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Digital-in SKILLS FOR inCLUSION

Digital-in

DIGITAL SKILLS FOR THE INCLUSION OF DIGITALLY VULNERABLE GROUPS: A DVGS' NEEDS-BASED APPROACH TO DIGITAL SKILLS PROVISION IN ADULT EDUCATION

DIGITAL SKILLS TRAINING GUIDE FOR EDUCATORS: RECOMMENDATIONS FOR INCLUDING VULNERABLE GROUPS

Deliverable No

3.1

EXECUTIVE SUMMARY

The DIGITAL-IN manual with guidelines for digital inclusion educators and stakeholders provides recommendations on how to adapt existing digital literacy training or how to create training that will respond to the needs of digitally vulnerable learners - such as the seniors, micro and very small business owners and others.

OBJECTIVES AND METHODOLOGY

The main objectives of the DIGITAL-IN project are to identify the key areas where DVGs lack digital skills and to develop educational programmes that address these gaps. The project used a comprehensive approach involving desk research, interviews with relevant stakeholders, as well as questionnaires with vulnerable individual learners to understand their needs and address digital literacy challenges. In addition, the project has engaged digital skills trainers through the implementation of thematic working groups, thus incorporating the knowledge of educators working directly with such learners.

This method ensured a detailed understanding of the digital landscape and provided the basis for the development of effective strategies, which have been elaborated through different working groups involving the project partners and different experts in the different materials covered by the manual.

Furthermore, the guidelines contained in this manual are to be discussed and enriched with the feedback from a wide range of digital inclusion stakeholders and experts from across the EU in a dedicated workshop.

CONTEXTUALIZATION OF THE PROJECT

The DIGITAL-IN - "DIGITAL Skills for the INclusion of Digitally Vulnerable Groups: a DVGs' needs-based approach to digital skills provision in adult education,"- is a project funded by the European Union's Erasmus+ Programme and implemented by a consortium composed of partners from Greece, Cyprus, Italy, Lithuania, and Spain. DIGITAL-IN aims to address the challenge of digital literacy for two particularly vulnerable groups in terms of digital skills: seniors and small business owners. The project seeks to ensure that all citizens have the necessary competencies to fully participate in the digitalised society. By addressing current educational gaps and preparing for sustainable long-term improvements, the project contributes significantly to building a more digitally inclusive Europe.

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4	Intercollege	INTERCOLLEGE	√
5	JSC Toro Group	TORO	√

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INTRODUCTION AND PURPOSE OF THE MANUAL

In alignment with the objectives set forth in this project, whose aim is to reduce the digital literacy gap affecting two particularly vulnerable groups—seniors and small business owners—a comprehensive study has been conducted in each of the consortium's member countries to precisely identify the needs and challenges these groups face in their digitization process. The results of this analysis have provided sufficient information to develop a manual of recommendations specifically directed at digitalization trainers.

Training the trainers is a crucial first step toward reducing the digital divide among our Digitally Vulnerable Groups (DVGs). Throughout the consortium, we have adhered to a learner-centred approach, which permeates all phases of the digital training process. In this context, it is essential to gain a thorough understanding of the characteristics, needs, and challenges specific to the target groups in order to design and implement an effective and adapted training process.

This manual, with guidelines for trainers and other digital skills education stakeholders, is structured into four clearly defined sections:

1. Definition of Profiles: This section provides a detailed description of the target groups—seniors and small business owners— **analysing** their characteristics, specificities, needs, and challenges.

2. Pedagogical Strategies: This section focuses on pedagogical approaches that offer effective responses to the learning challenges faced by our Digitally Vulnerable Groups (DVGs). **It also explores** the socioeconomic issues that significantly impact the learning experience, providing recommendations for both trainers and stakeholders. The consortium recognizes the relevance of socioeconomic factors in education, particularly in adult education, and **considers their integration** fundamental to the success of the training process.

3. Recommended Contents: This section presents an extended list of specific digital knowledge topics suitable for the learners in focus. The recommended topics have been developed based on the needs identified through interviews and **are** complemented by the knowledge of experienced digital skills tutors. It is important to note that the proposed content is fully aligned with the needs of seniors and small business owners, without being exclusionary. These suggestions are intended to assist trainers in tailoring their materials to the specific needs of each group.

4. Communication Strategy: The final section is dedicated to effective communication. It provides recommendations on how to adequately convey information to these two groups, considering their specific characteristics. Additionally, useful resources are provided to help adapt materials and teaching methods, making them more didactic, accessible, and relevant for our DVGs.

With this manual, the consortium aims to provide practical and well-founded tools for trainers and other stakeholders, supporting the digitization process of vulnerable groups. In doing so, it seeks to reduce the existing digital divide and contribute to the construction of a more inclusive and equitable society.

LIST OF ABBREVIATIONS

Table 1. List of abbreviations

AI	Artificial Intelligence
AT	Assistive Technology
CL	Collaborative learning
CRM	Customer Relationship Management
DB	Data Base
DVG	Digital Vulnerable Groups
GSM	Global System Mobile communication
H2H	Human to Human
HMD	Head-mounted displays
IGL	Intergenerational Learning
ILT	Instructor-Led Training
L&D	Learning and Development
LMS	Learning Management System
MS Office	Microsoft Office
NVC	Nonviolent Communication
PC	Personal Computer
POS system	Point-Of-Sale System
SBO	Small Business Owner
SEM	Search Engine Marketing
SEO	Search Engine Optimization
SES	Socioeconomic Status
SMS	Short Message Service
VARK	Visual, Aural, Read/Write, Kinesthetic

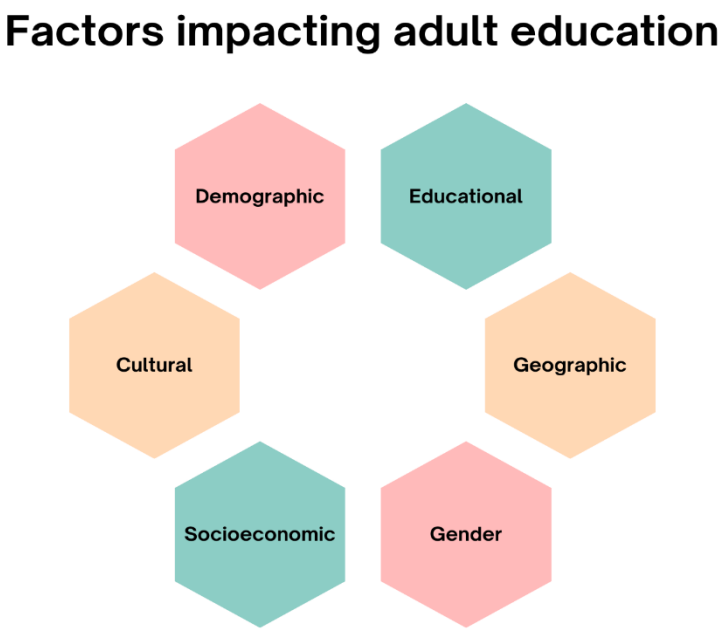
DEFINITION OF PROFILES

Adult education has unique characteristics that distinguish it markedly from traditional education for children and young people. Education is generally perceived as something that takes place in the early stages of life, when it is compulsory, and programmes are designed for learners whose primary responsibility is study.

However, adult education faces several additional challenges and complexities that need to be addressed. These challenges stem from several factors, which can significantly influence the willingness and ability of adults to participate in formal and informal educational programmes. Teaching adults can be more complicated than teaching young people, as adults often have specific reluctances and obstacles that require adaptive and comprehensive solutions. Figure 1 highlights the factors affecting adult education in order to better understand the specific needs they may present.

These factors include **demographic, educational, geographic, gender, socioeconomic, and cultural influences**, all of which play a crucial role in shaping adult learners' experiences. Understanding these factors helps educators design tailored programs that address the unique needs of adult learners and overcome the barriers they may face. The image below illustrates these key factors impacting adult education:

Figure 1. Factors impacting adult education



SENIOR LEARNERS

DEFINITION OF KEY CHARACTERISTICS

In today's digital age, technology has revolutionised the way we interact with the world around us, and seniors are no exception. Digitalisation has become increasingly important in the lives of seniors, offering a wide range of benefits from access to information and services to social connection and entertainment. In this era of technological advances, understanding the importance of digitalisation for seniors is crucial to ensure their inclusion and well-being in an increasingly connected society. In this regard, we will explore the various reasons why digitisation is crucial for the older population, as well as the challenges and solutions associated with this process of technological adaptation.

Following the interview period in which we closely examined the real needs and challenges that seniors face in their daily lives, as well as their use of new technologies and their interest in learning, we can identify several reasons that support the importance of digitalisation for this demographic group.

Firstly, a recurring theme during the interviews was the sense of loneliness experienced by seniors, as well as their perceived distance from family and friends, especially younger ones. In this respect, digitalisation plays a crucial role in allowing them to stay connected with society at large, as well as with their loved ones, using social networks, video calls and instant messaging. These tools contribute significantly to mitigating the problems of social isolation and loneliness, mentioned above as common in this segment of the population (Vercruyssen et al., 2023).

In a broader sense, digitalisation offers seniors the opportunity to participate in the community, through online platforms, interest groups and virtual community activities. This integration into digital life can enrich their social life and provide them with a sense of belonging and connection to an increasingly digitised society.

During our interviews and direct contact with seniors, we have observed a recurring concern: the gradual loss of independence in their daily lives and the consequent fear of becoming a burden to their relatives, together with feelings of worthlessness when comparing their current situation with their more active past.

In terms of autonomy and independence, technology can play a key role in alleviating these feelings. As Vercruyssen et al. (2023) refers, technology offers seniors the possibility to maintain their independence for longer through a variety of tools, such as virtual assistants that can answer questions and control devices in the home, as well as mobile apps and online services that make it easier to manage daily tasks such as shopping, payments, and banking. This not only improves their quality of life by providing them with practical tools, but also reduces their dependence on the assistance of family members, which is especially relevant when faced with mobility issues, which are common in this demographic group.

Considering the prevalence of health problems among seniors, digital literacy in healthcare becomes indispensable. Digital tools, such as telemedicine and health apps, allow seniors to access medical services without leaving home schedule consultations and track their health status remotely.

As many seniors live alone, digitalisation also plays a crucial role in providing them with a sense of security in case of emergencies. There are devices and applications designed to enhance their safety, such as personal alarms, fall detectors and remote monitoring systems that alert caregivers or family members in case of need (Cruz Roja, 2021).

In addition to ensuring safety, technology can also mitigate feelings of loneliness by providing companionship and entertainment. Apart from voice assistants with which they can interact, the internet offers a wide range of educational and entertainment resources, such as online courses, e-books and movies, allowing them to stay mentally active and enjoy various forms of entertainment.

In conclusion, as society moves towards digitalisation, it is essential that seniors are not excluded. In this sense, digital inclusion ensures that seniors have equal opportunities to take advantage of the benefits that technology offers. Digitalisation, if well implemented, can significantly improve the quality of life of seniors, helping them to stay connected, active, and autonomous. However, it is crucial to provide education and support so that they can use these technologies effectively and safely (Vercruyssen et al., 2023).

The primary objective of this section is to define the key characteristics of seniors in the context of digital skills. This analysis draws on insights from national and comparative reports conducted across various partner countries under the DIGITAL-IN project, as well as desk research and contemporary bibliography. By understanding the demographic, educational, geographic, gender, socio-economic, and cultural factors that influence digital literacy among seniors, targeted strategies can be developed to enhance their digital competencies.

The following key characteristics emerged from work in the national and comparative reports, supplemented by desk research and bibliographic resources, providing a comprehensive framework to inform the development of tailored educational programs and interventions aimed at bridging the digital divide for seniors and fostering an inclusive digital society.

You can find a table with an overview of factors to consider for the development of senior learners in Annex 1.

NEEDS

Digital literacy is becoming increasingly crucial for seniors, defined as individuals aged 60 and above, to maintain their independence, access essential services, and stay socially connected. The demographics of seniors who engage in digital literacy programs reveal significant insights into their needs and challenges, focusing on age distribution, gender distribution, and socio-economic status.

Age Distribution

Seniors participating in surveys conducted under the DIGITAL-In National and Trans-national Comparative Report fall within the 65 to 85+ age range. The comparative analysis shows that across all age sub-groups (65-74, 75-84, and 85+), most seniors (82%) consider digital skills essential for staying socially included in today's society (Kythreotis & Ioannides, 2024). In addition, and according to the study "Older Adults' Reasons to Participate in Digital Skills Learning," seniors often engage in digital literacy programs to maintain their social connections and manage daily tasks independently (Pihlainen et al., 2022).

Younger seniors, those between 65 and 74, are generally more adaptable to new technologies compared to those in the 85+ age group. This younger subset often seeks to enhance their existing skills to keep up with societal changes and maintain an active role within their communities. Equally, the oldest seniors may focus more on using digital tools for essential services, such as telemedicine and online banking, which are crucial for their day-to-day living. The adaptation and learning process for older seniors might be slower, but the benefits gained from digital literacy can significantly impact their independence and quality of life.

Gender Distribution

Gender distribution data indicates a higher participation rate among women. This greater engagement can be attributed to their proactive approach to maintaining social connections and managing daily tasks independently. Research highlights that older women are often more motivated to enhance their digital skills to be less dependent on the help of others in everyday life. Specifically, the study "Older adults' reasons to participate in digital skills learning" states that "The share of women who said they wanted to be less dependent on the help of others in everyday life when dealing with digital technology was about ten percentage points higher, whereas a slightly higher share of men presented the reasons study" (Pihlainen et al., 2022). Women tend to prioritise learning digital skills that enhance their ability to communicate with family and friends, thus combating social isolation. They are more likely to engage in social media platforms and video calling applications to stay in touch with loved ones. Men, on the other hand, often focus on the practical aspects of digital literacy, such as managing finances and accessing news and information. This difference in focus can influence the design and delivery of digital literacy programs, highlighting the need for gender-sensitive approaches that cater to the distinct preferences and motivations of both women and men.

Socio-Economic Status

Socio-economic status significantly influences seniors' access to digital literacy resources. Those from higher socio-economic backgrounds generally have better access to digital devices and internet services, contributing to a higher baseline of digital skills. On the other hand, seniors from lower socio-economic backgrounds face substantial barriers, including financial constraints and limited access to technology. Income levels directly impact the ability of seniors to purchase necessary digital devices and maintain reliable internet connections. Higher-income seniors are more likely to own multiple devices, such as smartphones, tablets, and computers, providing them with more opportunities to engage with digital

content. Additionally, they can afford higher-speed internet services, which enhances their online experience and reduces frustration caused by slow connections. In contrast, lower-income seniors might rely on older, less capable devices and may only afford limited internet services, restricting their ability to fully participate in digital activities.

Employment status also plays a crucial role. Retirees often have more time to dedicate to learning new digital skills, yet they might lack the structured opportunities that a workplace environment provides. Many seniors may view digital literacy to remain relevant and connected post-retirement, whether at the societal level or within their immediate social circles. For those still working, part-time or full-time, digital literacy can be essential for job performance and career advancement, especially as many jobs increasingly require digital competencies.

Education Level and Previous Digital Experience

The education level and previous digital experience among seniors significantly impact their digital literacy. Generally, seniors with higher levels of formal education tend to have better digital skills and are more confident in adopting new technologies. This is also supported by the findings from the "Barriers to Digital Inclusion for Seniors" study, which indicates that seniors with more education are better able to navigate digital environments and are more likely to recognize the benefits of digital literacy (Tomczyk et al., 2023). Moreover, those who have had exposure to digital technologies during their professional lives or through personal use are generally more comfortable and skilled in using digital tools. The "Exploring AI Literacy Among Older Adults" study found that seniors with prior experience using AI-enabled products, such as smart home devices and voice assistants, showed a greater interest in learning more about AI and technology in general (Kaur & Chen, 2023). These seniors often serve as early adopters within their peer groups, encouraging others to embrace digital tools.

For seniors without prior digital experience, the learning curve can be steep. They may require more basic, hands-on instruction and continuous support to build their confidence and skills. Educational programs need to consider these differences, offering tailored content that addresses both the needs of beginners and those with some prior knowledge. Interactive and user-friendly learning environments significantly enhance seniors' engagement and retention of digital skills, as highlighted by the "Handbook for Educators" (MILEAGE, 2021).

Digital Literacy Levels

Digital literacy levels among seniors vary significantly, impacting their ability to effectively engage with digital tools and platforms. Seniors with prior exposure to digital technologies, whether through professional lives or personal use, generally demonstrate higher levels of digital competence. This prior experience translates into a better understanding of digital devices and greater confidence in using them. On the other hand, those with minimal or no prior exposure face a steeper learning curve, often requiring foundational training and continuous support to build their skills and confidence.

Research indicates the need for tailored educational programs that address these varying levels of digital literacy to foster an inclusive digital learning environment. Interactive and hands-on learning experiences, such as workshops and one-on-one tutoring sessions, have proven particularly effective in enhancing engagement and retention among seniors. Continuous assessment and adaptation of training materials ensure that learners can progress at their own pace, reflecting changes in their abilities and confidence levels.

Educational Background

The educational background of seniors significantly impacts their digital literacy, influencing their ability to adopt and utilise digital technologies. Generally, seniors with higher levels of formal education tend to have better digital skills and are more confident in using new technologies. This correlation between education and digital competence is supported by findings from the "Barriers to Digital Inclusion for Seniors" study, which indicates that seniors with more education are better equipped to navigate digital environments and are more likely to recognize the benefits of digital literacy (Tomczyk et al., 2023).

Seniors who have had exposure to digital technologies during their professional lives or through personal use generally exhibit higher comfort and proficiency levels with digital tools. They often serve as early adopters within their peer groups, encouraging others to embrace digital tools. In contrast, seniors without prior digital experience face a steeper learning curve, often requiring more foundational training and continuous support to build their confidence and skills.

Educational programs must address these differences by offering tailored content that caters to both beginners and those with some prior knowledge. Interactive and user-friendly learning environments, such as workshops and one-on-one tutoring sessions, significantly enhance seniors' engagement and retention of digital skills. Continuous assessment and adaptation of training materials are crucial to ensure that learners can progress at their own pace, reflecting changes in their abilities and confidence levels.

Urban vs. Rural (Resource Access, Infrastructure)

Differences in digital literacy levels between urban and rural areas are significant, impacting seniors' ability to access and utilise digital resources. Urban areas generally offer more opportunities for digital literacy training due to better infrastructure and the availability of community resources such as libraries and senior centres. Seniors living in cities often have greater access to high-speed internet, public digital literacy programs, and tech-savvy support networks and thus are more likely to participate in structured digital literacy programs and report higher levels of digital competence.

Equally, seniors in rural areas face several challenges that hinder their digital literacy. These include limited internet connectivity, fewer local training programs, and a lack of tech support services. Moreover, a lack of digital literacy skills, including the ability to use computers, navigate the internet, and understand digital content, can contribute to exclusion from the digital world . This disparity necessitates targeted interventions to provide rural seniors with the necessary resources and support to improve their digital

literacy. Regional disparities within the partner countries also affect seniors' digital literacy as in regions with higher economic development and better educational infrastructure, seniors tend to have better digital skills and more access to digital literacy programs. Additionally, cultural factors play a role in regional disparities. In some regions, there is a stronger emphasis on lifelong learning and adaptation to new technologies, which promotes higher engagement in digital literacy programs among seniors (Tomczyk et al., 2023).

CHALLENGES

Physical Limitations

Physical limitations are among the most significant challenges faced by seniors in adopting digital technologies. Common issues include vision impairment, hearing loss, and reduced dexterity, which can make using digital devices difficult. For example, seniors with arthritis or other conditions that affect hand movements may struggle with touch screens or small buttons. Addressing these obstacles involves designing devices with larger, more accessible interfaces and offering assistive technologies such as screen readers and voice commands. According to the "Exploring AI Literacy Among Older Adults" study, seniors appreciate devices tailored to their physical needs, as these adjustments can significantly improve usability and comfort (Kaur & Chen, 2023).

In addition, data from the Trans-National Comparative Framework Report reveal that a large percentage of seniors reported physical difficulties when using digital devices. This highlights the necessity for tech companies to focus on inclusive design. Assistive technologies like voice-activated systems, larger font sizes, and simplified interfaces can greatly enhance the user experience for seniors. Moreover, training programs should include guidance on how to adjust device settings to accommodate individual physical limitations, ensuring that seniors can personalise their digital tools to their specific needs.

Cognitive Decline

Cognitive decline, including memory issues and slower information processing, poses another major challenge. As cognitive abilities diminish, learning and retaining new digital skills becomes more difficult. Support strategies such as repetitive training, simplified instructions, and memory aids can help. Training programs that offer step-by-step guidance and opportunities for hands-on practice are particularly effective. Additionally, ensuring that digital interfaces are intuitive and user-friendly can reduce cognitive load and help seniors feel more comfortable with technology. Research from the “Handbook for Educators” emphasises the importance of designing learning materials that cater to the cognitive needs of seniors. Interactive tutorials, easy-to-follow manuals, and video demonstrations can enhance understanding and retention (MILEAGE, 2021). Seniors prefer learning through visual aids and practical sessions rather than theoretical explanations. This preference should guide the development of educational programs aimed at this demographic.

Fear of Technology

Fear of technology is a psychological barrier that prevents many seniors from engaging with digital tools. This fear often stems from a lack of familiarity and confidence, compounded by concerns about making mistakes or damaging devices. Building confidence through positive reinforcement and creating a supportive learning environment are crucial. Encouraging incremental learning and celebrating small successes can help seniors overcome their apprehensions. Studies show that seniors who receive consistent support and encouragement are more likely to persist in their digital learning journeys. Many seniors express anxiety about using new technologies, and to combat this, training programs should incorporate confidence-building activities. Peer mentoring, where more experienced individuals guide beginners, can also be effective.

Motivation

Motivating seniors to engage with digital technologies can be challenging, especially if they do not perceive immediate benefits. Programs that highlight the practical advantages of digital literacy, such as easier communication with family and access to online services, can help increase motivation. Personalising the learning experience to align with seniors' interests and daily activities can also foster engagement. For example, teaching seniors how to use social media to stay in touch with grandchildren or how to access telehealth services can make digital skills more relevant and appealing (Pihlainen et al., 2022).

Seniors are more likely to participate in digital literacy programs when the content is directly relevant to their lives. This underscores the importance of customising training sessions to address specific needs and interests. Additionally, incorporating testimonials and case studies of peers who have successfully integrated technology into their lives can serve as powerful motivators.

Family Support

Family support plays a crucial role in enhancing digital literacy among seniors. Seniors who receive assistance and encouragement from family members are more likely to engage with and benefit from digital technologies. Family members can provide practical help with setting up devices, troubleshooting issues, and offering informal training on using various digital tools. The presence of a supportive family network can boost seniors' confidence and willingness to learn. Programs that involve family members in the training process can amplify the impact of digital literacy initiatives. The fact that seniors who receive regular support from family members show significant improvement in their digital skills highlights the importance of family involvement. Workshops designed for both seniors and their family members can enhance learning outcomes. Additionally, creating online resources that families can access for ongoing support can extend the benefits of initial training sessions.

Community Engagement

Community engagement is vital in promoting digital literacy among seniors. Community centres, social groups, and peer support networks provide accessible and supportive environments for seniors to learn and practise digital skills. These community-based resources offer opportunities for social interaction and collaborative learning, which can enhance motivation and retention. Seniors who participate in community-based digital literacy programs report higher satisfaction and retention rates. These programs not only provide technical knowledge but also foster a sense of belonging and mutual support. Community initiatives should therefore be a key component of any digital literacy strategy for seniors.

SMALL BUSINESSES OWNERS LEARNERS

DEFINITION OF KEY CHARACTERISTICS

It is worth noting that globalisation and the technological era have exponentially increased the relevance of these measures, which are so beneficial for small businesses, to the extent that, from our perspective, digitisation has become a crucial axis for small business owners.

Firstly, digitisation is essential for small business owners to expand the reach of their business. In this sense, an online presence allows small businesses to reach a wider audience, transcending their physical geographic location. This can translate into increased sales and a more diverse customer base (Rosin et al., 2020).

Second, digital tools, such as online shops, mobile applications and customer relationship management (CRM) systems, can significantly improve the customer experience. In addition, they increase customer satisfaction and loyalty by offering multiple shopping and customer service channels (Rosin et al., 2020).

During the interviews with small business owners, one of the most frequently mentioned reticence when justifying their lack of digitisation was the lack of time to dedicate to this task and the impossibility to invest in digitisation due to the low profits of small businesses. Our project's belief is that the digital skills educators and stakeholders' rationale for this target group is to essentially change this group's perception from viewing digitisation as a waste of time and money to recognising it for what it really is: an investment (Rosin et al., 2020).

Contrary to what small retailers might initially think, digitisation allows for the automation of numerous administrative and operational tasks, such as inventory management, payment processing and accounting. This frees up time for owners to concentrate on more strategic aspects of the business (Ezzat, 2023).

Regarding the second premise, cost reduction is evident in the medium and long term. Not only because digital tools make it possible to optimise resource management and reduce waste in day-to-day business operations, but also because an online presence offers more opportunities for expansion and outreach to a wider audience. Despite the reluctance of small businesses to have an online presence, maintaining an

online shop is significantly less costly than a physical shop, by reducing expenses such as rent, utilities and insurance. Moreover, if the online presence is complemented by the physical business, there is a high likelihood of increasing sales, expanding the business to international markets, and collaborating with other businesses through digital platforms (Rosin et al., 2020).

It is therefore clear that digitisation improves efficiency and reduces costs associated with manual business tasks by automating administrative and operational processes. The investment of time and money is recovered in the medium to long term, freeing up resources that can be allocated to more strategic and growth activities (Wang et al., 2023).

In terms of competitiveness and increasing digitisation, another accessible and useful digital tool for small businesses is the digital marketing strategies offered by online platforms such as social media, email marketing and online advertising. These tools allow small businesses to promote their products and services more effectively and at a lower cost than traditional methods. In addition, digital tools provide access to valuable data on customer behaviour and market trends. This information can be used to make informed and strategic decisions, improving product and service offerings (Puro et al., 2022).

Not only does online business expand the market and reach more customers, but loyalty applications and digital rewards programmes can help retain existing customers and encourage repeat purchases. Online interactions also facilitate more constant and personalised communication with customers. Digitisation ensures that tasks are performed in a consistent and high-quality manner. For example, automation of customer responses ensures consistent and efficient customer service, improving customer satisfaction (Puro et al., 2022).

In conclusion, digital literacy is essential for small business owners to manage their operations effectively, remain competitive, and protect their business in an increasingly digital world. Embracing digital tools and strategies can enhance efficiency, expand market reach, and build resilience against future challenges, ultimately contributing to the long-term success of the business.

You can find a table with an overview of factors to consider for the development of profiles of SBO learners in Annex 2.

NEEDS

Age Distribution

Digital literacy needs for small business owners vary significantly across age groups, with notable differences in attitudes, learning preferences, and adoption rates. Understanding these differences is crucial for addressing the specific challenges faced by small business owners.

Older small business owners often show reluctance towards adopting new digital behaviours due to discomfort with technology, perceived complexity, and a preference for traditional methods (Bergson-

Shilcock & National Skills Coalition, 2020; Darley, 2023). Many rely on proxy support from family or community members instead of investing in professional training. This reliance can hinder the effective integration of digital tools, limiting business growth and competitiveness (Bergson-Shilcock & National Skills Coalition, 2020; Darley, 2023). In sectors dominated by older male workers, such as construction and heavier crafts industries, resistance to digital adoption is particularly strong, leading to slower adoption rates and a significant digital divide that affects productivity and competitiveness (World Economic Forum, 2024).

Middle-aged small business owners, typically between 35 and 50, are in a transitional phase regarding digital literacy. Although they have more exposure to digital technologies than older counterparts, they still face challenges in fully integrating these tools into their operations. Targeted training programs that bridge traditional practices and modern digital solutions can help this group by emphasising practical benefits like improved efficiency, cost savings, and market expansion, motivating them to develop their digital skills (Venkatesh et al., 2000).

Younger small business owners, generally under 35, are more digitally savvy and open to new technologies. They are often familiar with digital tools and platforms, using them instinctively in personal and professional lives. However, they still require guidance on leveraging these tools effectively for business growth. Professional training can help them strategically implement digital solutions, optimise their online presence, and utilise data analytics for informed decision-making (Venkatesh et al., 2000).

Gender Distribution

Gender distribution significantly influences how small business owners engage with and adopt digital technologies, affecting their confidence and learning preferences.

Women are less than half as likely to be established business owners compared to men and typically run smaller businesses. Their learning is often hindered by a lack of confidence in mastering digital skills (Marler & Dulebohn, 2005). Despite this, women are generally more open to new information and motivated to succeed. This openness can be leveraged to boost digital literacy among women entrepreneurs.

Women frequently juggle multiple roles, which adds challenges to their learning process but also makes them highly self-directed and motivated. They seek educational resources that fit their busy schedules. Flexible and accessible training programs can help women enhance their digital skills while managing their responsibilities.

Women from minority communities face additional challenges in self-efficacy and autonomy, further affecting their confidence in learning digital skills. This group is particularly vulnerable and benefits from digital skills instructors who also serve as mentors. Programs for these women should focus on supportive learning environments, role models, and community-building to overcome these barriers.

Men, in contrast, are more likely to be established business owners with larger operations and generally exhibit higher confidence in their abilities, leading to greater initial engagement with digital tools skills

(Marler & Dulebohn, 2005). However, older men in sectors like construction and heavier crafts may resist ongoing digital learning, slowing digital adoption and innovation. Encouraging continuous education and demonstrating the practical benefits of digital tools can increase engagement among male business owners.

Socio-Economic Status

Income Levels (access to resources)

Income levels significantly impact small business owners' access to resources, influencing their digital literacy. The most vulnerable groups include very small ventures, micro-businesses, solo self-employed traders, and small community businesses (OECD, 2019). These smaller enterprises typically possess weaker digital skills and competencies due to limited financial resources. Financial constraints hinder their ability to implement advanced digital technologies, and owners often struggle with associated costs. Additionally, the lack of time for both the owners and their few staff members to engage in learning further affects their attitude towards digital literacy. Owners of these businesses are under constant pressure to perform all duties themselves, leaving little time for acquiring new skills.

Business Size (influence on literacy)

Business size also plays a critical role in influencing digital literacy. Smaller businesses, especially those with 1-2 employees, face high pressure to manage all operations independently (OECD, 2019). This intense workload leaves minimal time for learning new digital skills. Although some small business owners are motivated by the necessity for business survival, the continuous demand to handle multiple responsibilities often takes precedence over skill development.

Poor access to educational guidance and a fragmented landscape of digital skills training programs exacerbates this issue. Many small business owners find it challenging to identify their knowledge gaps and navigate the available training options. The mismatch between available training and actual needs leads to a perception that time spent on learning digital skills is wasted rather than invested.

In conclusion, small business owners' digital literacy needs vary based on their socio-economic status, particularly income levels and business size. Smaller and financially constrained businesses face significant challenges in adopting digital technologies and finding time for learning. Tailored, accessible, and relevant training programs, along with effective communication strategies, are essential to help these businesses recognize the value of investing in digital literacy.

Education Level (impact on skills)

Owners, managers, and employees with higher education levels are generally more motivated to learn new skills and exhibit greater digital familiarity. Their work experience or active participation in the labour market often equips them with solid soft skills and adaptability to various learning environments, such as classes, seminars, workshops, and virtual or blended formats. These individuals are usually more

comfortable adopting new technologies and are more engaged in the learning process. They have clear, goal-oriented learning expectations, requiring less explanation of the immediate benefits or applications of the digital knowledge they acquire.

In contrast, those with lower educational levels may lack the same degree of digital familiarity and motivation. They might find it challenging to engage in learning new digital skills due to limited prior exposure and experience. This group often requires more foundational training and support to build confidence and competence in digital technologies.

Knowledge of the English language is another critical factor. Small business owners with higher educational backgrounds often possess better English language skills, making it easier for them to access and understand courses delivered entirely in English or those that include technical jargon without detailed explanations. Conversely, small business owners with lower qualifications or those from remote areas may need information delivered in their native language and require detailed explanations of English technical jargon to fully comprehend and apply what they learn.

The educational level of small business owners greatly influences their digital literacy needs. Individuals with higher education are typically more motivated, familiar with digital tools, and comfortable in diverse learning environments, requiring less foundational support. Conversely, those with lower education levels need more basic training, assistance, and clear explanations of technical terms, especially if they have limited proficiency in English.

Urban vs. Rural (resource access, infrastructure)

Small business owners in urban and rural areas have distinct needs regarding digital literacy, shaped by their environments, available resources, and business sectors.

In urban areas, small business owners need advanced digital skills to remain competitive and grow their businesses. These skills include digital marketing to effectively reach and engage customers online, data analytics to make informed business decisions, and e-commerce strategies to expand their market reach. Cybersecurity knowledge is also essential to protect their digital assets. Additionally, urban business owners require ongoing access to cutting-edge digital tools and platforms that can streamline operations and enhance productivity. The availability of comprehensive training programs, workshops, and seminars that focus on these advanced topics is crucial to meet their needs (Van Dijk, 2006).

On the other hand, small business owners in rural or remote areas have different digital literacy needs. They often require foundational digital skills to effectively utilise basic online tools and services. These skills include navigating the internet, using email, engaging with social media, and understanding basic cybersecurity practices. Training should be tailored to their specific business sectors, such as providing online shopping safety tips for rural retailers or introducing digital tools for agro-tourism (Van Dijk, 2006).

Moreover, rural business owners need localised and accessible training options that can overcome the limitations of their infrastructure. Community-based learning initiatives can be highly beneficial, offering a

supportive environment where they can learn alongside peers. Intergenerational learning, where younger family members or community members assist older business owners, can also be an effective approach to digital literacy training in rural areas. This method leverages existing trust and familiarity, making the learning process more comfortable and relatable.

In addition to specific digital skills, rural business owners need motivation and awareness about the benefits of digitalization. Training programs should emphasise the practical advantages of digital tools in improving business operations, customer engagement, and overall growth. Instructors must actively engage these learners, demonstrating how digital skills can directly impact their businesses positively.

CHALLENGES

Time Constraints (difficulty dedicating time)

Small business owners face significant challenges regarding digital literacy due to time constraints. Managing multiple aspects of their business leaves them with limited time to learn new digital skills. The steep learning curve and the need for ongoing updates in the rapidly evolving digital landscape require substantial time commitments (Sundar & Limperos,2013), which are hard to meet given their busy schedules.

Additionally, the perceived complexity of digital technologies can lead to procrastination, especially among older owners or those with limited prior exposure. Training sessions often conflict with peak business hours, making attendance difficult without disrupting operations. Moreover, the lack of immediate, tangible benefits from digital literacy training can result in business owners prioritising other tasks with more immediate returns.

Financial Limitations (resource investment)

Small business owners face substantial challenges also due to financial limitations. Tight budgets often restrict their access to high-quality digital tools and technologies, compelling them to rely on outdated or less effective solutions (OECD, 2019). The costs associated with training and education can be prohibitive, making it difficult to invest in comprehensive digital literacy programs.

Ongoing improvements in digital literacy are also costly, as technologies and tools continually evolve, requiring continuous learning and updates. Financial constraints limit access to professional support and consultancy, making efficient digital integration challenging. Additionally, investing in necessary digital infrastructure, such as high-speed internet and cybersecurity, can strain budgets.

Marketing and promotional efforts are further impacted, as effective digital marketing often involves paid services. Competing with larger businesses that can afford extensive digital campaigns becomes difficult. In summary, financial limitations hinder small business owners from adopting and effectively utilising digital technologies, affecting their competitiveness and growth potential.

Resistance to Change (overcoming reluctance)

Small business owners encounter major obstacles in digital literacy due to resistance to change. They frequently prefer the familiarity of their current systems and fear the unknown, making the idea of learning new technologies intimidating. The perceived complexity of digital tools can further discourage them, as they may believe the effort required does not justify the benefits.

Generational gaps also play a role, with older owners particularly resistant to digitalization, viewing it as unnecessary or irrelevant. Scepticism about the tangible benefits of digital tools can lead to reluctance, especially when immediate advantages aren't clear. Cultural factors may foster a preference for traditional methods, reinforcing resistance to new technologies.

Lastly, a lack of support and encouragement can make it difficult for small business owners to pursue digital transformation. Without a network of advocates for digital literacy, overcoming initial reluctance and adopting new technologies becomes challenging.

In summary, resistance to change among small business owners arises from comfort with the status quo, fear of the unknown, perceived complexity, generational gaps, scepticism about benefits, cultural preferences, and lack of support.

Building Confidence (comfort with technology)

Small business owners face challenges in building confidence with technology, impacting their digital literacy efforts. Many lack prior experience with digital tools, making new technologies seem intimidating. The rapid pace of technological change can overwhelm them, creating a sense of inadequacy and a constant struggle to keep up.

Fear of failure is a major barrier, as owners worry about making mistakes that could negatively affect their business. This fear leads to hesitation in learning new digital skills. Additionally, many digital literacy programs are not tailored to the specific needs of small businesses, making it hard for owners to find practical and relatable training.

Negative past experiences with technology can further erode confidence, creating persistent apprehension towards adopting new tools. Moreover, the absence of a supportive peer network or mentorship leaves small business owners feeling isolated and less inclined to engage with digital tools.

In summary, small business owners face challenges in building confidence with technology due to a lack of experience, rapid technological changes, fear of failure, inadequate training resources, negative past experiences, and lack of support.

Business Networks (network influence)

The influence of business networks poses significant challenges regarding digital literacy for small business owners. When a network lacks digital proficiency or resists adopting new technologies, it can reinforce similar reluctance among its members. Networks that prioritise traditional methods over digital innovation can make investing in digital skills seem unnecessary.

Limited exposure to successful digital transformations within a network can also be a barrier. Seeing peers successfully leverage digital tools can be inspiring, but without these examples, the benefits of digital literacy remain unclear. Additionally, the absence of digital mentors in a network can make it difficult for owners to find guidance and support.

Networks that do not share information about relevant training opportunities leave their members at a disadvantage, missing out on valuable learning experiences. Furthermore, a competitive network environment can hinder collaboration and knowledge sharing, stifling collective growth and digital learning.

Business network influence presents challenges such as peer resistance, a focus on traditional methods, limited success stories, lack of mentors, inadequate resource sharing, and competitive barriers.

Community Engagement (peer support)

Community engagement and peer support present several challenges for small business owners regarding digital literacy. Limited community engagement can lead to a lack of peer support, making it difficult for owners to find encouragement and motivation to adopt new technologies. Without a network of fellow business owners prioritising digital literacy, the learning process can feel daunting and overwhelming.

The absence of local role models in digital transformation is another significant barrier. Seeing peers successfully implement digital tools provides practical examples and inspiration, but without these success stories, small business owners may struggle to see the tangible benefits of digital literacy. Additionally, communities that are not actively engaged in digital initiatives may lack the necessary infrastructure and resources, such as reliable internet and local workshops, making it harder to improve digital skills.

Peer support is crucial for overcoming challenges and troubleshooting issues. In communities with limited engagement, small business owners may not have access to peers who can offer advice, share experiences, and provide solutions to common problems. This lack of support makes resolving difficulties and progressing in digital literacy more challenging.

Cultural resistance to change and new technologies within some communities can reinforce individual reluctance to adopt digital tools. This collective mindset can make it harder for small business owners to move away from traditional practices and embrace digital transformation. Additionally, the competitive nature of some business communities can hinder collaboration and knowledge sharing. If business owners

view each other strictly as competitors, they may be less willing to share digital strategies and successes, stifling collective learning and growth.

Challenges related to community engagement and peer support in digital literacy for small business owners include limited peer encouragement, lack of local role models, inadequate resources, insufficient troubleshooting support, cultural resistance to change, and competitive barriers to collaboration.

Cultural Attitudes (views on technology)

Small business owners face additional challenges due to cultural attitudes towards technology. Cultural resistance to change is a significant barrier, as some communities prefer traditional methods and are sceptical of new technologies. Fear and mistrust of technology, concerns about data privacy, security risks, and potential disruption to established practices can hinder adoption.

Generational differences also play a role, with older business owners particularly resistant to digitalization, viewing it as unnecessary. A lack of role models and success stories in communities where technology is not widely accepted can further impede digital literacy efforts. Cultural norms that prioritise face-to-face interactions over digital communication can make it difficult for small business owners to see the value of digital tools.

Language barriers and limited exposure to technology in certain cultural contexts add to the challenges. If digital tools and training resources are not available in the local language or are culturally insensitive, engagement and understanding become difficult.

In summary, cultural attitudes towards technology present challenges such as resistance to change, fear and mistrust, generational differences, lack of role models, preference for traditional methods, and language barriers.

PEDAGOGICAL STRATEGIES

Digitalization has become an essential need across various sectors of society, with groups such as the seniors and small business owners facing challenges in adapting to this process. These groups encounter specific barriers related to learning and socio-economic conditions that hinder their access to and adoption of new technologies. As educators, it is crucial to develop pedagogical strategies tailored to their needs, to facilitate the learning process and overcome the barriers preventing them from fully benefiting from the digital environment.

In this context, this section is designed to address the specific teaching considerations required when working with these two groups. The challenges they face can be categorised into two major areas: learning challenges and socio-economic issues.

- **Learning Challenges**: Seniors and small business owners often lack the familiarity and confidence needed to navigate a digital environment. To address these challenges, several educational methodologies are recommended, which prioritise personalization, patience, and the use of accessible technological tools. Additionally, practical recommendations are provided for educators to apply during training sessions, with the aim of maximising the effectiveness of the teaching-learning process.
- **Socio-Economic Issues**: Economic difficulties, lack of access to quality technology, and the absence of support networks are additional barriers that hinder progress in digitalization. To mitigate these challenges, we have developed a series of recommendations for both educators and public institutions. These suggestions include creating more inclusive learning environments, as well as developing policies and programs that provide technological resources and financial support to the most vulnerable groups.

The aim of this section is to provide a practical reference framework in terms of methodologies to be applied and adopted in the training sessions. The contents proposed here should not be considered obligatory or limiting and should be adjusted by the tutor, according to the needs of each group taught.

CHALLENGES OF LEARNING FOR SENIORS

Seniors face a number of particular challenges in learning digital skills, as outlined in 'Digital Skills for the Inclusion of Digitally Vulnerable Groups' (Kythreotis & Ioannides, 2024). This is due to factors such as unfamiliarity with new technologies, reduced confidence in their abilities and, in some cases, cognitive or physical barriers associated with ageing. In addition, the rapid pace of technological advances can lead to a sense of disconnection and resistance to change. These challenges mean that the teaching approach for this group needs to be careful and tailored to their needs, with an emphasis on patience, repetition and ongoing support. It is essential that teaching methods not only match their cognitive and physical abilities, but also promote an inclusive and motivating learning environment.

To address these challenges, we will present a number of pedagogical strategies adapted to the specific learning needs of older people. As in the previous section, we will start by presenting a table that will serve as a visual reference to summarise the methodologies that will be developed in detail later on. This table will allow trainers to quickly identify the most appropriate techniques for each situation.

Table 2. Learning Challenges and Recommended Methodologies for Seniors

SENIORS			
LEARNING CHALLENGES		**RECOMMENDED TEACHING METHODOLOGIES**	**RECOMMENDED LEARNING TOOLS**
Physical Health	• Visual impairment	Verbal/Audio learning Kinesthetic learning	Video magnifiers with handheld cameras Head-mounted displays (HMD) Portable notetakers Speech-to-text software tools Assistive technologies
	• Hearing impairment	Visual learning	Audio induction loop Hearing FM System Infrared system Personal amplified system Bluetooth systems
	• Reduced dexterity	Teach on Voice Control and Switch Device	Voice control and Switch device Speech-to-text Software tools
Cognitive Health	• Memory and information retention problems • Lack of attention/concentration • Problems in information processing	Game based learning Learning based on repetition strategies Experimental learning	Gamified learning platform: ClassCraft, ClassDoj, Kahoot!, Khan Academy, Duolingo. Videos Audios Multimedia Presentations Digital documents
Physiological barriers	• Fear of technology • Low motivation • Anxiety (learning-related) • Lack of self-confidence	Group based learning Intergenerational programming Peer-to-peer learning Informal learning	Workshops Small groups ´face-to-face short learning sessions HR tools: social networks, intranets or online communities
Pedagogical barriers	• Non-adapted material • Non-adapted educational strategy	Personalized training approach Tailored training	Flexible curriculum design Informal learning setting

We will now proceed to provide a detailed development of the various pedagogical methodologies outlined in the table. Each methodology will be examined with respect to its specific application for seniors, emphasising how these strategies can address the distinct learning barriers faced by this demographic. We will assess the benefits of each approach and how they can facilitate a more effective transition to digitalization, while accommodating the unique needs and characteristics of seniors.

Physical Health Support through Adaptive Learning

ADAPTIVE LEARNING

Adaptive learning is an innovative approach that adjusts instructional content, pace, and assessment according to each student's individual learning progress, performance, and preferences. It uses sophisticated algorithms and artificial intelligence to analyse learner data and provide personalised learning experiences. This type of learning ensures that instruction is relevant, engaging, and challenging enough by adapting to each learner's needs. The ability of adaptive learning to offer highly personalised instruction increases student engagement by presenting content that resonates with their individual preferences, maximising their motivation and enjoyment of the learning process.

Students receive instruction that is tailored to their strengths and weaknesses, making the learning experience more meaningful and impactful. The fundamental principle of adaptive learning technology is to highlight what each learner needs to know to advance in their learning journey. The adaptive methodology is essential for teaching seniors, as they have very specific age-related needs (Zhang & Zheng, 2013).

Assistive technologies will be the key tool for adapting our different sessions to various specific needs. These technologies provide a crucial support system that enhances quality of life by addressing issues such as:

- Memory loss
- Alzheimer's disease
- Visual deficits
- Hearing problems
- Mobility issues
- Cognitive difficulties
- Social connection

Assistive technology (AT) refers to a wide range of devices and services designed to improve the independence and quality of life of people with physical, cognitive, or sensory challenges. These solutions mitigate limitations and empower users to interact with the world, offering benefits such as greater autonomy, better communication, and improved accessibility. Assistive technology is typically divided into three types: low, medium, and high technology. Examples of low technology include simple tools like pencil

grips and rulers. Medium complexity technology includes magnifiers, braille, and adaptive seating, while high technology encompasses the most advanced forms, such as screen readers and text-to-speech tools (MILEAGE, 2021).

Addressing Specific Needs

Vision Impairment

Technological tools can help facilitate daily life for people with vision problems. Whether they need more help navigating to a destination, reading, or enjoying another of their favourite activities, technology can be very helpful. Some examples of assistive technologies useful for seniors with vision problems include:

- Screen readers: Convert digital text into synthesised speech, allowing people with visual impairments to navigate websites, emails, and documents.
- Text-to-speech tools: Convert written text into audible speech, making it easier to consume digital content such as e-books, articles, and messages.
- Website customization tools: Such as screen masks, rulers, and font size and colour contrast adjustments, which allow people with reduced vision to consume digital information according to their preferences.
- Portable video magnifiers: Are portable and useful for reading signs and labels on the go.

Recommendations

- Use audio training materials like short and informative podcasts to deliver content via audio.
- Design sessions that incorporate screen readers, large text formats, and voice commands to accommodate various levels of vision impairment (Mukamal, 2021).

Hearing Impairment

To address the challenges related to hearing in seniors, the following recommendations can be considered:

- Use videos with subtitles and visual aids to enhance understanding.
- Employ devices that amplify sound for those with hearing impairments, ensuring they can follow along with spoken instructions and participate in group discussions.
- Integrate AI-driven tools that create interactive and engaging content, such as visual newsletters or presentations with automated voice-overs.
- Offer written transcripts to provide context for spoken content.

Communication Issues

To address communication problems, the following technologies can be employed:

- Text-to-speech technologies: Are useful for both general communication and independent reading.
- Voice-to-text software: Converts spoken words into written text, assisting seniors facing difficulties with traditional writing.
- Voice control devices and switches: Serve as an alternative to the keyboard or mouse for people with limited dexterity, allowing users to navigate and interact with their devices using only their voice.

Reduced Dexterity

For those with reduced dexterity, it is recommended to:

- Provide services with larger buttons, touchscreens, and ergonomic designs to make handling easier for those with limited hand mobility.
- Use technology that responds to voice commands, reducing the need for manual interaction with the device.
- Offer practical sessions where seniors can adjust device settings and explore adaptive features at their own pace.

KINESTHETIC LEARNING

Kinaesthetic learning is particularly beneficial for seniors as it links the learning process to physical activity. It is a learning style in which the learner must feel or move to learn more effectively. Also known as "tactile," "hands-on," or "physical" learning, kinaesthetic learning is part of the VARK model (Visual, Aural, Read/Write, Kinaesthetic), which includes three other main learning styles: visual, auditory, and reading/writing (Cazau, 2004).

For educators, understanding how students retain information is crucial for effective teaching. Since kinaesthetic learners prefer physical engagement when learning, instructors can implement various strategies to support their learning.

Teaching Methods for Effective Kinaesthetic Learning:

1. Incorporate a Variety of Kinaesthetic Activities: Since kinaesthetic learners tend to get bored and cannot concentrate for long in a traditional classroom setting, aim to keep classes as brief as possible. Instead, include different activities such as surveys, role-playing, demonstrations, projects, experiments, and more.
2. Allow Movement in the Classroom: Permitting kinaesthetic learners to move during class helps them learn more effectively. Standing, doodling, tapping their legs, etc., are all types of movements that can help a kinaesthetic learner concentrate and learn more quickly. Additionally, if kinaesthetic learners are struggling to focus during classes, it is important to take breaks and change the class location, stretch, or engage in similar activities to regain energy.

3. Encourage Creating Personal Notes: Having students create their own notes using paper and pencil, highlighting parts of a book or notebook, or underlining different sections helps kinaesthetic learners better remember information. Choosing between crayons and highlighters is a mini activity that requires movement and stimulates kinaesthetic learners.
4. Teach Outdoors: Since students understand better with real-life examples, training activities can be conducted outdoors, in a park, or in digital environments. This way, they can physically touch and feel the devices rather than just reading about them and viewing images. As a bonus, they will be actively learning.
5. Add Hands-On Components to Lessons: As kinaesthetic learners learn best through touch, whenever possible, provide them with things they can physically interact with. Examples include tactile devices, puzzles, blocks, wooden numbers and letters, interactive maps, drawing materials, etc.

Cognitive Health Support through Adaptive Learning

Following the Adaptive Learning model, we will now focus on adaptive learning methodologies for cognitive health challenges, focusing on creating an environment that addresses memory issues, slower information processing, and maintaining attention spans. The goal is to enhance the learning experience by using targeted strategies that cater to the unique cognitive needs of seniors, ensuring they can confidently acquire and retain digital skills.

LEARNING BASED ON REPETITION STRATEGIES

Repetition strategies are highly effective for seniors learners, especially those with dementia, as repeated exposure to instructional material, digital technologies, and games allows learners to better master certain digital skills. This approach acts as a memory aid in teaching sessions directed at seniors (MILEAGE, 2021).

The incorporation of repetition and practice opportunities in training activities is fundamental to support the development and retention of skills, especially in the long term, consolidating concepts, vocabularies, and practices.

Recommendations for Reinforcing Repetition Practices

Following the ideas of MILEAGE (2021) and Camizán García et al. (2021), the following recommendations are presented:

- Introduce a limited number of new information points per session and emphasise the repetition of the same.
- Integrate repetition into practice through problem-solving exercises.
- Conduct brief exercises periodically.
- Implement cognitive simulations.
- Participate in role-playing games to reinforce the subject matter.

- Review aloud and mechanise the exercises, thus engaging all senses.
- Simplify the information and use familiar vocabulary.

Benefits of Learning Based on Repetition Strategies

Repetition, while seeming like a simple method, offers multiple benefits:

- **Improvement in Information Retention**: Stimuli learned through repetition are remembered more easily and retained for longer periods.
- **Formation of New Neural Pathways**: Repetition allows the brain to form new connections, thereby optimising the performance of acquired skills.
- **Increase in Confidence**: Constant practice helps students feel more secure in their abilities, which can foster greater participation.
- **Reinforcement of Active Learning**: By involving all senses through various strategies, a more dynamic and effective learning process is promoted.
- **Adaptability to Individual Learning**: Repetition strategies can be adjusted according to the specific needs of each learner, facilitating personalised learning.

GAME-BASED LEARNING

Learning based on games is an active learning technique that utilises games to enhance student learning. In this approach, learning emerges from gameplay and encourages critical thinking and problem-solving skills. Game-based learning can involve either digital or non-digital games and may include simulations that allow students to experience learning firsthand.

The integration of digital technology learning through gaming is an effective strategy for senior learners. Playing while exploring new digital tools keeps participants engaged, relaxed, and provides enjoyable experiences. These positive experiences facilitate faster and more effective learning of technological skills, accelerating their long-term adoption and mastery (Kalan et al., 2023).

Benefits of Game-Based Learning for Seniors

It has been demonstrated that gamification has numerous positive elements in education for seniors. The most significant benefit is the enhancement of motivation among learners and the reinforcement of engagement with both the subject matter and the group. By incorporating the intrinsic pleasure and fun of games into the learning process, the material is grasped more quickly, participation is fostered, and learners become more tolerant of mistakes while being more open to experimentation (Kalan et al., 2023).

Application with Gamification Tools

Gamification tools incorporate game elements into existing educational materials to boost engagement and motivation. These platforms allow educators to easily add game features to their lessons through characteristics such as:

- Personalised student avatars
- Interactive quizzes and games
- Real-time class leaderboards
- Reward systems for students
- Challenges or storyline missions
- Customizable achievements and badges
- Point-based progression systems
- Data analytics and feedback
- Progress barriers

For example, students can learn digital skills by assuming characters in a simulation game designed to improve specific digital competencies, addressing real-life situations such as purchasing useful items, scheduling doctor appointments, and initiating digital communication through in-game challenges.

EXPERIENTIAL LEARNING

Experiential learning is defined as the process of learning through experience. In this context, the learner has direct interaction with what they are studying, experiencing it from within rather than just observing it from the outside. Therefore, it is closely related to a process of personal reflection that stems from lived experiences. This teaching method emphasises the practical application of knowledge (Romero, 2010).

Experiential learning consists of learning by doing, which may include self-directed learning activities. Helping learners make sense of their experiences is crucial for adult learning.

Benefits of Active Participation

Active participation in experiential learning benefits both the learners and the community. Adult learners gain concrete experiences and reflect on them by comparing new experiences with prior knowledge.

Implementation Strategies

To effectively implement experiential learning, the following strategies can be employed:

- Observation
- Simulations
- Practical training
- Use of digital tools such as videos, audio recordings, multimedia presentations, and digital documents
- Experiencing activities outside the classroom
- Debates and discussions
- Promoting self-directed learning

- Allowing progressive skill development
- Connecting outside experiences with educational activities to enhance their formative value

Evaluation of Experiential Learning

Evaluating experiential learning can be challenging. As noted by Romero (2010), it is advisable to use this methodology alongside more traditional approaches, meaning that experimentation should serve as an additional component that complements knowledge acquisition.

Another challenge identified in learning for seniors involves psychological barriers. To address this gap, the following methodologies are proposed:

COLLABORATIVE LEARNING

Collaborative or cooperative learning is based on students working in groups with other classmates and teachers. This type of learning emphasises interaction and knowledge sharing among participants. The most common activities include collaborative writing, presentations and development projects (Zhang & Zheng, 2013).

Benefits

Collaborative learning has many benefits for learning in later life, as working in small groups gives learners the opportunity to articulate ideas and understandings, uncover assumptions and misconceptions, and negotiate with others to create products or reach consensus. Group activities allow learners to discover deeper meaning in content and improve their thinking skills. The most effective use of group work is to engage learners with challenging content that is thought-provoking, difficult to understand or open to multiple interpretations (Hmelo-Silver et al., 2013).

Solving everyday technological problems in groups makes seniors less afraid of facing these challenges than they would be alone, and they see other solutions by hearing about the experiences of others like themselves (Wolfe et al., 2023).

INTERGENERATIONAL LEARNING

Intergenerational learning is a way for people of all ages to learn together and from each other. It is an important part of lifelong learning where generations work together to acquire skills, values and knowledge. Intergenerational workshops, developed in a flexible, cooperative and collaborative learning environment between different generations, enable the digital inclusion of seniors and contact with younger generations. Intergenerational programmes have different outcomes, on the one hand helping young and old to relate to each other, and on the other hand actually helping to break down stereotypical perceptions of seniors that cause fear and anxiety (Newman & Hatton-Yeo, 2008).

Benefits

Benefits for senior learners, according to Newman & Hatton-Yeo (2008), include:

- Satisfaction from giving something back to the community; a better understanding of the younger generation; a sense of being valued, accepted and respected; the development of their knowledge and skills; and the building of a meaningful and trusting intergenerational relationship in which seniors feel part of a more inclusive society in which they have a say.
- Bi-directional knowledge exchange.
- Continuous learning.
- Empowerment of seniors in the digital world.
- Creates trust and solidarity.
- Creates links between different generations.
- Encourages dialogue and cooperation.

PEER-TO-PEER LEARNING

Peer-to-peer learning is a mutual learning and empowerment strategy where people at the same level engage in collaborative learning.

The teacher plays a key role because although peer learning could take place without a teacher, for our target group, seniors, and following the ideas of Keerthirathne (2019), a peer-to-peer session tutored by a teacher creates a better learning experience and possibility. In this sense, it would be advisable for the tutor to temporarily lose the authority of the position and take on the role of a learner, so that the seniors feel that he or she is an equal.

Benefits

Peer-to-peer learning is beneficial for teaching seniors about digitisation because it creates an environment of trust, empathy and mutual support. Learning from someone with similar experiences creates greater identification, uses accessible language and adapts the pace of learning to their needs. It also encourages collaboration, reduces fear of technology and facilitates hands-on learning adapted to age-appropriate challenges, making the process less intimidating and more effective. This collaborative approach allows seniors to actively participate, receive constant feedback and feel more comfortable working with others, which builds their confidence and deepens their understanding of new concepts. The importance of learning with peers encourages seniors to learn from the experiences of others, promoting positive interdependence and self-evaluation. In this way, seniors are less likely to suffer from stereotype threat and lack of confidence when surrounded by their peers, which increases their motivation and facilitates a more meaningful learning process (Keerthirathne, 2019).

Application

Implementation recommendations for peer-to-peer learning, following the ideas of Keerthirathne (2019) and Zhang & Zheng (2013).

- **Action learning groups**: Action learning groups are small groups of 5-7 people. They are peers at a similar level of responsibility and experience, and generally work on solving complex problems that may seem difficult or impossible to solve. Action learning is a process of reflective questioning, attentive listening, generating new actions and shared group learning.
- **Debates**: A debate is a formal activity in which one participant defends a particular point of view and tries to convince others, who have a different perspective, to accept his or her position. Debates foster critical and higher order thinking skills among all members involved.
- **Focus groups**: In focus groups, employees share their opinions and ideas to make decisions or improve their understanding of an issue. Like debates, focus groups do not focus on generating new actions or learning, but on the meaningful exchange of ideas, research, formulating arguments, identifying and correcting mistakes, generating provocative questions and problem solving.
- **Coaching**: Peer coaching is a confidential and mutually beneficial relationship in which two professional colleagues learn new concepts, share ideas and solve work-related problems together. The coach may be a supervisor, a mentor or a senior employee in the same department. Because the peers work together, peer coaching is not an advisory or guidance exercise, but a mutual exchange of knowledge.
- **Peer mentoring**: In peer mentoring, a more experienced person (the mentor) acts as a counsellor, advisor or guide for a younger colleague or trainee. An effective mentoring relationship intentionally focuses on new actions and learning. Unlike coaching, mentoring tends to be more informal, less structured and occurs according to the needs of the mentee.
- **Learning lunches**: Also known as 'brown bag' events, learning lunches are a popular trend in peer-to-peer learning. The concept is simple: a group meets on a specific day for lunch. During lunch, one person presents a topic of interest or discusses work-related challenges with peers. In these sessions, participants not only gain new information, but also interact with their peers in a relaxed and social environment, which makes them feel less intimidated and more willing to share ideas.
- **Peer performance appraisals**: Peer performance appraisal is a process in which peers provide feedback on the performance, skills, competencies or attitude of the person being appraised. The peer chosen for this process is a co-learner who regularly interacts with the person being assessed. Peer assessments provide trainers with a more accurate picture of a learner's strengths, weaknesses and hidden talents.

INFORMAL LEARNING ENVIRONMENT

Informal learning is a spontaneous and continuous style of learning driven by the learner's curiosity, motivation, goals and passion. It gives the learner control over the content they want to learn and the choice of resources they use. It is a self-directed approach to learning that allows learners to acquire

knowledge and develop new skills when they are most receptive to learning. Informal learning is a form of asynchronous learning that does not follow a structured method and takes place outside traditional learning environments such as the classroom. Learning activities in older age are thought to shift from formal to informal formats due to changes in motivation and differences in opportunities, such as the transition from work to retirement (Jin et al., 2019).

Benefits

Informal learning offers a number of benefits for seniors, especially when it comes to adapting to new technologies. Because this type of learning is adapted to their pace and preferences, it is ideal for them, allowing them to explore and familiarise themselves with technology in a comfortable way and without the pressure of a formal environment. In addition, informal learning helps to address some of the psychological challenges that often accompany ageing, such as loss of confidence or the feeling of being left behind, by allowing them to learn more flexibly and according to their own interests. On the other hand, an informal learning space is a type of environment designed to encourage independence and freedom, so that learners feel comfortable when learning and acquiring knowledge. To add interest, a face-to-face training session could be held outside the classroom environment, for example, in a library, gymnasium or canteen/cafeteria (Jin et al., 2019).

PERSONALIZED TRAINING APPROACH

To address the last major barrier identified in the table, specifically the pedagogical barrier, we propose implementing a personalised training approach. Following the ideas of Zhang & Zheng (2013), senior students require a flexible curriculum design that allows them to progress at their own pace and adapt to their individual learning style.

It is essential that they have an informal learning environment and a personalised curriculum that makes their digital learning sessions more effective. Personalised learning begins with the learner; it adapts to their individual needs rather than being based on their age or academic level. This approach transcends uniform teaching or the application of general strategies; it takes a holistic view of the person, considering their skill level, interests, strengths, challenges, and prior knowledge. In this way, students understand how they learn best and feel motivated to take control of their own educational process.

In this model, students become co-designers of the curriculum along with the teachers, who in turn are co-learners in the classroom. It is not necessary for the teacher to be the one who works the hardest; instead, it is expected that students will be the most active in their learning. By having a voice and choice over the content, students engage in learning, understand their educational needs, and consequently strive for success, as they themselves have defined their learning objectives.

Application

- Involve the student in the learning process.
- Adapt the sessions to the needs and interests of the students.

- Collaborate with the students to decide the best way to evaluate the content.

COMPENDIUM OF RECOMMENDATIONS FOR TRAINERS

Based on the previous considerations regarding the teaching of digitalization to seniors, we have structured strategies and approaches into a series of pedagogical recommendations. These guidelines are designed to optimise the learning process, ensuring that trainers can offer an educational experience tailored to the needs and abilities of their students. By implementing these recommendations, the goal is to facilitate effective, respectful, and enriching teaching that not only promotes the acquisition of digital skills but also fosters the students' confidence and motivation on their journey toward digital literacy.

- **Tailored Training**
    - Preliminary Research: Before designing the program, research the training needs of the students to customise the itinerary and adapt it to their interests, learning styles, and potential barriers.
    - Adapt the Content: Ensure that the lessons meet the needs and levels of the students, adjusting the complexity gradually.
    - Use Relevant Examples: Relate the concepts to practical and everyday situations that make sense to the students, which will facilitate understanding and motivation.

- **Learning Environment**
    - Patience and Empathy: Respect each student's learning pace. Seniors often need more time to grasp concepts. Avoid rushing and create a relaxed environment where they feel safe and unafraid of making mistakes.
    - Foster Confidence: Use simple language and avoid technical jargon. Simplicity in communication helps reduce anxiety towards technology.
    - Create a Supportive Environment: Encourage socialisation among students so they help each other and share experiences. This fosters a collaborative environment and reduces anxiety.
    - Workshops and Learning Sessions
    - Short Sessions and Small Groups: Working in small groups facilitates more personalised attention, which is essential for successful learning.
    - Incorporate Informal Learning Spaces: Combine formal lessons with spaces where students can interact freely and share experiences.

- **Digital Platforms and Tools**
    - Use of Digital Tools: Take advantage of tools like videos, audio, multimedia presentations, and digital documents to enrich learning.
    - Gamified Learning: Use platforms with game elements to make lessons more dynamic and engaging. This encourages participation and knowledge retention.

- Accessible Technologies: Use devices with simple interfaces and show accessibility options (text enlargement, voice dictation, etc.) to make technology more accessible.

- **Diverse Teaching Methods**

  - Kinesthetic Activities: Incorporate physical and hands-on activities that actively engage students, improving learning retention.
  - Teamwork and Reflection: Encourage group work, personal reflections, and group discussions. This reinforces understanding and allows students to express their doubts or discoveries.
  - Relaxation Exercises: Including relaxation exercises can help students reduce anxiety and improve concentration during lessons.
  - Outdoor Learning: When possible, change the classroom setting to promote relaxation and concentration.

- **Repetition and Reinforcement**

  - Repeat Important Concepts: Memory can be a challenge, so it's important to repeat and reinforce key ideas in each class.
  - Visual Support Materials: Provide printed guides, screenshots, or video tutorials that students can consult outside of class.

- **Time for Questions and Review**

  - Space to Address Doubts: Dedicate time at the end of each session for questions, ensuring that students have the opportunity to clarify their doubts in a group setting.
  - Summaries at the End of Each Session: Review the key points of the lesson to ensure that everyone has understood the concepts before moving forward.

- **Motivation and Sense of Achievement**

  - Achievable Goals: Set small goals and celebrate students' achievements, even if they are modest. This helps them stay motivated and confident.
  - Explore Their Interests: Adapt lessons to the students' needs and interests, such as learning to manage photos or shop online, which gives a practical and motivating purpose to learning.

LEARNING CHALLENGES OF SMALL BUSINESS OWNERS

As we see in section 1, the main challenges for SBOs are lack of time, resistance to change and lack of confidence in using new technologies. To overcome these learning challenges, it is essential to have strategies that are flexible, accessible, practical and tailored to the specific needs of this group.

Based on our previous studies and experiences, adult learning is at the centre of the andragogical framework, which, following the ideas of Caraballo (2007), is based on placing the learner at the centre of the learning process, i.e. the learner is the protagonist in all decisions about learning, from the content, the time and the way of doing it. In order to facilitate the learning process, it is essential to know the learner's previous experience and skills, as well as his or her needs and objectives.

Next, we will present a table of the main teaching methods so that trainers can quickly identify the most appropriate strategies according to the characteristics of their groups. We will then go into more detail on each of the proposed methodologies, explaining their definition, the best ways to apply them in the context of small businesses, and the specific benefits they bring to improving business competitiveness and sustainability.

Table 3. Learning Challenges and Recommended Methodologies for SBO

SMALL BUSINESS OWNER			
LEARNING CHALLENGES		**RECOMMENDED TEACHING METHODOLOGIES**	**RECOMMENDED LEARNING TOOLS**
Lack of time	• Time incompatibility • Frequent interruptions • Lack of continuity • High workload • Difficulty attending in-person session	Self-paced e-learning Flexible lesson Mentoring Coaching Blended learning	E-leaning platforms Self-paced online exercise Workshop
Challenges of Structure and Accessibility in Training	• Mainly theoretical courses • Courses are too long • Courses are too boring • Non-adapted material • Non-interactive training • Non-flexible training • Non-guide training • Share training with others. • Difficult-to-use training platform and resources • Difficulty in resolving doubts • Lack of continuous technical support • Difficulty in technical implementation • Lack of knowledge about measuring results	Job-shadowing Action learning Expert led training	Microlearning course Collaborative Larning approach
General content challenges	• Advertising strategies • Understanding e-commerce • Create/manage a website • Social media management • Challenges in digital content creation • Use of digital marketing tools • Develop data analysis skills • Learning about data protection and cybersecurity • Customer service in digital environments	Training based on curated content Blended training based on the training needs Blended Tailored Training	Sana – AI – powered onboarding tool Learning Management System Videoconferencing tools Microlearning platforms Content Creation Tools Hosted Course Platform
Physiological barriers	• Fear of technology • Low motivation and commitment • Anxiety (learning-related) • Lack of self-confidence • Disinterest in continuous innovation	Formal learning Informal learning Individual learning Group learning Training method mix	Depend on the needs and the methodologies chosen

BLENDED LEARNING

Blended learning is an integration of the strengths of face-to-face instruction and online teaching. This approach combines elements of instructor-led training and self-paced online learning (Boelens et al., 2015).

In this way, blended learning provides students with the advantages of both traditional and modern teaching methods. Face-to-face instruction allows students to interact directly with instructors and receive answers to their questions, while self-paced online learning offers the flexibility to adapt to their individual needs. This results in a more effective and engaging training program.

Application

Blended learning is especially well-suited for a hybrid work environment, as it integrates elements of digital learning and classroom activities. This approach combines the best aspects of in-person and online teaching, providing maximum flexibility to learners. The logic behind blended learning is that students spend some time learning together and then complete tasks independently online.

Small Business Owners (SBOs), often characterised by a lack of time, tend to prefer online learning, which includes blended teaching. As Zhang & Zheng (2013) mention, when technology and online learning are used effectively and there is a commitment from both students and instructors, it can greatly facilitate learning and improve the acquisition of skills and knowledge.

The most effective way to implement a blended teaching method is through a Learning Management System (LMS). An LMS is a web-based portal that centralises, stores, and manages all learning content for a course. It is particularly useful for small business owners as it allows them to access the materials they need, whenever they need them, independently (Zhang & Zheng, 2013).

Key LMS Tools for Blended Learning

To make courses as similar as possible to traditional methods without losing the essence of online learning, an LMS should include the following tools:

- Discussion forums: Facilitate the exchange of ideas, answer questions, and share relevant content.
- Customised study programs: Allow instructors to design programs tailored to students' specific skill areas, providing clear criteria for advancing from one course to another.
- Online chat with peers: Supports collaboration between instructors and students.
- Direct chat with instructors: Provides a more personalised and direct communication channel.
- Online assessments: Facilitate a continuous learning process.
- Grading and feedback system: Offers valuable feedback for student progress.

- Virtual classroom: Enables participation in classes from anywhere, interaction via chat, and real-time engagement through audio and video. Instructors can use tools like whiteboards and polls, and sessions can be recorded for those unable to attend live.

Benefits of Blended Learning

Blended learning teaches students how the combination of eLearning and classroom training offers a comprehensive educational experience. Instructors can adjust the pace or complexity of the learning path based on the needs of the students. According to Salinas Ibáñez et al. (2018), some of the benefits of blended learning include:

- Flexibility
- Self-management of learning
- Easy access to a wide range of content
- Variety of content and choice of difficulty levels
- Academic advising
- Adapted classes
- Specific content
- It complements the limitations of the online format with the continuity of in-person, traditional training.

This learning approach offers a complete and tailored experience for students of different paces and needs, integrating the best of both worlds: in-person and digital training.

MENTORING AS A TRAINING ACTIVITY

Having a mentor can be crucial for the survival of small local businesses. Mentors provide essential knowledge, guidance, and social support to business leaders and hourly workers. This support enables them to overcome initial challenges and establish a solid foundation for long-term business success.

Guidance is also vital for the development of both technical and non-technical skills. On the technical side, a mentor might introduce a local worker to new marketing strategies, train them in more efficient accounting practices, or assist in reorganising their store. Simultaneously, a mentor could help an owner improve their interpersonal skills, enabling them to create a more welcoming environment for both employees and customers alike (Peel, 2004).

The mentorship program also plays a key role in identifying new opportunities for innovation. By leveraging the experience and knowledge of mentors, business owners can learn how to adapt their business model to emerging trends, such as digitalization and e-commerce, thereby expanding their reach and adaptability in a changing market. This allows them not only to enhance their business processes but also to explore new markets and expand their operations.

Perhaps most importantly, mentorship helps small businesses establish themselves within their communities. With the support of fellow merchants or local professionals specialising in digitalization, these new owners will feel more confident about putting down roots and becoming part of something bigger. Knowing that they are part of a network will motivate them to continually improve their service, support each other's success, and become an even better place to work, learn, and grow (Patel, 2024).

JOB-SHADOWING AS TRAINING FOR SMALL BUSINESSES

The primary challenge facing small business owners is a lack of time. Training methodologies that involve on-the-job learning are particularly beneficial for this type of learner. This common training method for new employees simply involves spending time with a more experienced colleague, initially observing and then gradually taking on tasks independently. While cost-effective, its success hinges on the mentor being both skilled and an effective communicator. It can be a valuable component of a broader training strategy.

Job shadowing is a learning approach in the workplace, whether formal or informal, that enables individuals to gain experience by performing various job-specific tasks (Danijela, 2021). During the job shadowing process, the observer follows a mentor or seasoned professional throughout their workday. This method offers a unique opportunity to gain deeper insights into a particular role or career, especially in the context of digital tasks related to commerce. Through this experience, small business owners (SBOs) and their employees, if any, can develop skills and knowledge in both general business practices and the specific areas of digitalization and e-commerce.

In addition to observing and understanding work processes, job shadowing also involves asking relevant questions to gain additional information and explanations about what the observer sees and finds interesting (Danijela, 2021).

Benefits of Professional Mentoring for Small Businesses as highlighted by Danijela (2021):

- Adaptable to strict schedules.
- Teaching focused on daily tasks.
- Increased productivity and job satisfaction.
- Training tailored specifically to the needs of small businesses.
- Promotion of flexibility and innovation within small businesses.
- Encourages knowledge exchange among peers, providing highly useful insights.
- Strengthens employee engagement.
- Can be conducted remotely through virtual mentoring, allowing SBOs to learn from digitalization experts at a distance.
- The duration of job shadowing sessions is entirely determined by the SBO, based on the time and needs required to master a specific task, offering significant flexibility.

MICROLEARNING FOR SMALL BUSINESSES

Microlearning (ML) is a teaching and learning methodology characterised by the presentation of content and activities in a brief and concise manner. Its focus lies in dividing the learning process into small modules, thus facilitating the acquisition of knowledge and skills in a more manageable and focused way. Each lesson focuses on a single objective or learning outcome, which is measurable and practical (Betancur-Chicué & García-Valcárcel, 2023).

Key elements of Microlearning.

- **Microcontent**: These are fragments of information presented in simple formats, such as brief texts, images, tables, diagrams, or codes.
- **Microactivities**: These are short and specific activities that require user interaction, such as quizzes, exercises, or quick assessments.
- **Digital Instruction**: Microlearning often relies on digital media to facilitate access to content and activities, allowing for a more flexible learning experience that adapts to the user's needs.

This approach promotes rapid and continuous learning, as the modules can be completed in a short time. This enables an effective rotation of content and activities based on the student's progress. By focusing on specific outcomes and concrete skills, immediate assessment of learning is also facilitated.

According to Betancur-Chicué and García-Valcárcel (2023), this approach aligns with the needs of small business groups (SBO), as reflected in our comparative report "Digital Skills for the Inclusion of Digitally Vulnerable Groups" (Kythreotis & Ioannides, 2024).

Benefits of microlearning for SBOs.

- Flexible and self-directed training that enhances personal content management.
- A wide variety of content tailored to the needs of the learner.
- Optimization of learning times.
- Increased knowledge retention.
- Reduction of cognitive load, anxiety, and mental fatigue.
- Facilitated access to training.
- Rapid and easy updates of content.
- Clear and concise learning objectives.
- Accumulated and accessible material.
- Opportunities for learners to learn what they need at the right moment.

Implementation

To ensure that microlearning is effective in digitalization training for SBO individuals, the literature recommends complementing it with other teaching strategies. It is essential that, as trainers, we keep in mind that, according to Skalka & Drlik (2020), automatic assessment is crucial for fostering engagement and maximising the benefits of informational capsules.

The use of tools such as forums, interactive chats, or online tutors who can recommend informational capsules according to the learner's level of understanding, as well as clarify any doubts that may arise, is suggested. Additional tools, such as videos, infographics, and simulations in which the student applies digital knowledge in everyday situations, are equally valuable.

According to the recommendations of Díaz Redondo et al. (2020) and the requirements identified in our previous study phases regarding the different profiles, it has been determined that the creation of useful content for microlearning should follow certain guidelines:

- **Format**: The informational units or capsules should be brief, easy to grasp at a glance, and lightweight to facilitate distribution.
- **Learning Objective**: It should be easily perceivable, and the information should be focused on achieving it in a few steps, using simple and concise sentences.
- **Self-Contained**: Each content piece should be independent so that it does not require complementary material to reach the desired objective.
- **Visual Appeal**: It is recommended to include visual elements, titles, and questions that capture the learner's attention.
- **Accessible Structure**: Informational capsules should be well organised on platforms such as websites or Moodle, ensuring easy and orderly access to the files.

COLLABORATIVE LEARNING FOR SMALL BUSINESSES

Zhang & Zheng (2013) highlight collaborative learning (CL) as one of the most important teaching strategies for adults. This educational approach uses groups to enhance learning, involving students working together alongside their teachers. Interaction among peers and between teachers and students is an essential feature of collaborative learning. Through this exchange, individuals actively participate in the learning process instead of merely passively listening or memorising information in isolation.

Recommended tools

The tools mentioned earlier, such as Learning Management Systems (LMS), facilitate collaboration in the virtual classroom, incorporating this methodological feature into the sessions. For trainers, it is crucial to implement activities that students can apply in their daily lives, integrating a collaborative component that makes interaction among them necessary to achieve the proposed objectives. In this way, peer feedback is

encouraged, a sense of belonging to a group is generated, and students actively engage in their learning process.

Application

A recommended practice for integrating collaborative learning in the classroom, especially useful for enhancing digital literacy in vulnerable groups (SBO), is through simulations. As indicated by Leigh Smith & MacGregor (1992), simulations are structured role-playing activities that recreate real-life situations. In these, students are invited to portray, either individually or in groups, different actors involved in a conflict or specific situation. This allows them to adopt the perspectives and values of those characters, which can foster emotional involvement in the exercise.

The most significant aspect of simulations is the ability to put oneself in others' shoes, both during the activity and after its completion. Generally, upon concluding, a thorough discussion takes place in which participants reflect on what occurred and analyse both their actions and those of others. It is in this reflection that important learnings and concepts emerge. Currently, there are numerous simulations and educational games covering various areas of knowledge.

Benefits of Collaborative Learning for SBO

Collaborative learning presents multiple benefits that can be classified into four relevant categories for our target audience, according to Laal & Ghodsi (2011):

- Social Benefits: CL facilitates the creation of support networks among students, promoting a sense of community. Working in groups fosters understanding and respect for diversity, creating an inclusive and cooperative environment. This contributes to forming learning communities where everyone shares common goals and feels part of a group.
- Psychological Benefits: CL enhances students' self-esteem by making them feel central to their learning process. Collaboration reduces individual pressure, decreasing anxiety regarding challenging tasks. Additionally, the collaborative environment reinforces a positive attitude toward teachers, who are perceived as guides rather than authority figures, improving students' emotional well-being.
- Academic Benefits: CL promotes critical thinking by encouraging discussion and analysis among peers. Students become actively involved, improving their understanding and academic performance. Working in teams also helps model effective techniques for problem-solving, contributing to success in complex tasks, making learning more dynamic and profound.
- Assessment Diversification: Collaborative learning allows for the diversification of assessment methods through group projects, self-assessments, and peer evaluations. This complements traditional tests and provides a more comprehensive evaluation of student progress.

In summary, collaborative learning not only improves academic performance but also creates a positive and supportive environment, facilitating a more holistic learning experience (Laal & Ghodsi, 2011).

ACTION-BASED LEARNING FOR SMALL BUSINESSES

Action-based learning is an approach used by companies and organisations to engage their employees in exploring and solving critical challenges and opportunities while enhancing their leadership development and self-awareness (Boshyk, 2014). This method focuses on groups of no more than six people who address business problems and leadership dilemmas, based on principles that emphasise mutual aid, collaboration, empowerment, appreciative inquiry, learning, and reflection at a pace that matches or exceeds changes in the environment.

Characteristics of Action-Based Learning

Action-based learning is a process that allows for finding creative solutions to workplace problems while reflecting on the results. It is often used to tackle complex issues in a teamwork setting and involves the participation of trainers who facilitate the learning process and encourage team members to reflect on each solution. This approach fosters teamwork, critical thinking, leadership, and problem-solving. Team members apply their skills and creativity to achieve a common goal, and reflecting on the process allows them to identify the most effective ideas generated.

Reflection also helps leaders develop additional skills, such as communication, and encourages team members to discover new ideas and methods for addressing current digital issues. The benefits of action-based learning include creative solutions to contemporary organisational problems and the development of significant digital and leadership competencies. By involving team members in the problem-solving process, it demonstrates that the company values its employees' opinions. Although it focuses on teamwork, it also promotes autonomy in the workplace, as each member is expected to contribute unique solutions, leading to insightful and productive teams.

Implementation

To ensure effective implementation of action-based learning, the following recommendations are proposed, in line with the ideas of Boshyk (2014):

1. **Identify the Problem**: The first step is to identify a challenge. In this initial stage, team members should ask questions to fully understand the problem and determine its causes. Some organisations develop simulations to foster action learning teams. Once the team identifies a challenge, they can begin to seek effective solutions to improve business operations.
2. **Create a Team**: Action and learning teams typically consist of four to eight people. It is advisable to select team members from different departments or levels of experience. It is also recommended to designate an action learning coach to motivate the team and keep members focused on learning objectives. The groups should be small enough for each member to have the opportunity to contribute and direct their own learning process but large enough to facilitate the exchange of ideas.

3. **Ask Questions and Identify Solutions**: Provide each team member the opportunity to ask questions and generate possible solutions. After each proposal, allow time for members to reflect on each idea and determine the most viable options. The facilitator plays a crucial role in this stage, fostering communication and reflection among all team members.
4. **Take Action**: Once the team determines the most effective solution, necessary actions should be taken to implement change according to the proposals. It is advisable to assign specific tasks to team members based on their skills. Additionally, a plan should be created, and a series of steps agreed upon by the team should be followed to overcome the challenge.
5. **Reflect**: Reflection should occur at every stage of the action learning process. This time can be used to ask questions, create lists of pros and cons, and discuss the results. After helping to resolve a problem, time should be given for members to reflect on the overall process to improve the outcomes of future action teams.

Benefits

As a training method, action-based learning has proven to be highly effective in developing digital leadership competencies and problem-solving capabilities. This approach involves providing participants with a real organisational project or problem to work on together. Reflection on learning is an integral part of this approach, thus contributing to the personal and professional development of those involved.

COMPENDIUM OF RECOMMENDATIONS FOR TRAINERS

Based on the considerations for teaching digitalization to small business owners, we have structured a series of recommendations that address both technical aspects and practical and strategic skills. These guidelines are designed to improve business performance and enrich the learning experience of the trainees. By implementing these recommendations, the goal is to provide effective training tailored to the specific needs of the businesses, promoting not only the adoption of digital tools but also the development of practical skills and confidence in using new technologies.

- **Know the Learner**
    - Identify Profile, Level, and Needs: Identify the profile, level, and needs of the learners to personalise the training content.
    - Assess Digitalization Level: Evaluate each student's level of digitalization to adapt the teaching to their knowledge.
- **Design Collaborative Activities**
    - Encourage Collaboration: Foster collaboration through group activities.
    - Assign Specific Roles: Assign specific roles in exercises to ensure participation from everyone.

- Create Workgroups: Form workgroups so that learners continue collaborating and learning together after sessions.

- **Practical and Real-World Approach**

  - Use Real Examples: Use real and practical examples that learners can directly apply to their businesses.
  - Balance Theory and Practice: Continuously alternate between theory and practice to maintain attention and interest.
  - Introduce Gamification: Incorporate gamified elements with everyday challenges of small businesses to learn by doing.

- **Use Accessible Tools**

  - Select Simple Platforms: Choose simple and affordable learning platforms that match the needs and capabilities of the learners.
  - Encourage Mobile Devices: Promote the use of mobile devices as useful tools for digitising their businesses.

- **Encourage Self-Assessment and Self-Directed Learning**

  - Incentivize Self-Assessment: Encourage self-assessment to increase learners' commitment to their training.
  - Promote Self-Directed Learning: Motivate students to explore and apply new knowledge on their own.

- **Follow-Up and Feedback**

  - Plan Follow-Up Sessions: Plan follow-up sessions where learners can share their progress and challenges.
  - Schedule Regular Meetings: Schedule periodic meetings to prevent feelings of abandonment and reinforce ongoing support.

- **Create a Safe and Empathetic Environment**

  - Foster Empathy and Active Listening: Promote empathy and active listening during sessions.
  - Create a Safe Space: Establish an environment where learners feel safe to share personal challenges and needs related to digitalization.

- **Demonstrate the Value of Digitalization**

- Focus on Real Business Needs: Focus on the actual needs of the business and show how digitalization can generate revenue.
- Teach ROI Measurement: Teach how to measure the return on investment in digitalization using practical examples and simple metrics.

- **Long-Term Digital Transformation**

  - Plan for Long-Term Transformation: Plan digital transformation as a long-term process with a clear and realistic roadmap.
  - Establish Success Indicators: Set success indicators to measure progress over time.

- **Personalise the Learning Experience**

  - Adapt Content: Adapt content to be relevant to each sector or type of business. For example: how to use social media for a local food business versus a clothing store.
  - Offer Specific Examples: Provide specific examples based on the type of clients that small businesses typically have, customising digital strategies according to their target market.

- **Training in Problem-Solving Skills**

  - Teach Problem Handling: Instruct learners on how to address common digitalization problems, such as online inventory management, technical issues on platforms, or underperforming digital marketing campaigns.
  - Promote Problem-Solving Mindset: Encourage a problem-solving mindset so learners feel empowered to adapt to future technological changes.

- **Development of Soft Skills**

  - Enhance Interpersonal Skills: Foster the development of interpersonal skills, such as effective communication in digital environments and online negotiation, to improve customer interaction.
  - Include Time Management: Include time management in digital planning, helping learners balance daily tasks of their physical business with the demands of their digital presence.

- **Encourage Digital Creativity**

  - Promote Creativity: Encourage creativity in creating digital content, whether through videos, photos, or marketing strategies, tailored to each learner's business style.
  - Teach Tool Usage: Teach how to use free or affordable tools for creating engaging visual content, such as graphic design and image and video editing.

- **Constant Progress Evaluation**

    - Implement Periodic Assessments: Conduct periodic assessments during and after the training to measure learners' progress in adopting digital tools.
    - Provide Personalized Feedback: Offer personalised feedback to each learner, providing specific recommendations on how to improve their digital approach.

- **Recommended Learning Tools**

    - Use Available Learning Tools: Utilise all available learning tools, always adapting to the time of need and learning challenges to be addressed.
    - Some Recommendations: E-learning platforms, self-paced online exercises, workshops, microlearning courses, Sana – AI-powered onboarding tool, Learning Management System, videoconferencing tools, microlearning platforms, content creation tools, hosted course platform.

RECOMMENDATIONS FOR ADDRESSING SOCIOECONOMIC CHALLENGES IN THE LEARNING OF SENIORS AND SMALL BUSINESS OWNERS

During the data collection phase to understand the situation regarding digitalization training for seniors and small business owners, specific challenges and needs were identified for each target group. Both learning difficulties and socioeconomic issues significantly impact adult education, particularly digital training for these groups.

Trainers play a crucial role in this process. However, many of the obstacles that participants face cannot be addressed solely within the classroom. Socioeconomic factors such as limited access to technological devices, lack of connectivity, job insecurity, and financial difficulties are barriers that go beyond the pedagogical realm and require more structural solutions.

In this section, we will address the socioeconomic challenges that affect education. These challenges represent external obstacles that influence individuals' ability to access and participate in learning, such as the lack of technological resources, economic difficulties, and logistical barriers.

Although this section will not offer an exhaustive recommendation of specific methodologies or tools, general recommendations will be presented to address these situations from a broad perspective. These recommendations are directed at trainers and consider socioeconomic issues as relevant as learning challenges.

It is crucial that trainers recognize the socioeconomic problems faced by students without losing sight of the focus of the project: the learner. Understanding the students' needs and challenges guides the development of recommendations for both trainers and governmental authorities to raise awareness about the importance of addressing these socioeconomic problems.

Implementing policies and measures at an institutional level is essential to create a more equitable and accessible environment for digital training.

The proposed comprehensive approach considers both learning challenges and socioeconomic problems. The recommendations developed for trainers of seniors and small business owners can be adapted at an institutional level, aiming to improve digital integration and mitigate socioeconomic barriers.

These recommendations align with the guidelines on adult learning and education from the United Nations Educational, Scientific and Cultural Organization (2015), which emphasises the importance of joint efforts between governments and citizens to face educational challenges. Therefore, it is essential that institutional policies and strategies align with these principles to improve adult education and effectively address the existing digital divide in the specific groups: seniors and small business owners.

EDUCATIONAL BACKGROUND

General Description of the Educational Context: Academic Background

Educational background, or academic training, encompasses an individual's educational history and experience, including completed levels of study such as primary, secondary, and university education, as well as any additional training, such as courses, diplomas, or certifications. In the context of digital literacy, understanding these backgrounds is crucial for designing effective and appropriate training programs.

This project focuses on the digital literacy of seniors and small business owners. The educational background of the participants is fundamental in determining the starting point and adapting the programs to their needs. Research reveals that the lack of prior educational experience, especially among seniors, presents a significant challenge for digital training.

Impact of Educational Level on Digital Literacy

The level of education and prior experience with technology greatly influence the digital skills of seniors. Those with higher education and previous exposure to technology tend to perform better and show greater confidence in using new digital tools. In contrast, those lacking experience face a steeper learning curve and require additional support.

Identified Challenges

Our analysis has highlighted two main challenges faced by both seniors and small business owners in digital literacy:

- **Lack of Prior Experience with Technology:** Individuals with little or no prior experience face a steeper learning curve.
- **Difficulty with Technical Vocabulary:** Complex technical language can increase anxiety and hinder learning.

These challenges are not considered learning difficulties in the strict sense, so they cannot be addressed through conventional methodological strategies. However, specific recommendations can be offered to trainers and policymakers aimed at overcoming these barriers and facilitating digital integration.

RECOMMENDATIONS FOR TRAINERS

Motivation and Marketing:

- **Preliminary Marketing Campaign:** Conduct a campaign aimed at attracting and motivating participants, tailored to the profile of the target group.
- **Appropriate Media:** Select communication channels that best reach your target audience.

Methodology and Pedagogical Approach:

- **Inclusive Language:** Use simple and accessible vocabulary to avoid anxiety and fear.
- **Strengthen the Learning Culture:** Foster a positive and motivating environment that supports the learning process.
- **Engaging and Relevant Content:** Show how digital literacy can improve daily life and adapt the content to the needs of the group.
- **Progressive Content:** Design a curriculum divided into levels, starting with the basics and including modules for those with some prior experience.
- **Practical Teaching:** Prioritise practical training over theoretical instruction.

In the Classroom:

- **Interactive Environments:** Use tools and platforms that are easy to use and encourage participation.
- **Ongoing Support:** Provide continuous support and additional resources to resolve doubts.
- **Dialogue Spaces:** Facilitate communication and the exchange of experiences among participants.
- **Coaching and Peer Learning:** Implement coaching sessions and encourage collaborative learning.
- **Group Methodology:** Use group approaches to reinforce learning and collaboration.
- **Gamification and Informal Learning:** Incorporate game elements and allow for self-directed learning.

Materials and Resources:

- **Adapted Language:** Ensure that the language and materials are understandable for everyone.
- **Glossaries and Translations:** Provide glossaries and translations to facilitate understanding of technical vocabulary.
- **Visual Materials:** Use diagrams, infographics, and videos to support visual learning.
- **Personalised Tutoring:** Offer individualised tutoring sessions to meet the specific needs of each participant.

RECOMMENDATIONS FOR GOVERNMENTS AND PUBLIC ENTITIES

Institutional Support:

- **Awareness Campaigns:** Promote campaigns to reduce fear of technology and motivate participation in digital literacy programs.
- **Grants and Funding:** Provide financial support for the acquisition of technology and the implementation of training programs.
- **Infrastructure Improvement:** Ensure access to the internet and technological resources in disadvantaged areas.
- **Educational Support Programs:** Develop initiatives to support continuous training and adaptation to new technologies.
- **Develop Comprehensive Policies:** Create inclusive and cross-sector policies that promote adult learning and education.

SOCIOECONOMIC STATUS

General Description

Socioeconomic status (SES) is a combined measure that reflects the social and economic standing of an individual or group within society. This indicator is based on various factors such as income level, education, occupation, and sometimes, place of residence. In the context of digital literacy, socioeconomic status plays a crucial role in influencing access to education and the opportunities available.

Impact of Socioeconomic Status on Digital Literacy

Socioeconomic status is a key factor that can create significant barriers to digital training. Some of the most common challenges include:

- **Access to Technological Resources:** The lack of or difficulty in accessing adequate technological devices limits digital learning opportunities.
- **Internet Connectivity:** The inability to connect to the internet, or having a poor connection, restricts access to online platforms and resources.

- **Training Costs:** The inability to afford the costs of digital training can be a major barrier for many adults.
- **Physical Access to Training:** Difficulties in travelling to training centres or the lack of local options can limit participation in in-person courses.

Challenges for Small Business Owners and Seniors

- **Small Business Owners:** Financial limitations related to socioeconomic status restrict access to quality digital tools and continuous training. This can negatively impact the ability to compete with larger businesses and hinder growth and competitiveness. Additionally, the lack of time for digital training in small businesses with few employees adds an extra layer of difficulty.
- **Seniors:** Access to digital literacy resources varies significantly depending on income level. Seniors with higher incomes generally have better access to devices and the internet, improving their digital skills. In contrast, those with lower incomes face significant financial and technological barriers. Employment status also plays a role, with retirees often having more time but fewer structured opportunities to learn new digital skills.

Identified Challenges

- **Lack of Access to Technological Resources:** Financial limitations prevent the acquisition of digital devices and internet access.
- **Difficulties in Accessing Training:** Economic and logistical barriers limit access to digital literacy courses.
- **Inequalities in Resource Availability:** Differences in access to technology and training between various socioeconomic groups.

Considerations for Trainers

While trainers cannot single-handedly solve the socioeconomic problems of their students, it is essential that they consider these factors to adapt their approach and maximise training effectiveness. The issues stemming from socioeconomic status must be recognized and addressed in the design of educational programs to ensure that all participants could improve their digital skills.

RECOMMENDATIONS FOR TRAINERS

Adaptation to Available Resources:

- **Tailored Training:** Adjust training programs to the technological resources available to each student.
- **Refurbished Devices:** Use refurbished devices and ensure that facilities are well-equipped with the necessary technology.

Strategies for Access and Equipment:

- **Adequate Facilities:** Ensure training locations are equipped with the right technology and provide a reliable internet connection.
- **Free Training Centers:** Establish centres equipped with free access to digital literacy training.

Inclusion of Natural Resources:

- **Intergenerational Education:** Encourage family involvement and intergenerational education to support seniors in digital learning.
- **Accessible Locations:** Offer training sessions in accessible and convenient locations close to participants, not just in central areas.

Methodology and Evaluation:

- **Pilot Tests:** Implement pilot programs to evaluate the effectiveness of the training.
- **Goal-Oriented Learning:** Focus the training on specific goals that contribute to both economic and personal growth.
- **Group Sessions:** Facilitate training through group sessions that promote collaborative learning and the integration of resources.

RECOMMENDATIONS FOR GOVERNMENTS AND PUBLIC ENTITIES

Financial Support and Resources:

- **Funding and Subsidies:** Provide information on funding opportunities and subsidies for the acquisition of technology and access to training.
- **Investment in Technological Equipment:** Invest in purchasing technological equipment and creating free connectivity points.
- **Resource Mobilisation:** Mobilise financial resources to encourage participation and success in education.

Programs and Collaborations:

- **Comprehensive Policies:** Develop inclusive and comprehensive policies for adult education.
- **Free Training:** Promote free training programs offered by public institutions and NGOs.
- **Institutional Collaboration:** Partner with government institutions and organisations to improve access to digital literacy.

Training and Access:

- **Ensure Equitable Access:** Use interdisciplinary approaches and eliminate discrimination based on age, gender, ethnicity, disability, or immigration status.

AGE

Age is a crucial factor in adult education, significantly influencing learning needs and goals. Younger adults tend to focus on professional development and acquiring specific skills that will help advance their careers. In contrast, seniors often seek education for personal enrichment, socialisation, and mental well-being.

As highlighted in the profile definitions, digital needs evolve with age, and the challenges associated with digital literacy become more pronounced. Specific challenges identified include fear of technology, low motivation, and lack of self-confidence.

Variability in Interest and Motivation

The impact of age on digital literacy is notably varied. In our interviews and studies, we observed that the degree of interest in digital literacy among seniors often decreases with age. There is a proportional relationship between the lack of motivation to learn new technologies and increasing age. This suggests that as individuals age, they may show less willingness to adopt and learn digital tools, often due to fear of technology, low motivation, and a lack of confidence in themselves.

Considerations for Small Business Owners

For small business owners, age also plays an important role. Prior experience, willingness, and motivation to learn vary greatly by age. It is essential to tailor content and training methodologies to account for these generational differences.

Specific Challenges Identified

1. **Fear of Technology:** Fear and anxiety toward new technologies can be more pronounced among older individuals.
2. **Low Motivation and Confidence:** Lack of confidence in their abilities and low motivation can limit digital learning.
3. **Diversity in Needs:** Digital needs change with age, requiring tailored approaches for each age group.

RECOMMENDATIONS FOR TRAINERS

Curriculum Adaptation:

- **Needs Assessment:** Understand the specific needs based on the age of the students to personalise the course content.
- **Age-Specific Content:** Tailor materials to be relevant to different age groups, especially for SBOs.

Teaching Methodologies:

- **Learning Communities:** Foster a learning environment where students feel supported and motivated.
- **Game-Based Learning:** Implement game-based learning methods to make the experience more engaging.
- **Repetition and Strategies:** Use repetition strategies to reinforce learning.
- **Experiential Learning:** Offer practical opportunities for hands-on learning.
- **Personalised Approach:** Adapt the training to meet the individual needs of each student.

Addressing Fear and Anxiety:

- **Informal Spaces:** Use informal learning environments to reduce anxiety and ease learning.
- **Group Methodologies:** Implement group approaches to encourage peer support and collaboration.
- **Interactive Materials:** Use interactive and hands-on materials to create a dynamic learning experience.
- **Practical Benefits:** Emphasise how digitalization can improve daily life and highlight the concrete benefits of learning new skills.
- **Gradual Methods:** Introduce traditional methods before transitioning to modern approaches to ease resistance to change.

Age-Specific Training:

- **Blended Learning:** Offer blended learning formats that combine flexibility with personal interaction.
- **Success Stories:** Share success stories of people with similar characteristics who have improved their lives through digital literacy.
- **Gradual Learning:** Implement a gradual learning approach that allows students to progress at their own pace.
- **Encourage Participation and Autonomy:** Promote student participation and autonomy in the learning process.
- **Repetition and Reinforcement:** Reinforce learned content through repetition and continuous practice.

Specifically for Small Business Owners (SBOs):

- **Understand Experiences:** Research and understand the experiences of other SBOs of similar age and sector to help overcome psychological barriers.
- **Age Adaptation:** Adjust the training based on the age and previous experience of SBOs, considering their unique challenges and needs.

RECOMMENDATIONS FOR GOVERNMENTS AND PUBLIC ENTITIES

- **Inter-Ministerial Forums:** Create inter-ministerial forums to coordinate educational efforts.
- **Cross-Sector Collaboration:** Encourage collaboration across sectors and offer incentives to facilitate access to training.
- **Workplace Training and Community Learning:** Promote workplace training and revive learning in families and communities.
- **Health Considerations:** Ensure educational programs are designed to be accessible for individuals with health issues.
- **Inclusion and Accessibility:** Implement policies that promote inclusion and accessibility in education.

GEOGRAPHICAL LOCATION

Educational Context of Geographical Location

Geographical location is a crucial factor in adult education, significantly affecting the availability and accessibility of educational programs. Understanding this aspect is essential for addressing disparities in digital training access across different regions.

Challenges in Rural and Urban Areas

Interviews with seniors and small business owners consistently highlighted difficulties in reaching course locations. Residents or workers in rural areas face greater challenges accessing training since most educational facilities are located in urban centres. This issue is exacerbated for those living in remote areas, where educational access is severely limited.

In urban areas, accessibility issues also need to be addressed. Seniors, especially those living alone, often find it challenging to travel to training sites due to mobility issues. Similarly, small business owners, who typically have tight schedules, struggle to find time to attend in-person courses.

Connectivity Issues

Additionally, poor Internet connectivity in many areas poses a significant barrier, particularly when digital training requires reliable connectivity. Without dependable Internet access, participants are deprived of essential digital resources needed for learning and practice.

To address these challenges, it is crucial to implement strategies that account for geographical variations. This includes offering accessible and flexible online training, establishing training centres in less accessible areas, and tailoring content and methods to the specific needs of different geographical groups.

Specific Challenges Identified

1. **Transportation Difficulties:** Physical access to training centres can be problematic in both rural and urban areas.
2. **Internet Connectivity:** Poor connectivity in rural areas limits access to digital training.
3. **Access to Resources:** Lack of resources and training tailored to the specific needs of each geographical area.

RECOMMENDATIONS FOR TRAINERS

Content Adaptation:

Rural Areas:

- **Basic Content:** Offer training in essential daily life skills such as online shopping and administrative management.
- **Community-Based Learning:** Promote community and intergenerational training to facilitate learning.
- **Adapted Materials:** Provide translated and locally adapted materials, including specific glossaries.

Urban Areas:

- **Modular Content:** Implement modular content that fits the needs and schedules of learners.
- **Advanced Training:** Offer specialised training in areas such as e-commerce, cybersecurity, and enhancing competencies.
- **Flexibility and Continuous Access:** Provide access to flexible and ongoing training with the latest digital tools.

Teaching Methods:

- **Online and Blended Learning:** Offer online and blended learning options to accommodate varying time and location needs.
- **Informative Capsules and Flexible Training:** Implement short, focused informational sessions and flexible training to support self-paced learning.
- **Informal and Autonomous Learning:** Encourage informal and self-directed learning when possible.

RECOMMENDATIONS FOR GOVERNMENTS AND PUBLIC ENTITIES

Technological Support Services:

- **Invest in Infrastructure:** Invest in improving digital infrastructure in rural areas to ensure better connectivity and access to training.
- **Support Networks:** Create national and international networks of innovative projects to promote the exchange of experiences and best practices.
- **Equipped Spaces:** Establish accessible spaces with electronic devices and internet connectivity in both rural and urban areas.
- **Community Spaces:** Invest in creating well-equipped community learning spaces.

Improvements in Transportation and Accessibility:

- **Transportation Networks:** Enhance transportation networks to facilitate access to training centres in both rural and urban areas.
- **Urban Accessibility:** Ensure that training centres in cities are located in accessible areas and consider the mobility needs of learners.

Supportive Policies:

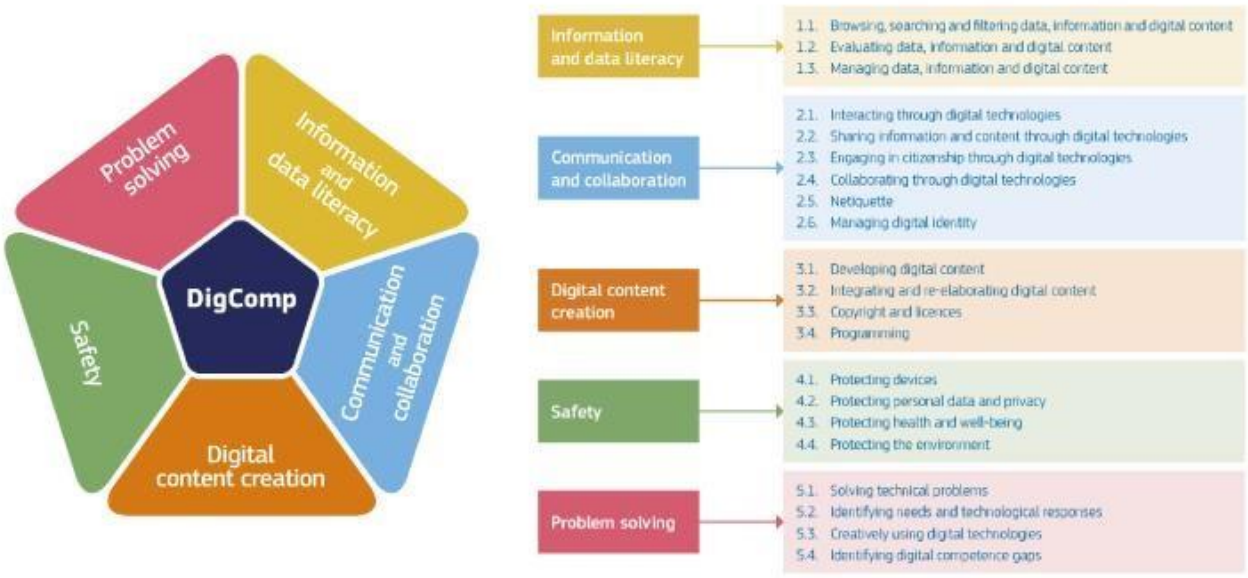
- **Inclusion Policies:** Implement public policies that improve access to digital education based on local and regional needs.
- **Rural Digitalization Support:** Develop initiatives to support digitization in rural areas, including subsidies and training programs.

RECOMMENDED CONTENTS

The objective of this part of the guide is to provide guidelines and indicative content for the creation of the final educational material by tutors. The contents proposed here must not be considered mandatory or limiting and should be adjusted by the content creators and tutors according to the needs of each group.

The proposed topics and their classification are partially based on the DigComp 2.2. Framework (Vourikari et al., 2022), adapted to the needs and specificities of both Vulnerable Target Groups[1]. This reference ensures that the training areas cover essential digital competencies while adjusting to the characteristics of our target groups.

Figure 2. DigComp 2.2 Framework



For seniors, the content focuses on basic digital competencies that will enable them to integrate into the digital environment in a simple and user-friendly way. Key aspects will include information and data literacy, the use of communication tools, and the understanding of essential online security and privacy concepts.

[1] At the time the present guidelines are being developed, the 2024-25 updates to the DigComp 2.2. weren't yet available: https://joint-research-centre.ec.europa.eu/scientific-activities-z/education-and-training/digital-transformation-education/digital-competence-framework-citizens-digcomp/current-developments-digcomp-2024-2025_en

These contents are designed to be accessible and understandable for individuals with little or no previous experience in the digital field.

For small business owners, the content **emphasises** practical digital skills that allow them to improve their business management and adapt to the new demands of the digital market. Among the highlighted topics will be the use of digital marketing tools, management of e-commerce platforms, and the use of applications to improve operational efficiency. The focus will be on providing them with tools that help them optimise their business processes while simultaneously enhancing their online presence.

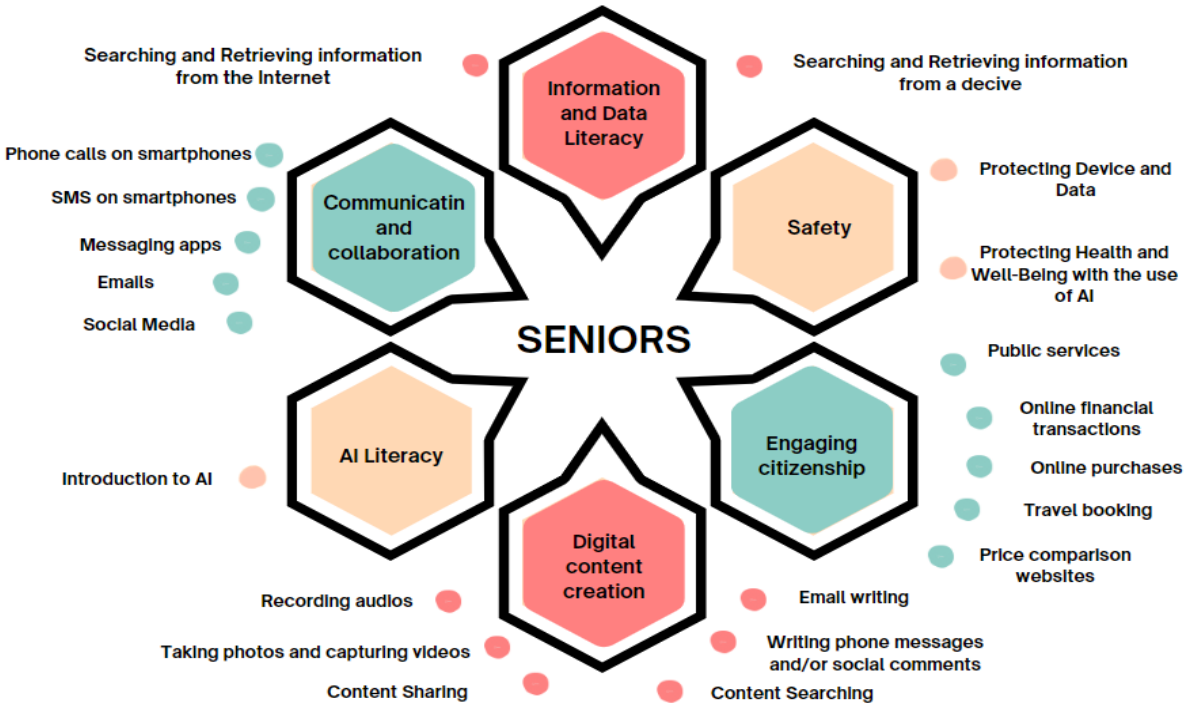
It is important to note that, although these contents are organised according to the specific needs of each group, they are not mutually exclusive. Trainers may adapt the content to different levels of knowledge and experience of the participants, and both seniors and small business owners can benefit from learning topics outside of their specific target group.

In summary, this section aims to offer a list of key content that addresses the main challenges identified in the digital training of seniors and small business owners, providing trainers with a broad and flexible framework that adapts to the specific needs of each educational context.

SENIORS

Figure 3 presents a diagram of key digital competence areas for older people, focusing on the essential skills they need to navigate the digital world. These include information and data literacy, communication, security, digital content creation, AI literacy and civic participation. The topics highlighted within each area provide practical guidance for trainers to develop relevant and accessible content that addresses the specific needs of older adults.

Figure 3. Diagram of key digital competences and recommended contents for seniors



Useful insights

It is important to note that most of the target audience may not have personal computers or regular access to them, and it is expected that they will primarily use their mobile phones instead.

The following are the main thematic areas/topics to be addressed in a digital skills training for inclusion of seniors. A detailed example of a Manual detailing the "Email Communication Tool" - specifically adapted for Senior learners - has been developed by the project and is available here:

INFORMATION AND DATA LITERACY

Searching and Retrieving information from a device

Useful insights:

Because the tools and interfaces used by different mobile phones may vary depending on the manufacturer and the version of the Operating System, the seniors should be given time to practise what they learn on their own devices, with the tutors providing help when needed.

Also, seniors may face physical difficulties like impaired vision or hearing. So, it is very important to dedicate some time (or even an initial part of the manual) to introduce the several accessibility settings available in the Android Operating System and help trainees set up their devices according to their needs.

Why:

Basic knowledge that is necessary for most subsequent subjects

Indicative Topics:

- What is Data
- Data types (text, image, video, audio)
- Storing data (files and their characteristics)
- Organising data (folders, file systems, storage devices)
- File system navigation
- Searching for files

Searching and retrieving information from the Internet

- Search Engines: Proposed tool Google search engine

Why:

- The most popular search engine with a market share that exceeds 90%
- Default search engine used by Android phones and tablets

Indicative Topics:

- Accessing search engine services
- Performing a search
- Navigating through the search engine results
- Accessing information through the results page
- Assessing information credibility and quality (safety, critical thinking)
- Identifying Fake News/Scams (safety)
- Storing information retrieved from the Internet
- Watching videos on the Internet

Proposed tool: YouTube (with the app or through the web browser)

Why:

- Available in most mobile devices
- Great source of how-to videos (e.g. cooking recipes, diy etc.)
- Entertainment
- Vast collection of free videos

Indicative topics:

- Searching for a video
- Navigating the search results
- Accessing video from results page
- Video playback controls
- Navigating proposed videos list

COMMUNICATION AND COLLABORATION

Phone calls on smartphones

Useful insights:

In most cases, this topic is considered elementary and might be omitted. But there may be members of this specific DVG that face difficulties in operations like the addition of new contacts in the device' s phone

book. So, it might be a good idea to briefly present this topic anyway, or to make an inquiry among the participants and present specific operations that they are not familiar with.

Why:

- Efficient and easy communication
- Real time communication
- Digital implementation of a traditional type of communication that everyone is familiar with

Indicative topics:

- Making a phone call using the on-screen dialer
- Storing a contact on the device's phone book
- Accessing and navigating through stored contacts
- Making a phone call through the phonebook
- Phone call management (answering or rejecting a call, using the speakerphone, adjusting call volume)
- Reviewing call history (outgoing, incoming, unanswered calls, call history from specific contacts, adding a new contact from the call history list, making a phone call from the call history list)
- Spam call (how to reject, report or block)

SMS on smartphones

Why:

- Popular communication method
- Supported by all mobile phones and network operators
- Provides asynchronous communication which is more discrete
- Suitable for seniors with hearing difficulties

Indicative topics:

- Accessing the SMS application
- Creating a new SMS message
- Defining the receiver of the message (manual phone number insertion, picking from the contacts list, adding multiple receivers to a message)
- Composing the message
- Sending a SMS through the phonebook
- Reading incoming messages
- Organisation of stored messages
- Navigating and reading stored messages

Messaging apps (WhatsApp, Viber, Messenger etc.)

Proposed tool: WhatsApp

Why messaging apps:

- Easy and free textual communication (low cost compared to SMS)
- Support VoIP calls (low cost compared to GSM phone calls)
- Support video calls
- Support both real time and asynchronous communication
- Support group communication (textual, VoIP and video)

Why WhatsApp:

- Larger user base than Viber
- Easy interface

Indicative topics:

- Installing and setting up the WhatsApp app
- Chatting
    - Starting a new chat
    - Selecting one or more contacts to chat with
    - Sending text, audio, video messages and files
    - Navigating and opening available chats
    - Deleting chats
- Making Calls
    - Starting a new call
    - Selecting contact/contacts to communicate with
    - Communicating with VoIP
    - Communicating with video
- Contacts management
    - Adding new contacts
    - Inviting contacts from phone book
    - Editing contacts
    - Deleting contacts

Email

Proposed tool: Gmail (through Gmail app and through web) and Contacts

Useful insights:

The Email service is a digital implementation of the traditional post office service. Consequently, there are many similarities in the goal and the operation of those two services. The post office service has been around for many years and most seniors have used it and are quite familiar with it. Pointing out these similarities both in the written manuals and during the instruction, may make it easier for the seniors to understand and use the Email service.

Why Email:

- Popular communication method
- Reduced cost compared to texting
- Digital implementation of a traditional communication method that seniors are comfortable with
- Advanced capabilities like file attachment

Why Gmail:

- One of the most popular email services
- Pre-installed app in all android devices
- Free of charge

Indicative topics:

- Short introduction to the email service
- Email message basic structure (sender, recipient, subject, content)
- Email address structure and usage
- Creating a google account

Subtopic: creating a safe password (safety)

- Inserting an account to the Gmail app
- Composing a basic email message
- Adding recipients (manually or from contacts)
- Installing the Contacts app
- Contacts management (adding, navigating, editing, deleting contacts)
- Navigating, reading and managing stored emails (distinguishing unread emails, identifying email sender and subject, deleting emails)
- Replying and forwarding received emails
- Recognizing and handling spam and suspicious emails (safety)

Social Media

Proposed tool: Facebook

Why Social Media:

- Popular and modern communication method
- May help seniors keep in touch with younger family members (e.g. grandchildren)
- Social media can help seniors expand their social circle, overcoming spatial and temporal limitations. This is particularly important for example for seniors living in rural areas with small populations, or for seniors that are facing mobility issues

Why Facebook:

- Very popular among users
- Supports posts containing only text (as opposed to Instagram where users cannot post text without images)
- Has additional features for entertainment like games

Indicative topics:

- Installing and setting up the Facebook app
- Creating a Facebook account
- Building a network of contacts (searching for contacts, sending friend requests, handling incoming friend requests)
- Creating contact groups
- Creating a new post with text, photos and video
- Reviewing reactions to posts
- Interacting with contacts' posts (like, comment, etc.)
- Communicating (chatting and messaging) with Facebook friends
- Safety (presentation of safety topics relative to the use of social media, like false identity, personal information disclosure, etc.

ENGAGING CITIZENSHIP

Public services

Useful insights:

Because the range of available digital services significantly varies from country to country, this part of the guide is very general and should be adjusted accordingly by the experts in each country. The experts should

choose the public services that are most useful for the intended DVG and create the corresponding manuals.

Indicative topics:

- **Gaining access to public digital services**

This part of the manual should describe the process that a citizen must follow, to obtain an account (e.g. a username and password) that will be used to connect to the digital services. This account may be common for all public digital services, or each service or group of services may require a different account.

- **Accessing the digital service/s**

This part should present the ways in which citizens can access each digital service or group of services (e.g. through a mobile app, through a specific web page, or through a government portal).

- **Using the digital service**

For each of the digital services picked out for the specific DVG, the manual should contain a step-by-step guide on how to use the service (e.g. an example scenario with screenshots). If possible, the trainees should be given the opportunity to try out the service, with the aid of the tutor.

- **Security**

This part could point out the security risks of users disclosing their account information to others and describe any security measures adopted by the service (e.g. two factor authentication, token generators etc.) to protect the users.

Online financial transactions

- **E-banking**

Useful insights:

Different banks may have different processes for providing access to e-banking services. That is why the manual might contain only an abstract description of the process, or just point out the most common prerequisites for creating an e-banking account.

Also, there may be multiple ways to access the e-banking services of a bank (e.g. mobile app, web page etc). Usually, mobile apps tend to be more user friendly and have simpler user interfaces, making them more suitable for seniors.

Finally, because user interfaces generally vary among different banks, the manual could contain examples of one or two popular banks. Then, during the instruction, the trainees could be given time to use the apps of their own banks, with the aid of the tutor.

Indicative topics:

- Obtaining an e-banking account
- Installing and setting up the e-banking app
- Connecting to the e-banking app (security features like two Factor Authentication etc.)
- Reviewing bank account information (navigating bank accounts, reviewing account balance and recent transactions)
- Performing transactions (transferring money to another account, paying bills online)
- Security
- This part could point out the security risks of users disclosing their account information to others and describe any security measures adopted by the e-banking service/app (e.g. two factor authentication, token generators etc.) to protect the users

Online purchases

- **E-shops**

Useful insights:

The user interfaces may vary among different e-shops, but the basic features and functions are common.

Indicative topics:

- Creating an e-shop account
- Browsing available products through the product categories
- Searching for a specific product
- Adding products to cart
- Managing cart
- Checking out
- Payment options
- Delivery options and information
- Security tips

Price comparison websites

Useful insights:

Price comparison websites enable users to perform market research among several e-shops. Some of them also give the ability to immediately purchase products through the platform, providing some level of assurance for the validity of the transaction and the delivery of the products.

Indicative topics:

- Accessing the price comparison website
- Browsing the available products through the categories' menu
- Searching for specific products
- Navigating through the search results and visiting the stores selling the products
- Creating a platform account
- Adding products to platform cart
- Managing cart
- Checking out
- Payment options
- Delivery options

Travel booking

Indicative topics:

- Booking transportation (planes, trains, ships)
- Booking accommodation (hotels, Airbnb, proprietary hotel sites)
- Booking cruises
- Booking organised tours

DIGITAL CONTENT CREATION

Useful insights:

For most seniors, the creation of complex digital content should not be considered a necessary skill. On the other hand, creating basic digital content for sharing and communication purposes might turn out to be useful, interesting and in some ways entertaining.

Writing phone messages and/or social comments

Indicative topics:

- Selecting "+" icon to start a new message
- Choosing the recipient of the message
- Writing text and adding emoji
- Using the 'comment' function on FB and IG
- Writing comment and adding emoji
- Customise personal profile on WhatsApp and/or social nets (For advanced users)

Email writing

Indicative topics:

- Subject is your visit card (rules and tips to write it at your best)
- Write always to one person
- Write "human", warm your message
- Let your recipient feel highly considered and involved
- Use "bridge-words"
- Never forget to say "regards," at the end and sign with your name
- Leave the door open (to answer)

Content Searching

Indicative topics:

- Which is the best keyword? (how to choose a look at Google trends)
- The use of "" for a specific content search
- How to read/evaluate the search results

Content Sharing

Indicative topics:

- How to share a WhatsApp message and/or a social post
- Share "stand alone" or share with your point of view?
- How many recipients can you share to?

Taking photos and capturing video

Indicative topics:

- Opening the mobile phone' s camera app
- Basic camera settings
- Taking pictures
- Capturing video
- Browsing and viewing photos and videos through the gallery
- Managing photos and videos through the gallery
- Sharing/Sending photos and videos through the gallery via WhatsApp/email

Recording audio

Indicative topics:

- Opening the sound recording app
- Recording audio
- Browsing and playing back stored recordings
- Managing recordings (rename, delete, etc.)
- Sharing recordings with others

SAFETY

Protecting Devices and Data

Useful insights:

Presenting matters concerning security to seniors, needs special care. As it applies to all Internet users, it is important for seniors to be aware of dangers associated with using online services, so that they are able to protect themselves. On the other hand, it is crucial to introduce such matters in a way that will not be intimidating and will not discourage them from using technology. A good approach might be to focus the presentation on good security practices and features (e.g. using secure passwords, two factor authentication etc.) and refer to specific security risks to pinpoint the necessity of following these practices. Introducing the solution before talking about the problem may reduce anxiety.

Another thought is that seniors do not need to become security experts. So, introducing security issues within the content of the applications and services they apply to, might be a good choice.

Indicative topics:

- Mobile phone security (locking screen with pin, pattern, fingerprints etc.)
- Ways to assess website credibility
- Ways to assess information validity
- Using secure passwords
- Handling suspicious emails
- Using two factor authentication
- Using social media with safety
- Protecting sensitive information
- Tips for safe electronic purchases

Protecting Health and Well-Being with the use of AI

Proposed tool: Google Assistant

Useful insights:

The use of AI in the form of a digital assistant, that allows performing simple every-day tasks through voice commands, can be very appealing to seniors. This makes digital assistants a great way to introduce AI technology to seniors and help them feel comfortable with it.

Why Google Assistant:

- Physical limitations like impaired vision and movement precision deterioration, may make the use of small digital devices like mobile phones difficult. Google assistant provides the ability to control Android mobile phones and devices through voice commands.
- Because it controls the android device it is installed on, its features can be demonstrated and used immediately, without requiring purchasing and setting up additional equipment.

Indicative topics:

- Simple introduction to AI and Digital Assistants
- Installing the Google Assistant App
- Commands to execute mobile phone operations (texting, making phone calls, sending emails, setting up alarms and reminders, remembering information, searching information on the internet, searching videos on YouTube)
- Use Google Calendar as an agenda to remind their appointments or anything they must do and they can't forget in any way

AI LITERACY

Introduction to AI

Indicative topics:

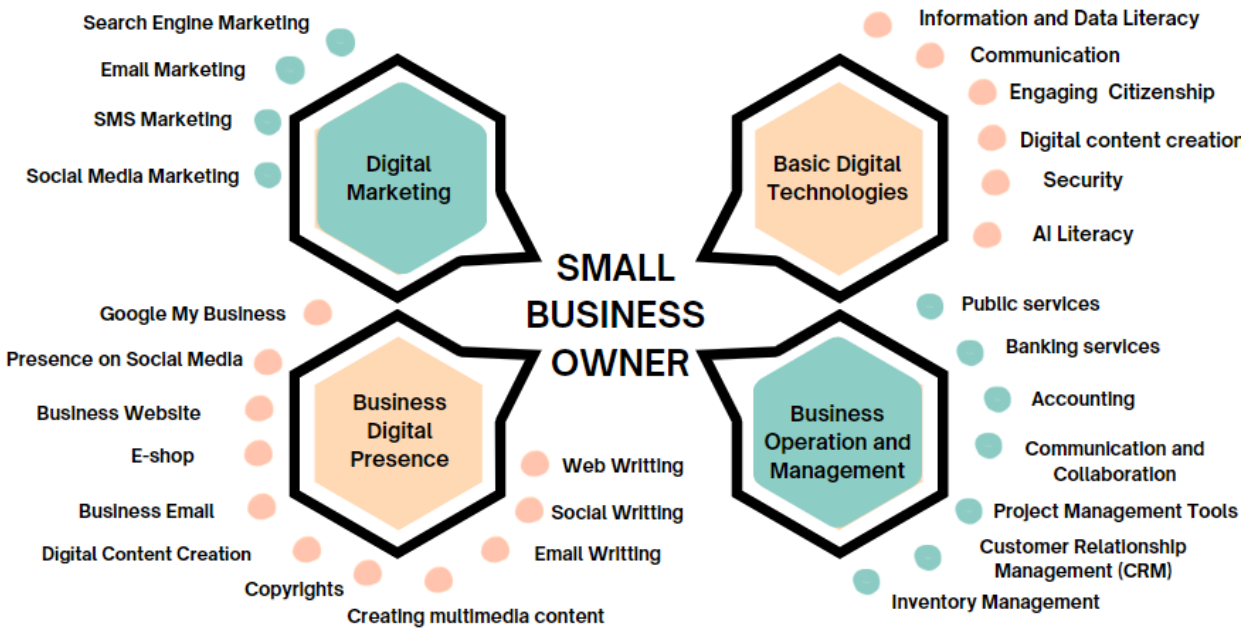
- What is AI?
- Meet ChatGPT
- AI usage examples (Gmail spam filter, personalised ads, YouTube video recommendations, voice recognition etc.)
- AI issues
    - Sensitive data privacy
    - AI makes mistakes
    - Quality and validity of training data

DIGCOMP 2.2 ATTITUDES (TRANSVERSAL SKILLS) PURSUED BY THE PROPOSED CONTENT FOR SENIORS

- Recognizes information required to tackle real life problems and forms inquiry strategies to retrieve this information (focus on search results evaluation, learning to distinguish between promoted and organic, fake and reliable…)
- Inclined to ask critical questions in order to evaluate the quality of online information and concerned about purposes behind spreading and amplifying disinformation.
- Willing to fact-check a piece of information and assess its accuracy, reliability and authority, while preferring primary sources over secondary sources of information where possible.
- Assesses, filters and combines information from multiple sources to draw meaningful conclusions
- Choses the most suitable communication tool, based on the special characteristics and limitations of each communication scenario
- Uses digital technology, to perform simple everyday tasks as well as sensitive transactions in a fast, easy and secure manner
- Concerned that much information and content may not be accessible to people with a disability.
- Open to change one’s own administrative routines and adopt digital procedures when dealing with government and public services.

SMALL BUSINESS OWNERS

Figure 4. Diagram of key digital competences and recommended contents for SBO



Because the digital tools used by businesses may fall into more than one sector of the DigComp 2.2 Framework, the proposed subjects on this part of the guide, are classified primarily by the Business Operation they serve.

As pointed out in the previous sections of this document, Small Business Owners (SBO) comprise a DVG with remarkably diverse characteristics and needs. Depending on factors like age, educational level, business location and business sector, their profiles may vary from reluctant people, with no previous knowledge on digital technologies, to strongly motivated, tech savvy people, who ask for advanced training, to get their business to the next level. As a result, the educational material required to fully cover the needs of this DVG, may have to extend from simple subjects like the ones proposed for the seniors' DVG, to advanced, specialised subjects like CRM and digital marketing. That is why the proposed contents are presented in a higher level, with less detail.

Useful insights:

Responding to the diverse needs of this DVG, a good strategy would be to develop content for various subjects in a modular format. This would allow curriculum designers to select the content best suited for each group of trainees based on their specific characteristics. Additionally, offering trainees the option to choose modules that align with their interests could enable the creation of personalised curricula. In the

context of digital tools and services for businesses, which are often complex and typically require a PC to utilise fully, it's essential to consider the practical needs of small business owners. These individuals often have numerous responsibilities and must stay mobile. Therefore, for tools and services that are available across both PCs and mobile phones, educational material should encompass both use cases, ensuring that users can effectively manage operations from either platform depending on their circumstances.

BASIC DIGITAL TECHNOLOGIES KNOWLEDGE

Useful insights:

Most of the subjects in this section primarily aim at people with no or minimum experience on digital technologies. Its goal is to provide basic knowledge on digital tools and services and hopefully form the basis required for them to advance to the next level and be able to use digital technologies for their business. Advanced subjects like image editing could be presented briefly at an elementary level. Other subjects like security are important and necessary for all trainees

Information and Data Literacy

Indicative topics:

- Storing information in an organised manner
- Retrieving and viewing stored information
- Searching and retrieving information from the Internet
    - Google Search
    - How Google Search uses AI
    - How Google makes use of search data
    - Alternative Search Engines

Communication

Indicative topics:

- Phone calls
- SMS
- Email

Proposed tool: Gmail (through mobile app and website)

- Messaging apps for textual, video and audio communication

Proposed tool: WhatsApp, Viber (through mobile app and PC application)

- Social Media

  Proposed tools: Facebook, Instagram (through mobile app, PC application and Web)

Engaging Citizenship

Indicative topics:

- Accessing and using Public Services
- Financial Transactions
    - E-banking Services
    - Electronic Purchases
        - E-shops
        - Price comparison websites
        - Business travel/trade shows booking

Digital content creation

Indicative topics:

- Creating and editing data files

  Proposed tools: MS Office, Google Docs

- Documents
- Worksheets
- Presentations
- Searching illustrations, images and/or icons on specific platforms, better if free such as pixabay, freepik, pexels, nouns … (even Google image, explaining the Creative Commons rule)
- Creating and editing images

  Proposed tools Phone camera app, Canva (online tool), Gimp

- Creating and editing video files

  Proposed tools Phone camera app, VSDC video editor

- Creating and editing audio files

Proposed tools Phone recording app, Audacity

- Copyrights
    - Using content retrieved from the Internet

Security

Indicative topics:

- Data integrity risks and measures
- Data privacy risks and measures
- Malware and protection
- Hackers and protection
- Good security practices

AI Literacy

Indicative topics:

- What is AI?
- Meet ChatGPT
- AI usage examples (Gmail spam filter, personalised ads, YouTube video recommendations, voice recognition etc.)
- AI issues
    - Sensitive data privacy
    - AI makes mistakes
    - Quality and validity of training data

BUSINESS OPERATION AND MANAGEMENT

This section deals with tools and services that contribute to the basic operation and management of the business.

Public Services

Indicative topics

- Taxation Services

- Social Security Services
- Public Administration Services (issuing certificates, submitting applications, financing calls etc.)

Banking Services

Indicative topics

- Creating a business account
- Provision and usage of POS terminal
- E-banking

Accounting

Proposed tool Cloud based software solutions like QuickBooks, FreshBooks, ZohoBooks etc.

Indicative topics

- Payroll
- Expenses tracking
- Invoicing

Communication and Collaboration

Proposed tools: Google Workspace, Microsoft Teams

Indicative topics

- Chatting
- Making video calls
- File storage and sharing
- Collaborative documents editing (Documents, Worksheets, Presentations etc.)

Project Management Tools

Proposed tools: Cloud based solutions like Asana, Trello, Jira etc.

Why:

Project management tools can help small business owners improve efficiency, communication, and collaboration within their teams.

Useful insights:

By leveraging the right project management tool, small business owners can effectively manage their projects and achieve their business goals.

Indicative topics:

- Introduction to project management tools
- Types of project management tools and their uses
- Comparison of popular project management tools (e.g. Asana, Trello, Jira)
- Selecting the right project management tool for your team/project
- Implementing project management tools effectively in a team
- Integrating project management tools with other software and systems
- Best practices for using project management tools
- Case studies of successful project management tool implementation
- Common challenges and solutions in using project management tools
- Future trends in project management tools.

Customer Relationship Management (CRM)

Proposed tools: online platforms like pipedrive, Zoho CRM and Monday.com

Indicative topics

- Managing contacts and leads
- Communicating with contacts/leads
- Contacts segmentation
- Workflow automation

Inventory Management

Proposed tools: online platforms like Zoho Inventory and Monday.com

Indicative topics

- Managing inventory
- Managing orders
- Tracking inventory

BUSINESS DIGITAL PRESENCE

Digital technologies advancement has changed the way people seek for products and services, thus making it imperative for businesses to have a presence on the Internet. This section contains services and tools that establish this presence, allowing potential clients to discover and interact with a business.

Useful insights:

Some of the processes referred to, like creating a business web site or an e-shop, may be quite complex, time consuming and require advanced knowledge (e.g. programming). This means that it may be practically impossible for Small Business Owners to perform those tasks. So, the goal of the relative manual should not be to turn the SBO into an adept web developer, but to provide him the understanding required to oversee the development and make modifications and interventions to the site or the e-shop during its operation.

Google My Business

Show business information on Google Search and Google Maps

Indicative topics:

- Claiming and verifying ownership of the business
- Adding and updating business information
- Interacting with existing and potential customers
    - Creating announcements
    - Accepting and responding to reviews

Presence on Social Media (Facebook, Instagram, LinkedIn, etc.)

Indicative topics:

- Creating a business profile (Facebook business page, Instagram business account, LinkedIn profile)
- Social media strategy tips (editorial plan, how to write posts, how to increase and engage audience, publishing calendar…)
- Interacting with existing and potential customers
- Social media performance monitoring (Facebook business page insights, Instagram account insights)

Business Website

Indicative topics:

- Introduction to the www service
- Purchasing web hosting and a domain name
- Designing your website (visual layout, content sections, UI/UX design, free and login areas…)
- Developing a web site with WordPress
    - Managing site
    - Updating content
    - Using SEO addons to improve site placement in search results
    - Using analytics addons to monitor site performance and issues

E-shop

Useful insights

This subject is aimed at retail business owners. An e-shop ensures presence of the business on the web, while providing the ability to showcase products and perform on-line sales. So having an e-shop also covers the need for a business website.

Proposed tool: An all-in-one online eCommerce platform like shopify

Indicative topics:

- Introduction to e-shops and their operations
- Creating a shopify online store
- Design the Information Architecture, in order to make the surfing experience easy, enjoyable and memorable
- How to present and promote products/services catalogue (creating a DB)
- writing single product/service sheets with all useful info and inherent links
- Setting up payment methods
- Managing Inventory
    - Using Stocky (shopify' s featured Inventory Management Software)
    - Integrating a 3rd party IMS
- Setting up shipping
    - Shopify featured shipping services
    - Integrating 3rd party shipping services

- Integrating shopify functionality in a WordPress web site

Business Email

Proposed tool (Google business email through Google Workspace)

Indicative topics:

- Creating a Google Workspace account
    - Setting up business domain name
    - Buying a domain through Google Workspace
    - Using existing (pre-purchased) domain
- Creating business email accounts
- Creating group email addresses (mailing lists)

Digital Content Creation

Useful insight

Educational material on digital content creation could be associated with the Digital Presence of the Business (e.g. creating impressive visual content for social media posts, for the website and for the E-shop)

Web Writing

Indicative topics:

- Labelling of web sections (label is the web user's compass, must be clear and unmistakable)
- Short text for an easy, fast and enjoyable experience through your website
- Bundle messaging (all the texts such as call to action, registration, login, subscription, etc.)

Social Writing

Useful insight: Any Social has its own tone of voice (learn the differences and use them).

Indicative topics:

- Writing teasing, "catching" and viral posts
- Creating a long-lasting dialogue with you audience
- Build your brand and personal reputation, editing only authentic, reliable and appropriate contents

Email writing

Indicative topics:

- Subject is your visit card (rules and tips to write it at your best)
- Write always to one person
- Write "human", warm your message
- Let your recipient feel highly considered and involved
- Use "bridge-words"
- Never forget to use a closing line (best regards etc.) At the end and sign with your name
- Leave the door open (to answer)

Creating multimedia content

Indicative topics

- Creating and editing images

Proposed tools Canva (online tool), Gimp

- Creating and editing video files

Proposed tool: VSDC video editor

- Creating and editing audio files

Proposed tool: Audacity

Copyrights

- Using content retrieved from the Internet
- Defining copyrights for own creations

DIGITAL MARKETING

Digital marketing tools and services allow for low cost, targeted promotion. They can be used to achieve business goals like brand awareness, leads generation, brand visibility increase, sales increase etc.

Search Engine Marketing

Proposed tool: Google Ads

Indicative topics:

- Introduction to SEM (characteristics, tips etc.)
- Creating a Google Advertising account
- Creating Campaigns and ads
- Monitoring campaign performance
- Adjusting campaigns to improve performance

Email Marketing

Proposed tool: Online platforms like MailChimp, MailerLight and Brevo

Indicative topics:

- Introduction to email marketing (characteristics, tips etc.)
- Creating a platform account
- Creating an email Campaign (contact plan: why, where, when, what, who)
- Creating customised email ads
- Monitoring campaign performance
- Adjusting campaign to improve performance
- Sending a periodic Newsletter to entertain and retain customers (Inbound MKTG)

SMS Marketing

Proposed tool: Online platforms like MailChimp and Brevo

Indicative topics:

- Introduction to SMS marketing (characteristics, tips etc.)
- Creating a platform account
- Creating an SMS Campaign
- Creating personalised SMS ads
- Monitoring campaign performance
- Adjusting campaign to improve performance

Social Media Marketing

Proposed tools: Facebook, Instagram, Linkedin

Indicative topics:

- Introduction to Social Media Marketing (characteristics, tips etc.)
- Social advertising (how to design and write a campaign, targeting, customised messages, period, budget, reporting…)
- Creating Campaigns and Advertising (Facebook, Instagram and/or LinkedIn ads)
- Monitoring campaign performance
- Adjusting campaign to improve performance

DIGCOMP 2.2 ATTITUDES (TRANSVERSAL SKILLS) PURSUED BY THE PROPOSED CONTENT FOR SMALL BUSINESS OWNERS

- Intentionally avoids distractions and aims to avoid information overload when accessing and navigating information, data and content.
- Values tools designed to protect search privacy and other rights of users
- Weighs the benefits and disadvantages of using AI-driven search engines
- Inclined to ask critical questions in order to evaluate the quality of online information and concerned about purposes behind spreading and amplifying disinformation.
- Willing to fact-check a piece of information and assess its accuracy, reliability and authority, while preferring primary sources over secondary sources of information where possible.
- Considers transparency when manipulating and presenting data to ensure reliability, and spots data that are expressed with underlying motives (e.g. unethical, profit, manipulation) or in misleading ways.
- Open to AI systems supporting humans to make informed decisions in accordance with their goals (e.g. Actively deciding whether to adopt an AI recommendation in digital marketing campaigns or not).
- Willing to adapt an appropriate communication strategy depending on the situation and digital tool: verbal strategies (written, oral language), non-verbal strategies (body language, facial expressions, tone of voice), visuals strategies (signs, icons, illustrations) or mixed strategies
- Inclined not to share digital resources if not able to cite their author or source in an appropriate manner.
- Open to change one's own administrative routines and adopt digital procedures when dealing with government and public services.
- Encourages everyone to express their own opinions constructively when collaborating in digital environments.

- Inclined to use appropriate digital tools for fostering collaboration between the members of a team while, at the same time, ensuring digital accessibility.
- Inclined to adopt an empathic perspective in communication
- Careful about keeping one's own and others' personal information private
- Identifies both the positive and negative implications of the use of all data, but especially personal data, by AI-driven digital technologies such as apps and online services.
- Open to creating something new from existing digital content using iterative design processes.
- Respectful of rights affecting others (e.g. ownership, contract terms) and when relevant, opting for open-source software.
- Open to consider whether open licences or other licence schemes are more suitable when producing and publishing digital content and resources.
- Keen to consider some self-protective behaviours such as not using open Wi-fi networks to make financial transactions or online banking.
- Confident in carrying out online transactions after taking appropriate safety and security measures.
- Seeks out ways in which digital technologies could help live and consume in a way which respects the sustainability of human society and the natural environment.
- Values the benefits of managing finances and financial transactions through digital means while acknowledging the associated risks
- Willing to help others (e.g. colleagues and employees) to improve their digital competencies, building on their strengths and mitigating their weaknesses.
- Does not get discouraged by the fast pace of technological changes but believes that one can always learn more about how technology can be used today.

COMMUNICATION STRATEGY

Recommendations and how to apply them

Training programs designed for vulnerable groups, such as **seniors** and **small business owners**, require a tailored and thoughtful approach. It is essential to recognize that these groups may face a range of specific challenges, both technical and emotional, when addressing digitalization. These challenges have been outlined in previous sections.

Given the characteristics of these learners, it is crucial to adopt pedagogical strategies that prioritise empathy, patience, and personalised learning. The training design must be inclusive, addressing specific needs and providing an environment where participants feel comfortable, supported, and able to learn at their own pace. Furthermore, it is vital to consider the socioeconomic and cultural context of the participants, adjusting the content to be relevant and accessible to their realities.

Below are the **recommended strategies** (see Table 4 “Human- Centred approach to learning”) and approaches for the effective implementation of the training programs. These recommendations are based on both the comparative research conducted within the Digital-IN project and the suggestions of experts in digital communication and inclusive training. The suggested practices have been selected for their ability to overcome the most common barriers encountered in digital training for the seniors and small business owners.

These guidelines aim to facilitate effective and accessible communication, as well as promote a supportive learning environment for these groups. In this way, trainers will be able to implement methodologies that foster not only technical learning, but also the digital confidence and autonomy of the participants.

Implementing a communication strategy tailored to trainers of vulnerable groups involves a blend of empathy, adaptability, and active participation. By focusing on understanding, trust-building, accessibility, and continuous support, trainers can create a conducive learning environment that empowers participants and encourages their development. Regular evaluation of practices will ensure that the strategy remains effective and responsive to the needs of the community.

HUMAN-CENTRED APPROACH TO LEARNING

Table 4. Human-centred approach to learning

Topic	Recommendations	how to
HUMAN APPROACH	Human to Human "code" (person to person, peer to peer, NOT trainer to learners, NO hierarchy)	Treat each person as if she/he was your dearest, as if she/he was yourself (the golden rule)
	Always stimulate curiosity, involve and satisfy every need for knowledge	Ask any question useful for you to understand the needs and listen carefully to the answers.
	No one must be left out or behind.	Make everyone feel comfortable, listened to and cared of
HOW TO RELATE	Share your knowledge, DON'T drop it from above	Start each training session from your own experience and try to know your listener's one.
	Talk WITH, NOT TO (including and collaborative speaking, NO MORE frontal lesson)	Organise your meeting and training sessions like circles, like a circle time. Never stay or sit behind a desk.
	Establish dialogue to encourage maieutic learning and learning by doing	Make the people you have to teach to realise that you are one of them, that all you, together, are a group, a community.
	Be inclusive, smiling and engaging	
	Call everyone with her/his name	Always remember that each person has her/his own uniqueness and her/his own specific identity. Calling them by name gives importance to their uniqueness.
TONE OF VOICE	Be empathic	Talk with your listeners so that they understand not only with their brain but even with their emotional part. Always try to emote when you teach.
	Put in your listener's shoes	Always pay close attention to who you are dealing with and behave accordingly.
	Try to be flexible, welcoming and open minded	Start and conduct all your training sessions with a smile and in a welcoming manner, especially towards the people you feel are struggling the most.

LEXICAL CHOICES (both for speaking and writing)	Choose and use simple words form spoken and common language	Always communicate in a very simple way with words that are easy to understand and not too cultured.
	Avoid technical, abstract and difficult terms	
	Transform complexity in simplicity	When you have to explain a very complex process or activity with many steps and many things to do, commit yourself to make people feel that everything can be done and that we are all able to do it. Behave as a facilitator of the process and/or of the activity that has to be learnt.
	Make sure that everyone feels up to the task.	
	Use always "bridge-words", a non-hostile communication	Bridge-words always have a positive meaning. they don't offend and don't make the others feel unable or out of place. Bridge-words get you closer to your audience and let it feel adequate in any situation, never out of place.

The fundamental principle we follow is the humanistic approach to education and, therefore, to the way of communicating when it comes to formal matters. This approach follows the guidelines of Tawil & Locatelli (2015) in the book *Rethinking Education: Towards a Global Common Good?* It advocates for an integrated education that equally values the economic, social, cultural, and civic dimensions of learning, according to the four pillars of education: learning to know, to do, to be, and to live together.

This humanistic approach is rooted on fundamental ethical principles, such as respect for life and human dignity, equal rights, social justice, and cultural diversity. It recognizes the value brought by the diversity of knowledge systems and lived realities, while affirming common universal values. It focuses on sustainable human and social development, seeking to enhance the dignity and well-being of individuals in relation to others and to nature.

Moreover, equity in educational policies is emphasised, promoting inclusion and responsibility in providing meaningful learning opportunities for all. The importance of non-formal educational spaces and the crucial role of educators is also highlighted, who must have adequate working conditions, including attractive salaries and career opportunities (Tawil & Locatelli, 2015).

Therefore, as a trainer, and following the ideas of The Interaction Design Foundation (2024), fostering curiosity should be your priority, just as involving participants in the learning process and satisfying their thirst for knowledge. Always be proactive in asking useful questions to clarify their needs and listen carefully to their answers. Remember, no one should be left out or feel neglected; the goal is to create an environment where everyone feels comfortable, valued, and heard. To achieve this, it is necessary to foster

authentic, non-hierarchical, peer-to-peer connections and make learning more collaborative than transactional, it is essential to adopt a people-to-people (H2H) approach to communication.

In today's world of education and training, it is essential to create learning environments that are inclusive, participatory, and humanistic. To achieve this, it is fundamental to adopt approaches that prioritise the relationship between educator and participants, fostering open and meaningful dialogue. Below are three key areas that can enhance the teaching dynamic:

How to Relate

Share your knowledge in a collaborative manner instead of conveying it in a hierarchical way. Begin with your own experiences and invite your audience to do the same. This interaction not only enriches the discussion but also cultivates a sense of community, moving away from the conventional teacher-student relationship.

Arrange discussions and the training environment in a circular layout, akin to a "circle time," to encourage interest and participation. Avoid positioning yourself behind a desk, as this creates a physical separation between you and your audience. Engaging in open dialogue promotes maieutic learning, enabling participants to feel included in the group and fostering positive and inclusive interactions. Acknowledge everyone by using their name, which affirms their unique identities and contributions.

Tone of Voice

The tone of your communication is just as vital as the topic you are addressing. Approach your audience with empathy, connecting not only with their intellect but also with their emotions. Build a personal connection with your participants to gain a deeper understanding of their viewpoints and needs.

Your training sessions should be characterised by flexibility, warmth, and an open-minded approach. Begin with a friendly smile and maintain a welcoming attitude, especially towards those who may struggle to engage.

Lexical Choices (Speaking and Writing)

Utilise clear and straightforward language, relying on common words that are easily understood, while steering clear of technical or complicated terminology. Simplify complex concepts into digestible ideas, demonstrating that learning, regardless of its complexity, is attainable. Offer real-world examples to enhance understanding, positioning yourself as a facilitator throughout the learning journey.

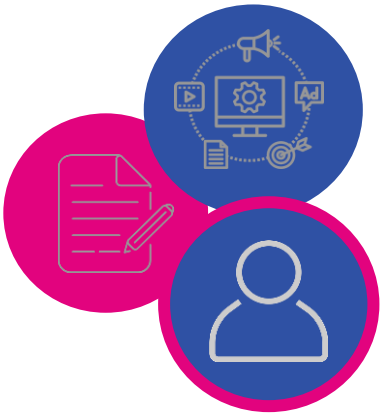
Ensure that everyone feels empowered and supported as they navigate their learning paths. Use "bridge-words" that encourage positivity and inclusiveness in your communication. These words foster a welcoming environment and help the audience feel capable and engaged, ensuring that they never feel out of place.

INCLUSIVE COMMUNICATION APPROACH

Inclusive communication is crucial for ensuring that everyone always feels welcome.

Along with simple speaking, **visual elements play a significant role in conveying effective messages to diverse audiences**.
To be effective and inclusive, and follow the ideas of Rosenfeld & Morville (2003), you should respect the "**three circles rule**":

Figure 5. Three circles rule



According to this rule, you should:

- Identify your user, with her/his unique way of being. The Definition of Profiles section in our manual helps tutors understand socio-economic, psychological, and cultural factors to improve communication with DVG students. Define the context in which you communicate, speak or write.
- Focus on contents and issues you want to transmit and share

Here we give some key visual elements to consider for inclusive communication:

- **Diverse Representation:** Your priority is including any possible perspective, avoiding stereotypes.
- **Images and Illustrations:** use those representing different racial, ethnic, and gender identities, abilities, ages, and body types.
- **Models and Characters:** choose illustrations or photos of people, reflecting the diversity of the community you are addressing.
- **Colours & Fonts:** ensure sufficient contrast between text and background colours for readability. Avoid colour combinations that may be problematic for colour-blind individuals. Leave always white space among lines for easy reading.

- **Font Choice:** use clear, sans-serif fonts easy to read. Avoid overly decorative fonts that may be difficult for some people.
- **Text Size:** provide text in appropriate size to accommodate those with vision impairments.
- **Universal Symbols:** use icons widely understood that can transcend language barriers.
- **Accessible Icons:** Design icons with clear, recognizable shapes and consider including labels to enhance understanding.
- **Language Options:** give information in multiple languages, necessary for a multi-ethnic audience. Ensure translations are accurate and culturally appropriate.
- **Visual Cues:** use universally recognized symbols or images able to convey meaning across different languages.
- **Organised Layout:** use clear headings, bullet points, and sections to break up text and to leave white space among lines, so you make content easier to read.
- **Highlighting Important Information**: use colour, bolding, or different font sizes to emphasise key points and make them stand out.
- **Cultural Context:** be mindful of cultural symbols, colours and practices that could have different meanings in different cultures. Check and embrace the audience's cultural backgrounds.
- **Avoiding Cultural Appropriation:** ensure that any cultural references or images used are respectful and appropriately attributed.
- **Closed Captions and Transcripts:** provide captions for videos and transcripts for audio content to ensure access for deaf or hard-of-hearing individuals.
- **Descriptive Audio:** consider adding descriptive audio for visual elements in videos to assist those with visual impairments.

NON-HOSTILE COMMUNICATION APPROACH

The concept of non-hostile communication, often denoted as nonviolent communication (NVC), represents a systematic approach focused on fostering understanding, empathy, and mutual respect in interpersonal interactions. This methodology is designed to facilitate more productive and harmonious communication, particularly within teams or organisations. According to Rosenberg, M. (2015), the training of individuals or teams in the principles of non-hostile communication encompasses several foundational strategies and key principles:

- **Observation Without Evaluation**

One of the primary tenets of non-hostile communication is the importance of focusing on objective observations rather than engaging in subjective judgments or evaluations. This principle emphasises the need to express what one perceives in a manner that is devoid of interpretation or bias.

Example: Rather than stating, "You are always late," which could be perceived as accusatory, a more effective approach would be to articulate, "I noticed that you arrived 15 minutes after the scheduled start time. Is everything alright?" This reframing encourages open dialogue and diminishes defensiveness.

- **Expressing Feelings**

Another crucial aspect of non-hostile communication involves the candid expression of one's feelings in relation to specific observations, while consciously avoiding the assignment of blame to others. This strategy seeks to create an environment in which individuals feel safe to communicate their emotional responses.

Example: Instead of expressing frustration with the statement, "You're frustrating me," one might convey, "I feel anxious when meetings start late." This shift not only clarifies the speaker's emotional state but also invites consideration of the impact of the situation.

- **Identifying Needs**

It is essential to connect one's feelings to underlying needs, thereby elucidating the reasons behind those emotions. By identifying and articulating personal needs, individuals can foster a greater understanding of their emotional responses.

Example: A more constructive expression would be, "I need clear communication regarding scheduling so that everyone can arrive on time." This statement highlights the speaker's requirement for clarity and establishes a basis for dialogue.

- **Making Requests**

The final principle of non-hostile communication emphasises the formulation of clear, actionable requests rather than demands. This technique encourages collaboration and facilitates an atmosphere of mutual respect and understanding.
Example: Rather than making a vague or implicit request, one might say, "I would appreciate it if we could establish a regular check-in meeting to clarify project deadlines and any changes that might arise. This way, we can all stay aligned, and I can better manage my tasks." Additionally, a specific request could be articulated as, "Could we agree to notify each other if we are running late?" This encourages accountability and reinforces the collaborative spirit.

Example: "Could we agree to notify each other if we're running late?"

GRAPHIC TOOLS TO FACILITATE COMMUNICATION

Graphic tools can help you enrich your content with infographics, icons, illustrations, timelines, and images, playing a vital role in enhancing communication by making complex information more visually accessible and easier to understand.

Our experts in the field provide several recommendations with examples of different tools to facilitate communication (for more information, see Annex 4, which also includes recommended websites):

Infographic

Infographics are visual representations that combine graphic elements, such as images, icons, charts, and text, to present information clearly and attractively. Their purpose is to simplify the communication of complex data and concepts, facilitating understanding and retention. Used in various disciplines, from education and marketing to research and data presentation, infographics enable effective message delivery by highlighting key points and organising information logically. Their visually appealing design makes them valuable tools for capturing the audience's attention and facilitating learning (TK Business, 2022).

Recommended tools for Creating Infographics

- **Canva:** a user-friendly tool that provides templates for creating infographics, social media graphics, and more.
- **Piktochart:** specialised in infographics and presentations with a variety of templates and assets.
- **Visme:** useful to create infographics, presentations, and reports with interactive features.

Presentation Software

Presentation software refers to applications that enable users to create visual aids for presentations, typically consisting of slides that can include text, images, videos, charts, and other multimedia elements. These tools help individuals and organisations communicate ideas effectively in various settings, enhancing clarity and engagement. They also provide flexibility in customization and improve collaboration, making it easier to share information with diverse audiences (Thielsch & Perabo, 2012).

Recommended presentation software

- **Microsoft PowerPoint:** a classic tool for creating engaging presentations with graphics, charts, and multimedia.
- **Google Slides:** a cloud-based solution that allows for real-time collaboration on presentations.
- **Prezi:** a unique zoomable interface for dynamic presentations that engage viewers.

Mind Mapping Tools

Mind mapping tools are software applications designed to facilitate the creation of mind maps—visual representations that organise information hierarchically. These maps use a central idea surrounded by related concepts, helping users visualise relationships and enhance understanding. The creative flexibility offered by mind mapping tools also fosters brainstorming and collaborative exploration, making it easier to remember details and prioritise tasks (Buzan, 2009).

Recommended presentation software

- **MindMeister:** a cloud-based mind mapping tool that helps in brainstorming ideas visually.
- **XMind:** equipped with various templates for creating structured mind maps and brainstorming sessions.
- **Coggle:** an easy-to-use tool for creating mind maps collaboratively in real-time.

Diagramming Software

Diagramming software refers to applications that allow users to create a wide range of visual representations, including flowcharts, organisational charts, network diagrams, and other types of diagrams. These tools help users communicate complex information clearly and efficiently, enhancing clarity and understanding. They improve collaboration and time efficiency by providing templates and pre-built shapes, making it easier to produce professional-quality diagrams (Srivastava, 2023).

- **Lucidchart:** a platform able to create flowcharts, wireframes, and other diagrams with collaborative features.
- **Microsoft Visio**: a professional diagramming tool that helps visualise complex information.
- **Draw.io:** a free, web-based diagramming tool that integrates with Google Drive and other platforms.

Data Visualization Tools

Data visualisation tools are applications designed to help users represent data graphically. These tools transform complex datasets into visual formats, such as charts, graphs, maps, and dashboards, making it easier to identify patterns, trends, and insights. By enhancing understanding and improving communication, these tools allow for quick insights and make data accessible to non-experts (Srivastava, 2023).

- **Tableau:** suited for creation of interactive and shareable dashboards.
- **Google Data Studio:** a free tool for data visualisation that integrates with various data sources.
- **Chart.js:** a JavaScript library for creating animated, interactive charts for web applications.

Video Editing and Animation Tools

Video editing and animation tools are software applications that allow users to create, edit, and enhance videos and animations. These tools provide a variety of features, including cutting and merging video clips, adding effects and transitions, incorporating audio, and animating graphics. By enabling enhanced storytelling and creative flexibility, these tools help users produce professional-quality content suitable for various platforms.

- **Adobe Spark:** a tool for creating short videos and social graphics that combine video, text, and images.
- **Animaker:** suited for creation of animated videos and presentations easily.
- **Powtoon:** platform for creating animated videos and engaging and informative presentations.

Collaboration Platforms

Collaboration platforms are software applications designed to facilitate teamwork and communication among individuals or groups, regardless of their physical location. These platforms provide a range of tools and features, including file sharing, real-time messaging, video conferencing, task management, and document collaboration. By enhancing collaboration and improving communication, these tools streamline workflows, increase productivity, and foster a sense of community among team members. They enable real-time communication, improve project organisation, and provide flexibility and accessibility, which are essential for both remote and hybrid teams (Aston, 2023).

- **Miro:** an online collaborative whiteboard platform for brainstorming, planning, and visualising projects.
- **Mural:** a collaborative virtual workspace, similar to Miro, tailored for design thinking and agile practices.
- **Notion:** primarily a note-taking app, equipped with visual elements and organisation, suited for an easier sharing of tasks and ideas.

Social Media Graphic Tools

Social media graphic tools are software applications designed to facilitate communication by helping users create visually appealing graphics for social media platforms. These tools provide a variety of templates, design elements, and customization options, enabling users to produce professional-quality images, infographics, and videos tailored for various social media channels. By enhancing visual communication and brand presence, these tools significantly improve audience engagement and streamline the content creation process (Timmermann, 2024).

- **Adobe Creative Cloud Express:** a collaborative workspace able to create eye-catching graphics for social media platforms.
- **Stencil:** a tool aimed at marketers for creating quick and easy social media graphics.

Feedback and Survey Tools

Feedback and survey tools are software applications specifically designed to facilitate communication by enabling users to collect opinions, preferences, and insights from their audience, clients, or team members. These tools provide a variety of customizable templates and question types, allowing users to create surveys and feedback forms that gather valuable data efficiently. By streamlining the feedback process,

these tools enhance communication, helping organisations understand their stakeholders more effectively, improve products or services, and foster engagement. They enable real-time data collection and analysis, leading to informed decision-making and increased responsiveness to audience needs (Fowler, 2002).

- **Typeform:** a user-friendly tool for creating surveys that are visually appealing and easy to navigate.
- **SurveyMonkey:** a robust platform for creating surveys and analysing results visually.

Tips for Effective Use:

- Keep it Simple: avoid information overload in graphics. Your goal is clarity and conciseness.
- Use Color Wisely: colours can convey emotions and enhance understanding; choose a consistent and coherent colour scheme.
- Focus on Layout: ensure that visual elements are well-organised for easy reading and understanding.
- Engage Your Audience: use interactive elements, when possible, to involve the audience actively.
- Selecting the right tools depends on your specific communication needs, audience, and the type of information you want to convey.

DIGITAL WRITING TIPS

Limits of digital reading user's side

Authoritative content usability researchers show through their studies and focus groups that digital reading, on computers and smartphones, has enormous limitations.

Computer monitor

Figure 6. Limits of digital reading in computer monitor

- Users don't read, they just scan until **28% of words**
- They scroll the content more slowly than on a paper page **(+ 25% slowly)**
- Their **attentional focus** is limited to the red spots, called **«viewable area»,** as we can see in Figure 6.

Smartphone display

Figure 7. Limits of digital reading in smartphones

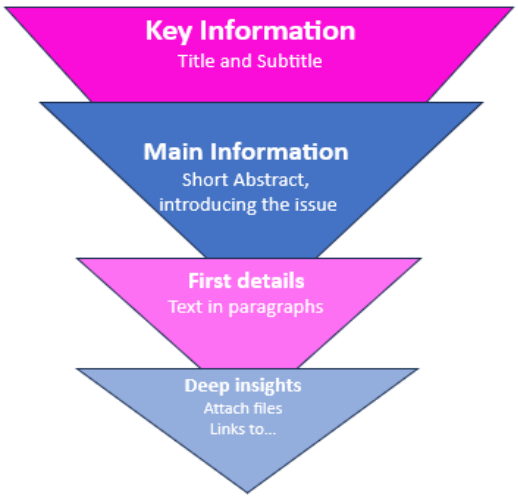
Users read in a very short time, with a **reduced usability**

- They are distracted by ambient noise, lights and device movements
- They get a small portion of text at a time with continuous scrolling that reduces the ability to quickly locate the point of interest on the page
- They struggle to relate images and text.

INVERTED PYRAMID

Figure 8. Inverted pyramid

The **inverted pyramid** is a widely used writing model in online communication, well suited to the new realities of content consumption on digital devices. This approach involves reversing the order of the information we want to share on our digital channels, such as websites and social media. In a digital context, attention limitations and the way people interact with content necessitate rethinking how we present information. According to Brech (2020), the most effective way to capture our audience's attention is to start with the core of the information and gradually provide more useful details. This method not only effectively captures the reader's attention but also allows them to decide whether they want to delve deeper into the content. Following the ideas of Halvorson (2009), the inverted pyramid has several advantages:



- **Increases Retention:** It facilitates better retention of key information by readers.
- **Improves User Experience:** It helps users navigate and find the information they seek effortlessly.
- **Efficiency in Communication:** It allows for clear and effective message transmission.

THE KISS RULE

Figure 9. The kiss rule

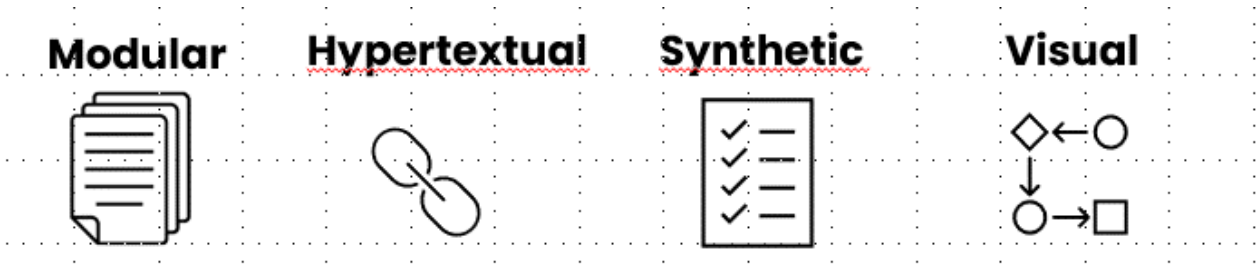
In the contemporary digital landscape, the majority of users tend to scan rather than engage in deep reading of content, making it imperative to produce brief, clear, and easily comprehensible texts. This approach not only facilitates immediate understanding but also retains the attention of an audience seeking information quickly and efficiently. To achieve effective communication, it is advisable to employ simple and direct language while avoiding unnecessary complexity. Furthermore, incorporating intuitive and easily understood visual elements can enhance the text and reinforce the message, rendering the content more engaging and accessible. In conclusion, to effectively connect with users and ensure information retention, it is essential to create content that is "simple, stupid, and short," a principle referred to as the KISS rule, thereby optimising the reading experience in an era characterised by information overload (The Interaction Design Foundation, 2016).

DIGITAL WRITING TECHNIQUES

Following the work of Halvorson (2009), digital writing techniques can be defined as the strategies and methods used to create effective, engaging, and optimised content for online platforms.

Every content or information you give online has to be:

Figure 10. Key qualities for effective online content



- **Modular:** design your contents as a collection of single and practical fact sheets. One fact sheet, one topic.
- **Hypertextual:** connect similar topics, help users to find what they need easily and quickly, facilitate the surfing experience.
- **Synthetic:** online less is always more, mostly in digital writing.
- **Visual:** support anything you write with visual elements.

The following recommendations align with Halvorson's (2009) suggestions for clear and effective writing in digital environments.

- **Build content with short sentences:** Limit the use of subordinate clauses, especially in responsive designs where the priority is viewing on mobile devices.
- **Always choose the most well-known term:** When selecting between synonyms, opt for the word that is most recognized by your audience.
- **Use strong verbs and simple prepositions:** Avoid circumlocution (using many unnecessary words to express an idea).
- **Always employ the active voice:** This helps make the text more direct and dynamic.
- Maintain coherence: Ensure that titles and abstracts are closely related to the main content.
- **Organise the content into paragraphs:** Dedicate each paragraph to a single topic and consider using bullet lists or accordions (hidden paragraphs that users can expand or collapse by clicking on a +/- icon).
- **Remember to leave white space:** Maintain adequate space between lines of text to improve readability.

NETIQUETTE

Since the web was created, it has developed its own set of social norms, known as netiquette. According to Heitmayer & Schimmelpfennig (2023), netiquette refers to the digital social norms that guide online behaviour, much like social norms do in the real world. These norms can be descriptive—reflecting what most people do, helping us understand how to act by observing others—or injunctive, which outline behaviours that are expected of us.

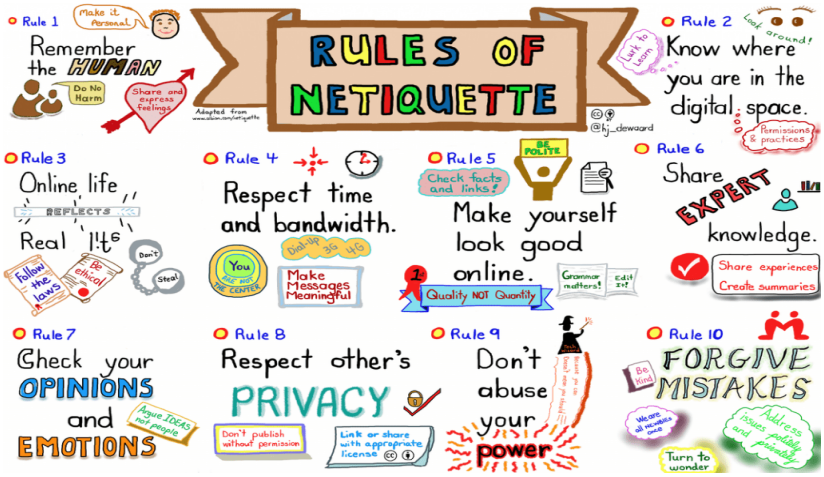
In essence, netiquette is a set of guidelines designed to promote respectful and effective communication on digital platforms. As Heitmayer & Schimmelpfennig (2023) note, these rules continuously evolve through user interaction and are essential for fostering healthy and constructive online interactions.

Following a review of the literature that aims to define parameters and rules to follow online, such as Jumpseller (2024), the following is a series of recommendations for expressing yourself appropriately according to netiquette guidelines:

Here are some key principles of Netiquette:

- **Be Respectful:** treat others as you like to be treated. Avoid rude language, insults, or aggressive behaviour, even in disagreements.
- **Use Easy Language:** communicate clearly and concisely. Avoid jargon unless it's widely understood by your audience and use proper spelling and grammar to avoid misunderstandings.
- **Think Before Posting:** remember that once something is shared online, it can be difficult to retract. Consider the potential impact of your words on others before posting.
- **Respect Privacy:** don't share personal information about others without their consent. Be mindful of your own privacy as well.
- **Avoid All Caps:** writing in all capital letters means you're shouting. Use it sparingly and only for emphasis.
- **Don't Spam:** avoid sending unsolicited messages, excessive self-promotion, or repetitious postings. It's considered annoying and can lead to you being blocked or banned.
- **Acknowledge Contributions:** if someone provides useful information or insights, acknowledge it. Giving credit where it's due fosters a positive online community.
- **Take care of your Tone of "Voice":** without vocal tone and body language, text communication can sometimes be misinterpreted. Use emojis or punctuation to clarify your tone when appropriate.
- **Keep Discussions Constructive:** contribute positively to discussions. If a conversation is becoming heated, consider stepping back or redirecting it to a more constructive path.
- **Follow Forum or Platform Rules:** Different online communities may have specific rules. Familiarise yourself with and adhere to those guidelines.
- **Practise Active Listening:** In discussions, take the time to understand others' viewpoints before responding. This promotes a more respectful exchange of ideas, as Gallo (2024) exposes.

Figure 11. Rules of Netiquette



Do and Don’t

On social media, netiquette transforms into a set of guidelines that can be summarised in a list of "Dos and Don'ts." This collection of rules, which could be considered a "decalogue," aims to inform followers about the specific guidelines governing a particular profile.

Whether it’s a corporate, public, or private profile, the nature of the profile is not what matters most. The essential point is that all users must adhere to these conduct guidelines. Failing to comply with these rules may result in exclusion from social pages, highlighting the importance of maintaining a respectful and positive environment within the online community.

Figure 12. Do and Don´t

CONCLUSIONS

The **DIGITAL-IN Project manual** and guidelines for educating and training actors in developing effective DLCS-DLTPS, tailored to the profiles and needs of DVG learners, addresses the digital inclusion of two groups considered vulnerable in terms of digital literacy: older adults and small business owners. In a context where digitalization is essential for participation in society, this manual provides guidelines and strategies aimed at narrowing the digital divide affecting these groups. It proposes an inclusive educational approach, carefully tailored to their specific needs and focused on empowering educators and stakeholders involved in digital education. The aim is for both groups to fully benefit from the digital environment, enhancing their quality of life and capacity to engage in an increasingly interconnected society.

The **DIGITAL-IN project**, implemented within the European Union's Erasmus+ program, primarily seeks to identify and address gaps in digital skills that affect these groups. The project's methodology was comprehensive, comprising multiple stages: documentary research, interviews with key stakeholders in digital education, and surveys directed at end-users to understand their needs. Additionally, the project incorporated digital skills trainers into thematic working groups, fostering a deep understanding of the digital landscape and facilitating the development of effective educational strategies. This collaborative process was essential in building a pedagogical approach that accurately and effectively addresses the unique characteristics of vulnerable groups across Europe, specifically in the project partner countries of Greece, Cyprus, Italy, Lithuania and Spain.

The digital inclusion of these groups addresses highly specific needs. For older adults, digitalization is not only a tool for accessing information and services but also a means of reducing social isolation and enhancing autonomy in daily activities. However, the digitalization process presents numerous challenges, such as a loss of confidence in their ability to adapt to new technologies or the physical and cognitive barriers associated with aging. For small business owners, the adoption of digital tools is critical to improving their competitiveness in a global market. Digitalization enables these entrepreneurs to optimize operations, expand their customer base, and access new business opportunities. However, limited financial resources and time constraints for skill acquisition pose significant obstacles that hinder their digital progress.

The manual is structured into four main sections. The first, **Defining Profiles**, provides an in-depth description of the characteristics and needs of older adults and small business owners. For older adults, this section addresses topics such as the importance of maintaining social connections, autonomy in managing their lives, and access to digital tools that enable active community engagement. Data collected reveal that, despite strong motivation to learn, the complexity of new technologies can discourage them, resulting in limited device use. Regarding small business owners, this profile identifies characteristics typical of very small enterprises and emphasizes the need to overcome the scepticism that many entrepreneurs feel towards digitalization. These business owners often view the acquisition of digital skills as an additional burden rather than an investment in their business growth. The profiles section delves into socioeconomic, gender, demographic, and geographic factors that influence digital learning for both groups, providing a comprehensive perspective on the elements that can facilitate or hinder their digital integration.

The second section, **Pedagogical Strategies,** explores methodologies adapted to the learning needs of these groups, considering demographic factors that may limit their digital progress. For older adults, strategies such as adaptive learning, which adjusts content and teaching pace to individual skills and progress, are proposed; kinaesthetic learning, which enhances information retention through physical and practical activities; and repetition-based learning, a technique effective in reinforcing key concepts and reducing anxiety associated with acquiring new skills. These strategies seek to establish a safe and empathetic learning environment, where older adults feel supported throughout their learning process. For small business owners, a more practical, benefit-oriented approach to digitalization is recommended, including methodologies such as collaborative learning and action-based learning, which help visualize the direct applications of digital skills in their business context. This section also emphasizes the importance of adapting strategies to the time and resource constraints faced by many business owners, who often lack continuous hours for training.

The third section, **Recommended Content**, presents a detailed list of suggested digital skills for each group. For older adults, key content includes data literacy, encompassing basic skills for managing information and conducting online searches; online safety, essential for secure internet browsing; and digital content creation, enabling them to communicate and express themselves on digital platforms. This content aligns with the DigComp 2.2 framework, which promotes the development of cross-disciplinary skills suited to the digital age. For small business owners, recommended content focuses on digital presence and digital marketing, essential to improve visibility and attract new customers. The integration of data analysis tools, customer relationship management (CRM) systems, and cybersecurity techniques is also suggested as key areas that can have a direct impact on business sustainability.

The final section, **Communication Strategy**, underscores the importance of inclusive and effective communication in conveying content to these vulnerable groups. Recommendations include adapting language and instructional materials to ensure accessibility and relevance for older adults and small business owners. Suggested resources include graphic tools, infographics, and visual strategies to facilitate comprehension, as well as an empathetic, user-centred approach to communication. These recommendations seek to eliminate communication barriers and ensure that users perceive digitalization as an accessible and beneficial process for their daily lives or business activities.

The DIGITAL-IN manual serves as a valuable tool for advancing a more inclusive and connected Europe, where access to and participation in the digital environment are achievable for all, regardless of age or socioeconomic status. Digital literacy for older adults and small business owners not only broadens their capabilities to integrate and thrive in the digital realm but also strengthens their social and economic ties. For older adults, it means a more autonomous, connected, and active life, while for entrepreneurs, it unlocks new opportunities for growth and competitiveness in increasingly digital markets.

The impact of this project extends beyond training; it embodies the construction of a society that respects and supports its most vulnerable members in their digital transition. With this manual, trainers gain a practical and well-founded resource that not only facilitates effective instruction but also fosters empathy with the specific needs and challenges of each group. Thus, DIGITAL-IN emerges as a crucial link in the support chain that promotes an inclusive and accessible digital transformation, contributing to a European landscape where everyone can navigate the digital age with confidence and security.

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