital Health Literacy Courses for Adults 50+” helps improve digital health literacy for people aged 50 and older. Using a design thinking methodology, this guide helps course creators to build an inclusive and effective curriculum that addresses the specific needs of older adults. The primary objective is to provide stakeholders with the tools necessary to design course content that empowers older adults, equipping them with the skills and confidence required to navigate digital health technologies. This, in turn, will enhance their access to healthcare and improve their overall well-being. This deliverable includes:

- The Purpose of the Guide
- Definition of the Key Audience
- Fundamentals of the Design Thinking Methodology
- Characteristics of the Target Population
- Course Framework

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Introduction

1. Introduction

The digital transition is advancing rapidly, leaving several vulnerable groups, particularly older adults in rural areas, struggling to keep up. Without the necessary digital skills and literacy to work, live, learn, and communicate effectively, these individuals face marginalization not only in the physical world but also in the digital realm. Furthermore, as the digital transformation in healthcare unfolds, the inadequate digital skills of vulnerable groups, such as those aged 50 and above residing in rural areas, may lead to health exclusion.

The Broadband Commission for Sustainable Development (2017) highlights that digital competencies encompass not only technical skills but also the awareness and attitudes individuals hold toward the use of technology [1]. This broader perspective on digital competencies underscores the necessity of understanding the implications of technology in our everyday lives. Significantly, users with low literacy often find themselves primarily in the awareness stage; they may recognize the existence of technology but lack the skills and confidence required for effective use. As a result, these individuals need substantial and targeted support to develop their digital abilities, enabling them to navigate technology more adeptly and engage fully in a technology-driven society.

Purposefully digital technology can assist individuals, even those with very low literacy levels and limited technology skills in navigating digital spaces and benefiting from relevant applications, such as those connecting users to health services.

This guide offers guidelines for developing a programming course aimed at improving older adults' ability to effectively use digital tools, including digital health tools and access information online. It provides the essential tools and methodologies to create an effective and inclusive learning experience for adults over 50. By employing a person-centered design approach, the guidelines ensure that the course content is tailored to address the specific needs, preferences, and challenges of adults over 50. Furthermore, incorporating design thinking as the basis for program development ensures that the content is relevant, accessible, and engaging while accommodating each learner's pace and learning style.



Key definitions

2. Key definitions

Literacy

According to the World Health Organization, literacy is the ability to identify, understand, interpret, create, communicate, and compute using printed and written materials in various contexts. It encompasses a continuum of learning, empowering individuals to achieve their goals, enhance their knowledge and potential, and engage fully in their communities and society [2].

Digital skills and competencies

UNESCO, in collaboration with the International Telecommunication Union, defines digital skills and competencies as multidimensional and existing on a spectrum [3]. This spectrum includes:

- Basic functional digital skills: these skills enable users to access digital technologies and perform basic operations.
- Generic digital skills: these involve using digital technologies in meaningful and beneficial ways, such as content creation and online collaboration.
- Higher-level skills: these skills involve using digital technology in empowering and transformative ways, such as software development.

Health literacy

WHO defines health literacy as the ability of individuals to access, understand, evaluate, and use health information and services in ways that promote and maintain good health and well-being. This encompasses not only the ability to read and comprehend health information but also the skills to critically think and interact to express personal and social needs that enhance health [4].

Digital health literacy

According to WHO is the ability to seek, find, understand, and appraise health information from electronic sources and to apply the knowledge gained to addressing or solving a health problem [5].



How the guidelines were developed

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3. How the guidelines were developed

The guidelines were developed through a collaborative effort among consortium partners who are committed to examining existing literature and sharing strategies to promote digital inclusion for adults of rural areas, particularly in enhancing their digital health literacy. To ensure these guidelines are inclusive and tailored to individual needs, the consortium conducted a total of sixteen focus groups: ten with adults aged 50 and older and six with health and social care professionals. In total, 74 participants contributed to the study, which included 51 adults over 50 and 23 practitioners.

Health and social care professionals provided valuable insights into their perceptions and beliefs regarding health literacy and the use of digital health technologies among adults over 50. Meanwhile, adults in this age group were invited to share their daily experiences and preferences related to digital technology.

The focus group sessions were audiotaped, and after transcribing and coding the discussions, a thematic analysis was conducted to identify the key themes that emerged from the data.



3.1. Target population

The primary target audience for these guidelines encompasses all stakeholders engaged in the enhancement of digital health literacy among adults aged 50 and older. Given that an effective digital health literacy course must be comprehensive, accessible, and impactful, the guidelines are directed toward the following professional groups:

- Health professionals: to guarantee that the health content delivered is both accurate and pertinent to the needs of the audience.
- Adult education specialists: to design the course structure in a manner that is easily understandable and engaging for participants.
- Information technology specialists: to oversee the development of the technical components of the course, including e-learning platforms and interactive digital resources.
- Psychologists: to incorporate learning methodologies that address the cognitive and emotional dimensions of the learners' experiences.
- Communication experts: to ensure that the language utilized throughout the course is clear, precise, and accessible to all participants.
- Representatives from the adult population aged 50 and above: to engage individuals within the target demographic who can evaluate the course and provide constructive feedback on its effectiveness and accessibility.

This comprehensive approach aims to foster an inclusive learning environment that enhances digital health literacy among adults over 50, ultimately improving their engagement with digital health resources.

3.2. Barriers for digital inclusion

Participants aged 50 and over in various focus groups do not represent a homogeneous demographic, and not all individuals possess the requisite offline competencies essential for digital engagement. Nonetheless, it is critical to identify the primary barriers to digital inclusion within this age group.

Observations from focus group sessions involving individuals over the age of 50 indicate that, although a considerable number are online, significant enhancements in their digital engagement are still necessary. Those who are connected frequently underutilize the potential of the internet, predominantly due to insufficient digital literacy. Most participants struggle to locate and critically evaluate the quality and credibility of online information. While they commonly utilize search engines such as Google to acquire information, they rarely engage in verification of the reliability of the obtained results. In fact, only a minority of participants understood the significance of verifying whether the encountered content holds scientific validity. Furthermore, nearly all participants exhibited limited digital communication skills. Many experienced challenges in utilizing social media and messaging platforms; several retired individuals found it difficult to compose and send emails, and while some were able to read their emails, they encountered obstacles in formulating responses. This deficiency in digital competence largely arises from a lack of familiarity with various devices, including computers and smartphones. This unfamiliarity is often exacerbated by a lack of motivation to engage with digital tools, driven by apprehensions surrounding online threats such as viruses and phishing, as well as a pervasive belief that acquiring digital skills is unnecessary.

From the perspective of health and social services, older adults, particularly those residing in rural areas, perceive those low-income levels, coupled with a lack of motivation to leverage digital resources, significantly impede digital literacy and inclusion. Health professionals have reported that nearly half of older adults possess only basic technology knowledge, thereby rendering access to institutional applications such as national health service platforms and banking applications particularly challenging.

3.3. Characteristics associated with low skilled people

3.3.1. Cognitive challenge

Many individuals over the age of 50, particularly those over 65, may find it difficult to transfer knowledge gained from one context to another. For instance, they might struggle to apply what they learn from online instructional videos to real-life situations. Additionally, navigating information hierarchies, such as app menus, can be challenging for them.

3.3.2. Trust

Individuals with low digital skills who participated in the focus group sessions expressed a lack of confidence in using digital devices. Many reported fears of damaging a device or falling victim to phishing and viruses. Additionally, they described feeling confused by the technology and expressed mistrust toward it, often downplaying its impact on their lives.



3.3.3. Social

The participants in the focus group often reported needing assistance from friends or family to manage their digital devices. They mentioned that if they struggle with technology and don't have someone physically present to help, they tend to give up, which leads them to devalue the importance of online tutorials in the learning process.

3.3.4. Motivation

The participants in the focus group sessions indicated that motivation plays a significant role in their ability to effectively use digital devices. For instance, they learn to navigate social media platforms such as Facebook and WhatsApp to communicate with family and friends. Additionally, they show a keen interest in learning how to manage health apps to better oversee their health.

3.3.5. Resources

Health and social professionals indicate that individuals over 50 in rural areas are more likely to face limited or unreliable internet connectivity and may be sensitive to or constrained by data usage.



Digital Competence Framework

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4. Digital Competence Framework

Focus group discussions revealed that many participants experience difficulties when sending text messages and emails, emphasizing their need for support in navigating essential digital platforms. In response, the course curriculum will provide digital competencies aimed at addressing the “foundation level” in alignment with the framework established by the Human Capital and Employment Unit of the Joint Research Centre for the Directorate General for Employment, Social Affairs, and Inclusion of the European Commission [5].

The digital framework defines digital competencies in five key areas:

1. Information and data literacy
2. Communication and collaboration
3. Digital content creation
4. Safety
5. Problem-solving

After analyzing insights from the focus group discussions and the individual motivations shared by participants, we have decided not to include the third competency area—digital content creation—in this guide. This decision is based on a thorough evaluation of the group’s needs and priorities, allowing us to focus on topics that align more closely with their interests and goals. Additionally, we will introduce an initial session where participants will learn about the importance of digital health literacy, as well as how to use smartphones and computers effectively.



4.1. Course content

4.1.1. Information and data literacy

This domain will help course participants to develop the skills necessary to clearly identify and articulate specific health-related information needs across various contexts. Participants will learn how to efficiently find and retrieve relevant digital data, health information, and content. They will also be trained to critically evaluate the appropriateness and credibility of sources as well as the quality of their content. Additionally, participants will gain the ability to systematically organize, store, and manage digital health information in a way that promotes accessibility and usability within the framework of digital health literacy. Within this domain the described above competences will be addressed:

. Browsing, searching and filtering data, information and digital content

At the beginning of the program, participants will explore device usage and navigation techniques. They will learn how to efficiently use web browsers for internet access and employ search engines, such as Google, to find pertinent information. Furthermore, participants will learn to articulate their information needs clear and precisely, which help them conduct effective data searches in digital environments.

For instances, participants will be able to identify relevant websites, blogs, and digital databases from a carefully curated list included in the LiterAGE4ALL website. This will enable them to research literature on a health-related report topic. They will develop the skills necessary to find and evaluate literature within these resources, facilitating efficient navigation among them.

Additionally, participants will learn how to choose and modify the most effective keywords provided during the training course. This will enhance their search results and improve their ability to find pertinent health information.

. Evaluating data, information and digital content

This competency is designed to empower participants with the essential skills needed to analyze, compare, and critically evaluate the credibility and reliability of various data sources, information, and digital content related to digital health literacy. For instance:

With autonomy and appropriate guidance, participants will be able to:

- Assess the credibility and reliability of commonly used health-related data sources, information, and digital content.

With the support of a tutor, participants will be able to:

- Identify the credibility and reliability of blogs, digital databases, and other literature sources frequently used in the health sector.

. Managing data, information and digital content

This module is strategically designed to empower participants with the skills needed to organize, store, and retrieve health-related data and information using digital technologies, while also fostering an understanding of how to manage these resources effectively in the field of digital health literacy.

At a foundational level, with autonomy and appropriate guidance, participants will be able to:

- Identify basic digital tools and applications for organizing and storing health-related information.
- Efficiently retrieve stored health data for specific health-related tasks

With ongoing support, participants can also:

- Recognize reliable health APPs and services that facilitate personal health management.
- Utilize simple digital technologies to empower themselves and actively engage in health-related decisions and activities.

4.1.2. Communication and collaboration

This domain will enable course participants to develop competences in communication and engagement through digital technologies.

. Interacting through digital technologies

This module is designed to empower participants with essential skills for interacting through various digital technologies while mastering effective communication methods applicable in both personal and healthcare contexts. Participants will begin by gaining a comprehensive understanding of the key email features, including how to send, receive, and manage messages efficiently. They will also become proficient in navigating social media platforms and messaging applications.

By the conclusion of this training, participants will confidently possess the skills to choose appropriate digital technologies that enhance interaction and to identify effective communication methods tailored to specific healthcare scenarios, with guidance available when necessary.

. Sharing through digital technologies

This module is focused on empowering participants with critical skills for effectively sharing health-related data, information, and digital content through suitable digital technologies. It specifically enhances participants' understanding of their vital roles as intermediaries and emphasizes the importance of referencing and attribution practices in the realm of digital health literacy.

By the end of this training, participants will confidently:

- Identify and utilize the most suitable digital technologies for monitoring their health and disseminating health-related data, information, and digital content.
- Recognize and apply essential referencing and attribution practices when sharing health information.

Moreover, participants will develop strong capabilities to:

- Utilize basic digital tools to effectively act as intermediaries in the dissemination of health-related digital content to others.
- Consistently implement accurate attribution practices to acknowledge the sources of health-related data and information.

. Engaging in citizenship through digital technologies

This module is designed to empower participants with the essential skills needed for active involvement in health-related activities by utilizing both public and private digital health services. Additionally, it encourages self-empowerment and promotes active health citizenship by leveraging appropriate digital technologies.

By the end of this training, participants will be able to:

- Identify key digital health services to engage in health-related initiatives.
- Recognize and use suitable digital technologies to foster self-empowerment and make informed decisions about their health.

. Collaborating through digital technologies

This module is designed to empower participants with the essential skills needed to effectively control digital tools and technologies for collaborative processes in health, as well as for the organization and management of their health-related data. It fosters improved communication between health professionals and participants.

At a foundational level, participants will be able to autonomously select and utilize basic digital tools and technologies for health-related activities, including the organization and management of their health information, with appropriate guidance provided when necessary.

. Netiquette

This module is designed to empower participants with the essential competencies for navigating behavioral norms and best practices in the context of digital technologies and health-related interactions.

The framework highlights the importance of tailoring communication strategies to diverse audiences while recognizing cultural and generational differences within digital health environments.

At a foundational level, and with the necessary autonomy and guidance, participants will be able to:

- Identify basic behavioral norms and best practices for using digital technologies in digital health contexts.
- Select suitable communication methods and strategies appropriate for specific audiences in health-related settings.
- Recognize key elements of cultural and generational diversity that influence participation in digital health interactions.

For example, at this foundational level, participants will demonstrate the ability to:

- Identify their own digital health identity.
- Describe basic strategies for protecting their online health reputation.
- Recognize the health data generated through their use of various digital tools, environments, or services.

4.1.3. Safety

. Protecting devices

This module is designed to equip participants with the skills necessary to protect their devices and digital health content, understand the risks and threats present in digital health environments, and be informed about safety and security measures, all while prioritizing reliability and privacy.

At a fundamental level, participants will be able, with autonomy and appropriate guidance when needed, to:

- Identify effective methods for safeguarding their devices and digital health content.
- Recognize basic risks and threats within digital health environments.
- Implement straightforward safety and security measures in health-related digital contexts.
- Ensure the reliability and privacy of their health data through simple practices.

. Protecting personal data and privacy

This program is designed to equip participants with essential competencies for safeguarding personal data and privacy within digital environments. Its primary objective is to facilitate an understanding of the appropriate use and sharing of personally identifiable information while protecting oneself and others from potential risks. Furthermore, participants will learn about the role of privacy policies in digital services, which inform users about the handling of their personal data.

Upon completion of the program, participants, exercising a degree of autonomy and receiving appropriate guidance, when necessary, will be able to:

- Identify effective strategies for protecting personal data and privacy in digital contexts.
- Recognize safe and responsible methods for utilizing and sharing personally identifiable information, thereby minimizing potential harm to themselves and others.
- Comprehend fundamental privacy policy statements that elucidate the usage of personal data in digital health services.

At a foundational level, with an emphasis on autonomy and appropriate guidance, when necessary, participants will be able to:

- Identify effective strategies for protecting personal data and privacy within digital environments.
- Comprehend the usage and sharing of personally identifiable information while ensuring the protection of both them and others from potential harm.
- Recognize fundamental privacy policy statements that articulate how personal data is utilized in digital health services.

4.1.4. Problem solving

. Solving technical problems to identify technical problems when operating devices and using digital environments, and to solve them (from troubleshooting to solving more complex problems)

This module aims to cultivate participants' competencies in recognizing and addressing technical issues encountered while operating devices and navigating digital health environments. The scope of these competencies ranges from basic troubleshooting to the resolution of more complex technical problems.

Designed specifically for the digital health context, this framework empowers participants with the fundamental skills required to effectively manage technical challenges.

At a foundational level, participants will gain the ability to:

- Identify and articulate basic technical problems related to the operation of devices and the utilization of digital environments.
- Recognize and propose straightforward solutions to these identified issues, employing a degree of autonomy while also knowing when to seek appropriate guidance.

. Identifying needs and technological responses

This module is designed to equip participants with the necessary skills to safeguard personal data and privacy within digital health environments. It also helps participants assess their needs, identify, evaluate, select, and use digital tools and technological solutions, as well as solve related challenges. Furthermore, participants will learn how to adjust and customize digital environments to meet personal needs (e.g., accessibility).

At a basic level, with autonomy and appropriate guidance where needed, participants can:

- Identify their personal needs in digital contexts.
- Recognize simple digital tools and potential technological responses to address those needs.
- Choose basic ways to adjust and customize digital environments to suit personal needs.

Example:

- Participants can adjust an app according to their preferences (e.g., language settings, accessibility features).

. Identifying digital competence gaps

This module aims to help participants understand where their digital competence needs to be improved or updated. It also enables participants to support others in their digital competence development and to seek opportunities for self-development to stay up to date with the evolving digital health landscape.

At a basic level, with autonomy and appropriate guidance where needed, participants can:

- Recognize areas where their digital competence needs improvement or updating.
- Identify opportunities for self-development and ways to keep up to date with digital advancements.



Conclusion

5. Conclusion

These comprehensive guidelines outline a thoughtful and constructive framework of recommendations and course content aimed at enhancing digital inclusion for individuals aged 50 and above, particularly those living in rural areas. Findings from focus groups reveal significant barriers to digital inclusion, including a lack of basic digital skills, fear and distrust of technology, low motivation, and structural challenges such as limited internet access. These obstacles prevent older adults from fully engaging with digital health resources and reaping the benefits of modern healthcare technologies.

To tackle these challenges, a comprehensive and inclusive approach is essential. The proposed digital literacy course aims to equip participants with foundational competencies in information and data literacy, digital communication, security, and problem-solving. By prioritizing practical learning experiences, the course will help individuals navigate online health information, interact effectively on digital platforms, and protect their personal data.

A key insight from the study is that motivation plays a crucial role in digital engagement. Older adults are more likely to adopt digital tools when they perceive direct benefits, such as staying connected with family or managing their health. Therefore, fostering confidence and autonomy in using digital health technologies is essential. The course structure will emphasize real-life applications, providing a supportive and interactive learning environment that encourages ongoing digital exploration.

In conclusion, bridging the digital divide for older adults requires not only technical training but also an understanding of their cognitive, social, and emotional challenges. By addressing these factors, this initiative aims to empower individuals with the necessary skills to navigate the digital world confidently, improving their access to healthcare information and services while enhancing their overall well-being. This proficiency will ultimately lead to an enriched and more fulfilling livelihood, fostering greater independence and participation in today's increasingly digital world.

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