CURRICULUM

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SUMMARY

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Lead
partner:

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More information: project website https://www.dementiacaregivers.eu

About the project Digital tools for carers of people with dementia According to statistics of Eurocarers (European network of organisations representing family carers) 80% of the care and care provided to dependent persons within European countries is
provided by family members and friends. This means , in numbers, there are about 100 million family carers in
Europe.

These data clearly show that, on average, European welfare depends heavily on the welfare contribution of families. However, families often do not have sufficient resources to care for their loved ones alone. Focusing on the disease of dementia, the Dutch government has published the 'Dementia Delta-Plan', a new national dementia strategy 2021-2030, with the specific goal of ensuring that people with dementia and their loved ones receive adequate support. To achieve the success of the strategy this major objective includes:

- Innovation - with a focus on the use of technological and non-technological development;
- International - focused on collaborations in relation to dementia research;
- Communication - focused on sharing and experience.

"Digital Tools for Dementia Caregivers" responds to both the National Dementia Strategy and the European Call for Support for Dementia Caregivers and proposes a highly innovative educational model that leads to the development of a vocational curriculum based on the use of Digital Skills applied to the caregiving process. It combines innovation with the need to support family members in providing care for patients with dementia. At the same time, involve international partners the aim of sharing knowledge and good practice so that national results become of European impact. Furthermore, as digital tools in health education are evolving, we believe that they are bound to have a positive and lasting impact on organisations and target groups, even after the project duration, as they can always be updated and adapted.

THE PARTNERSHIP

Stichting Amsterdam European Mobility Project co-ordinator	
STEPP - Development Services Strategies	
Alzheimer Athens Association	
Foundation Compassion	
ECSA Kosova	
Dementia Care	

Stichting Amsterdam European Mobility: Stichting Amsterdam European Mobility (A'DamMob), is a professional organisation founded in 2012 and based in Amsterdam specialising in training, research in the field of Applied Digital Competence in various subject areas. Its aim is to offer learning opportunities to clients of all ages to help them acquire skills and create professional profiles that reflect the needs of today's world of work. It represents the meeting point of the most qualified academic and professional resources in different areas of expertise. A'DamMob courses enable participants to develop knowledge and train excellent skills, through an approach characterised by dynamism, independence, creativity and focus people. The values underpinning the activities, such as multidisciplinarity, passion, dynamism, energy, interaction, the ability to listen and to do things together, make it possible to create interdisciplinary paths of higher education and contribute to the future of the area from an international perspective

Website: www.adammob.com

STEPP: STEPP is an innovative entrepreneurial project developer founded in Florence in 2015. Its work is focused on sectors dealing with social innovation, such as education and training, socio-economic development, technological innovation and research.
By social innovation we mean a type of innovation made up of ideas, creativity and methodologies to transform theoretical principles and research into the prosperity of a community increasingly focused on sustainability and the development of 'smart' territories. We seek success in brilliant ideas, investing time, resources and experience with an ultimate goal: connecting research and innovation to create a virtuous ecosystem that allows innovative ideas to become successful projects.

Website: www.stepp-up.com

Foundation Compassion Bulgaria: Foundation Compassion Alzheimer Bulgaria is a non-governmental organisation, founded in 2004. Our mission is to improve the quality of life of people living with Alzheimer's disease and dementia in Bulgaria by changing current attitudes and practices towards them and providing access to care and social support. The organisation was founded in Varna and has a team and office in Sofia as well (since 2007). The organisation is a member of Alzheimer's Disease International, the EFID network and the national Patient organisation. Current activities: provision of innovative social services for families with Alzheimer's/dementia patients (legal counselling, psychological counselling, including e-mail and telephone consultations), music therapy, art therapy and other non-pharmacological methods, Alzheimer cafés, information campaigns for prevention, lobbying in Bulgaria to improve services and accessibility of care.

Website: http://alzheimerbulgaria.org

Alzheimer Athens: Alzheimer Athens Association is a non-profit organisation founded in 2002 by people with dementia, their relatives, and healthcare professionals interested in Alzheimer's disease. It aims to raise awareness of all forms of dementia and improve the quality of life of people with dementia and their families. The Association currently has 5500 official members, a staff of 70 health professionals and 55 active volunteers and is managed by an elected board of 7 members. The Alzheimer Athens Association runs six day care centres in Athens and one in Arta, offering daily care

for people with Alzheimer's disease or other forms of dementia. The

staff of the centres consists of numerous doctors, psychologists, speech therapists, social workers, nurses and physiotherapists, as well as administrative staff. The activities of the Alzheimer Athens Day Care Centres include:

- Memory Clinic: The Memory Clinic Association offers neurological and neuropsychological assessments to people over the age of 60 and provides timely and accurate diagnosis of Alzheimer's disease and other forms of dementia.
- Non-pharmacological interventions for people with dementia include cognitive training sessions, physical training programmes and other specific therapies (art therapy, speech therapy, occupational therapy, reminiscence therapy), individually or in groups.

Website: https://alzheimerathens.gr/

Dementia Care**:** Dementia Care is an Association of Social Promotion with its registered office in the Municipality of Nicotera, Province of Vibo Valentia, which operates throughout the Region of Calabria and also nationally and internationally. The Association is registered with RUNTS.
The association aims to work on behalf of people with different abilities by promoting and implementing any action that leads to the improvement of the quality of life, in particular, of people suffering from neurodegenerative syndromes and other forms of cognitive decline and deterioration of various types and degrees (e.g. Alzheimer's disease and other forms of dementia), extending these actions also to their family members and caregivers who care for these patients.

ECSA Kosova**:** ECSA Kosova was established in 2016 and will support and enhance EU studies in the Kosovo region, but will also contribute to EU challenges by collaborating with EU institutes, centres and universities. ECSA Kosova aims to address the challenges EU accession such as research, digitisation, training and employment, considering its importance for the Western Balkans, including Kosovo.

- Promotion of research activities related European integration;
- Promotion of international and EU programmes;
- Promoting the digitisation process;
- Dissemination of information on current university research activities related European integration through publications and interactive networks,
- Support students, young people and academics in research, training and other EU activities.

INFORMATION ON DIGITAL COMPETENCES

Digital skills and competences must be accessible to the entire population, in all age groups and in all contexts. And every school, every education and training institution should give due consideration to both the risks and opportunities that technology brings.
The pandemic of COVID-19 has highlighted the need to improve the digital preparedness of education and training systems in terms of resilience, accessibility, high quality and inclusiveness. Furthermore, as part of the Digital Decade commitment, the EU target is for 80 per cent of the population aged 16-74 to possess at least basic digital skills by 2030.
In this context, and in the context of European Year of Competences (2023), it is more important

than ever to focus on the needs of education and training when it comes to digital transformation,

intervening at all levels (pre-primary, primary, secondary and vocational education and training, higher education, adult learning), in a lifelong learning perspective, and for all population groups (e.g. young people, adults and professionals).

Digital skills and competences

The adopted Council Recommendation on digital skills and competences recommends that Member States agree on national and, where appropriate, regional strategic strategies or approaches education and digital skills and competences, inviting them to

- establish or review national targets for provision of these skills and competences
- adopt measures targeting 'priority or hard-to-reach groups'.
- strengthening digital skills and competences in primary and secondary education
- promoting the teaching of digital competences across subjects
- improve digital skills and competences for all students higher education, providing learning opportunities at all levels and disciplines
- offer adults the opportunity to acquire digital skills and address the shortage of ICT professionals
- Successful digital education and training

How many and what are digital skills?

This is told to us by the European DigComp 2.1 model, which created the framework for citizens' digital competences by identifying the five key digital competences with eight levels of mastery each.

Competence Area 1: Information and data

Browsing, searching and filtering data, information and digital content is a fundamental skill to understand today's world, but of course it is not enough because not everything we find online is always true.

It is therefore necessary to have the tools to evaluate the information, for instance by comparing it with others found online and ensuring the reliability of the sources.

Finally, one must also know how to manage information and having a proper archiving methodology is crucial and must be developed (if one has not already done so) to complete the information management picture.

Competence Area 2: Communication and Collaboration

Today, we spend, part of our time on social media that allow us to constantly communicate and stay in touch with our friends, our relatives and also with our target brands.

The web not a market, it is a conversation!

The way we interact on social media, the way we share information using digital technologies are part of this skill set.

Competence Area 3: Digital Content Creation

We have seen how important communication is and certainly one of the means we have to communicate is to be able to create content for the various online platforms.

This is the ability that allows us to create content that is relevant to a specific group of people (whom we can call an audience), content that contains engaging and useful information... and is able to grab their attention.

Area of responsibility 4: Security

The widespread diffusion of data within the network has changed the rules on security and knowing how to defend one's data has become a fundamental skill.

We share everything online, from our credit card details to our most sensitive data, so how you manage the security of your information or that of your company, but also the safety of the environment and your health are part of this area of expertise.

Those who are comfortable with the Internet are able to find a way to defend themselves against online scams and recognise, for instance, whether to take precautions when faced with a request for sensitive data.

Competence Area 5: Problem Solving

Problem solving tops the WEF ranking of skills needed in today's world of work.

In the digital world it is applied in the identification of needs and the related technological response, answering the questions: what technology do we need to solve our problem?

In practice, therefore, we need to be able to solve the problems we encounter when digital technology. For example, by choosing the right tool, device, software or application that allows us to solve any unexpected situation.

INFORMATION ON THE CURRICULAR PROGRAMME

In today's rapidly changing world, the importance of continuous learning and competence development cannot be overestimated. Whether in education, corporate training or personal growth, designing an effective training curriculum lays the foundation for successful learning outcomes.

A well-designed curriculum not only enhances the learning experience, but also ensures that students acquire the necessary knowledge and skills in a structured and efficient manner.

The first and most crucial step in the design of any training curriculum is to define clear and measurable objectives. These objectives serve as guiding principles throughout the curriculum development process. Consider the overall objectives of the training programme and break them down into specific learning outcomes. Each objective must be concise, achievable and aligned with the needs and expectations of the target audience.

Before embarking on content creation, it is essential to conduct thorough needs assessment. This involves identifying the knowledge gaps, skills gaps and learning preferences of the intended target audience. Surveys, interviews and focus groups can provide valuable information on their knowledge and what they hope to achieve through training.

By understanding these needs, the curriculum can be customised to address specific challenges and maximise engagement.

Once the objectives and requirements have been clarified, the content of the curriculum is organised hierarchically. It starts with a broad overview of the subject and gradually deepens into more complex topics. This logical progression ensures that students build a solid foundation before tackling advanced concepts. A combination of fundamental concepts, practical examples and real-life scenarios is used to create a comprehensive curriculum that appeals to different learning styles.

The hierarchical organisation of content facilitates the development of a curriculum map or programme outlining the sequence of topics and modules. Each module should logically build on the previous one, allowing students to connect concepts and build a comprehensive understanding. This structure also helps instructors manage time effectively and allocate resources appropriately.

The selection of the right teaching methods is crucial to maintain student engagement and promote effective understanding. Various methods such as lectures, discussions, practical activities, group projects, case studies and multimedia presentations can be incorporated to suit different learning preferences. A mix of theoretical and practical approaches ensures that students understand concepts intellectually and apply them in real-world contexts.

The choice of teaching methods should be in line with curriculum objectives and student preferences. The use of a variety of methods addresses different learning styles and ensures that students are constantly engaged. Active learning strategies, such as problem-solving activities and group discussions, can improve information memorisation and critical thinking skills.

Assessment is an integral part of measuring student progress and determining whether the training programme is achieving its goals. A variety of assessment strategies are designed, including quizzes, assignments, projects and practical demonstrations. You align each assessment with specific learning outcomes to accurately measure student mastery of content. The constructive feedback provided through assessments helps students identify areas for improvement and motivates them to excel.

Assessment strategies should focus on the evaluation of both knowledge and skills. Formative assessments, conducted throughout the curriculum, provide immediate feedback to students and help trainers make timely adjustments. Summative assessments at the end of each module or course assess overall understanding and provide a comprehensive view of students' abilities.

Technology integration can enhance the training experience by providing interactive elements, simulations and access to additional resources. Howevertechnology integration should be purposeful and not just for the sake of novelty. It must be ensured that the chosen technology is in line the curriculum objectives and supports the intended learning outcomes. Intuitive interfaces and clear instructions are essential to prevent technological barriers from hindering the learning process.

Technology integration should consider students' access to devices and Internet connectivity. It can improve engagement through gamification, virtual labs and interactive multimedia content. The use Learning Managemant Systems (LMS) can simplify content delivery, assessments and progress monitoring, making the learning experience more efficient for both students and instructors.

The best training programmes are those that can adapt to the evolving needs of students and the changing landscape of the subject matter. Incorporate flexibility in curriculum design to adapt to unforeseen developments or student feedback. Regularly review and update the curriculum to reflect new insights, industry trends and emerging best practices. A curriculum that remains static can quickly become outdated and lose its effectiveness.

Designing for adaptability requires modular content and a continuous improvement mindset. By monitoring trends and soliciting student feedback, instructors can make timely changes to the curriculum. Flexibility also allows for customisation to meet the needs of different groups or individual students, fostering a more personalised learning experience.

Before launching the training programme on a large scale, it is preferable to conduct a pilot programme with a smaller group of students. This pilot phase allows you to identify any problems, gather feedback and refine the curriculum based on real tests. Necessary changes are made to the content, teaching methods and assessments to ensure a seamless learning experience for future participants.

Testing the curriculum helps to identify areas for improvement that may not have been evident during development phase. Feedback from pilot participants may reveal challenges in understanding, usability of materials and effectiveness of assessments. This phase also provides an opportunity to optimise the distribution of content and ensure that the curriculum is in line with student expectations.

Once the curriculum is finalised and refined, it is time to implement it with the target audience. You monitor students' progress, collect data on their performance and solicit feedback to assess the effectiveness of the curriculum. Assessment results are regularly reviewed and data-based decisions are made to further improve the curriculum and address any ongoing challenges.

Implementation involves delivery of content, facilitation activities and consistent communication with students. Monitoring student progress through data analysis and tracking tools allows trainers to identify areas where students may be struggling or excelling. This data can inform mid-course corrections and guide trainers in adapting their support to individual or group needs.

Designing an effective training programme is not a one-off effort, but a process of continuous improvement. Feedback is continually gathered, the impact of the curriculum is evaluated and it is refined according to student needs and emerging trends. Commitment to improvement

continuous ensures that the curriculum remains relevant, engaging and aligned with the changing learning landscape.

Encouraging a culture of continuous improvement involves regular evaluations and updates. Trainers should actively seek feedback from students, colleagues and industry experts to identify areas for improvement. Furthermore, staying informed of the latest developments in instructional design, technology and pedagogical approaches enables the integration of innovative practices into the curriculum.

In conclusion, designing an effective educational curriculum is   multi-dimensional process that requires careful planning, a deep understanding of student needs and a commitment to continuous improvement.

CONTENTS AND TOPICS

The curriculum model will be a 5-day workload spread over a series of thematic units and other types of learning formats. In terms of thematic units, "Digital Tools for Dementia Caregivers" will include:

- an introductory module on Digital Competences;

- five core thematic modules including one on the use of innovative methodologies such as the extended reality software 'In Your Shoes'.

MODULE 1 - INFORMATION AND DATA LITERACY

MODULE 2 - COMMUNICATION AND COLLABORATION

MODULE 3 - DIGITAL CONTENT CREATION MODULE 4 -

SECURITY

MODULE 5 - PROBLEM SOLVING USING DIGITAL TOOLS

TARGET

According to the World Health Organisation and Alzheimer's Disease International report, dementia is a global public health priority: in 2010, 35.6 million people suffered from dementia with an estimated twofold increase in 2030, a threefold increase in 2050, with 7.7 million new cases per year (1 every 4 seconds) and an average survival after diagnosis of 4-8 years. For example,

In Italy, the total number of dementia patients is estimated to be more than one million (of which about 600,000 have Alzheimer's dementia). In Greece, the number of people with dementia is estimated to be 201,766. In the Netherlands, there are approximately 245,560 people with dementia.

The rapid ageing of European society makes the scenario dramatic from a social and disease cost perspective, so much so that the European Parliament has called for dementia to become a health priority for Member States, called for specific national programmes to be developed and for research funds to be made accessible.

According to statistics from Eurocarers (a European network of organisations representing family carers) 80 per cent of the care and assistance provided to dependent persons within European countries is provided by family members and friends. This means that, in numbers, there are about 100 million family carers in Europe.

These data clearly show that, on average, European welfare depends heavily on the welfare contribution of families. However, families often do not have sufficient resources to take care of their loved ones alone. Therefore, while waiting for scientific research to make new intervention possibilities available, training and further education are one of the main resources. Dementia care such a delicate process that it requires cautious behaviour of family carers at every stage, is why this project aims to combine innovation with the need to support family members in providing care for patients with dementia. There is an increasing need to complement existing competences with new approaches and digital skills that can adequately address these new challenges. The project aims to develop a consortium for the development of a new and updated training curriculum to meet the needs service beneficiaries and to adequately exploit the new opportunities offered by technology.

The size and complexity of dementia problems determine basic needs such as:
- Developing new innovative skills for the family carers involved;
- A strong commitment to updating active careers;
- A serene caregiving experience from the point of view of both the patient and the family caregiver.

CURRICULUM OBJECTIVES

The project and the Curricular Programme itself aim to develop digital skills training for family carers so that they can make better use of new technologies during their caring experience. There is a growing need to complement existing skills with new digital approaches and competences that can adequately address these new challenges. The project builds on the work of the Consortium to develop a new and updated training curriculum to meet the needs of care recipients and make proper use of the new opportunities offered by technologies.

The project therefore addresses the priority of a greater understanding and development of digital competencies and, in general, of digital transformation through innovative upskilling pathways. Therefore, in its methodology and the overall management and implementation, it will support the strategic priority the action plan,

the development of a high-performance digital educational ecosystem, building capacity and critical understanding on how to exploit the opportunities offered by digital technologies for teaching and learning at all levels and for all sectors, and to develop and implement plans for the digital transformation of institutions.

The cooperative partnership will enable the consortium members to increase the quality and relevance of their activities by exchanging or developing new practices and methods that could lead them to become forward-looking learning centres.

The project scope also addresses the priority of promoting Erasmus+ among all citizens and generations.

METHODOLOGY

Focus groups were organised in Bulgaria (11 caregivers), in Greece (19 caregivers), in Italy (10 caregivers) and in Kosovo (10 caregivers). A total of 50 caregivers participated in these focus groups.

The intent of the focus groups was to identify facilitators and barriers to the previous support they had as caregivers in order to enable the identification of the different interventions already used and to analyse their effectiveness. More specifically, the objectives were:

- Analysis and evaluation of past methodologies used in training activities for family carers; Research and in-depth analysis of training needs;
- Definition of the methodologies adopted;
- Development of the theoretical framework for the implementation of the model, which will be provided to personnel involved in training as trainers.

A questionnaire was prepared in advance in order to guide and help the analysis of the focus group results. The questionnaire was prepared in English and then translated into all partner languages so that the carers could answer in their own language.

After the results of the study, the partners decided on the structure of the curriculum on the basis of these results and the needs expressed by the carers.

LEARNING OUTCOMES/OUTCOMES

The main results of all focus groups are as follows:

- Most caregivers in the countries involved are predominantly women. This information reflects a cultural aspect in which women generally assume care responsibilities within families. It is important to fight this ideology and try to include more men in this field and ensure equal support for all caregivers, regardless of gender.

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DIGITAL TOOLS
for dementia caregivers

- A significant proportion of caregivers were in the 50-60 age group. This highlights the impact of demographic change: due to longer average life expectancy, more people tend to suffer from dementia and need targeted interventions. It is crucial to implement actions to promote intergenerational solidarity in care-giving in order to support older caregivers and to involve younger and younger generations.
- The duration of caring experience varies among the participants, with a considerable percentage providing care for more than three years. This emphasises the long-term commitment and dedication required of dementia caregivers (most of them are family members), but at the same time underlines the need for constant help and adequate resources to prevent burnout and stress, thus ensuring the well-being of both caregiver and patient.
- survey results reveal a worrying lack of formal training among caregivers, particularly in Italy, where none of the respondents received any training to become a caregiver. This means that more training programmes need to be implemented, made accessible to all and adapted to the specific needs of dementia caregivers. It would be better to include both traditional and digital modes in order to meet the different learning preferences of individuals and to adapt to their levels of technological competence.
- Greece and Kosovo had higher adoption rates of digital tools for caregiver training Italy and Bulgaria. It is essential to recognise the potential of digital technologies in bridging the gaps between people and access to training and education, empowering them to develop their skills and abilities and improve and facilitate communication.

In conclusion, survey results underline the fundamental importance of supporting caregivers of persons with dementia through targeted trainingeducation and access to digital tools in order to provide them with valuable resources, alleviate some of the burdens, increase their confidence and mental well-being.
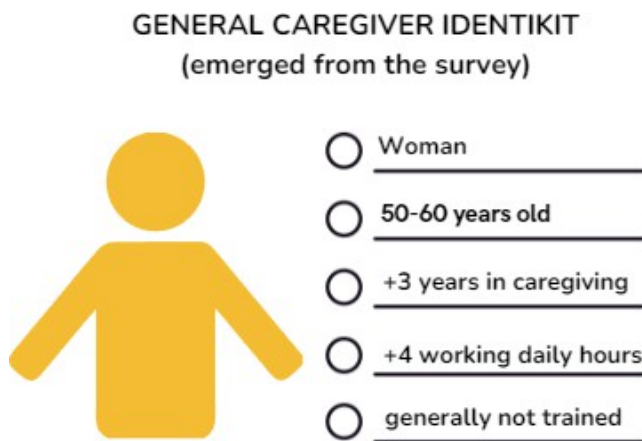
GENERAL CAREGIVER IDENTIKIT
(emerged from the survey)

○ Woman

○ 50-60 years old

○ +3 years in caregiving

○ +4 working daily hours

○ generally not trained

Figure 11: Caregiver identikit

EVALUATION

After the results of the focus groups, the team created the curriculum topics to meet the needs of the carers. The curriculum was defined in 5 modules: computer and data literacy, communication and collaboration, digital content creation, safety and problem solving using digital tools. Each partner responsible for one module based on their experience. The modules were written and then discussed by all partners.

The second step was the training of trainers. The training took place in Athens in July 2024. Each partner was responsible for finding four trainers to be present and trained in Athens. Four trainees from Italy, four from Greece, four from Kosovo and four from Bulgaria (a total of 16 trainees) participated in a 3-day curriculum training course. The final objective was for these trainers to train their end-users, caregivers or carers about the Digital Tools for Dementia Caregivers programme. Trainees from Dementia Care, Alzheimer's Athens Association, ECSA Kosova and Compassion Foundation had to train 50 people in turn (a total of 200 caregivers or health professionals).

The partners were responsible for creating the training presentations and for being present on the different training days to keep an eye on the training. The trainees used the official project presentations and trained the other participants. At the end of the training, all participants received certificates of participation.

MODULE 1 - INFORMATION AND DATA LITERACY

1.1 Definition of health literacy and e-health literacy

"Health Literacy is related literacy and involves the motivation, knowledge and skills to access, understand, evaluate and apply health information in order to make judgments and decisions in everyday life regarding health care, disease prevention and health promotion to maintain or improve quality of life throughout the course" (Sorensen et al., 2012). The ultimate goal of health literacy is to improve people's quality of life and help them in their everyday lives to find the correct and useful information regarding their health.

Health literacy is necessary for all aspects of our daily lives. From a simple visit to our doctor to understand the problem and seek medical advice to a thorough understanding of the information provided on leaflet or food label or more complicated issues such as understanding the information of Ministry of Health policies. Health literacy is involved in disease prevention and health promotion. A simple example to understand the importance health literacy is the recent experience we had with the Covid-19 pandemic, the measures taken, the vaccines and the interpretation (true or false) regarding the decisions taken by the various ministries of health to deal with the emergency situation.

In order use Health Literacy correctly, additional skills are needed. First of all, we need to find information about the specific health problem we are experiencing. The next step is to understand the information found according to our reading and comprehension skills. Furthermore, we have to assess whether the information is reliable and clear and, finally, we have to be able to apply the acquired health information.

Although health literacy seems to be, at least today, evident with all the information we have, a recent survey by Health Literature Europe (https://www.healthliteracyeurope.net/) of 8000 participants in 8 countries concluded that 40% of participants reported low levels of Health Literacy and therefore problematic health behaviour and even poor self-perceived health. The results show the urgent need to improve health literacy.

Having defined health literacy, we must turn our attention to another, more recent term: e-health literacy. It is defined as the ability to identify, understand, exchange and evaluate health information from online environments in the presence of dynamic contextual factors and to apply the acquired knowledge at all ecological levels for the purpose of maintaining or improving health (Paige et al., 2018).

1.2 Identification and description of a health problem

Recognising and describing a health care problem is the first and most important step in a medical procedure. However, expressing and communicating the problem is not as obvious as it seems, especially for the elderly population and people with mental or cognitive problems. In verbal communication, we perceive and produce language words, thought processing our ideas about the world and what we experience, as well as through our feelings and moods. It is the most obvious form communication, where everything is immediately expressed through language and information is perceived by others in any social circumstance. But there is more than just verbal communication. Non-verbal communication works in a slightly different way. It is the information not communicated through language and speech. It consists of information perceived through eye contact, proximity, hand and head movement and general body language such as posture and appearance. Numerous studies have shown how important non-verbal communication is in conveying a message.

When trying to understand a health problem expressed in some way by a person we are caring for, we need to apply both verbal and non-verbal forms of communication. Firstly, the carer must initiate conversations with the person they are caring for, especially if they notice that they are initiating fewer conversations themselves. To have successful communication, caregivers must remember to speak clearly and slowly, using short sentences and making eye contact with the person when speaking or asking questions. They must also give them time to respond, as patients may feel pressurised if they try to speed up their answers, and encourage them to participate in the conversation and let them speak for themselves during discussions about their or health problems without trying to patronise them or ridicule what they say. The caregiver should provide them with simple choices or options and use other ways to communicate, such as rephrasing questions because they cannot answer them as before. As mentioned earlier, communication is not just talking.

Gestures, movement and facial expressions may convey meaning or help convey a message. Body language and physical contact become significant when language is difficult for a person with mental or cognitive problems.

It is also important that the carer encourages the person to communicate what they want, in any way possible. Remember, it is frustrating when we fail to communicate effectively or are misunderstood. Communication is a two-way process. A carer of a person with dementia will probably have to learn to 'listen' more carefully. They may need to be more aware of non-verbal messages, such as facial expressions and body language. They may need to use more physical contact, such as reassuring pats on the arm, or smiling in addition to talking. This type of listening, called active listening, might benefit using eye contact to look at the person and not interrupt them, even though the caregiver might think they know what they are saying. In addition, they should interrupt what they are doing so that they can pay full attention to the person while they are talking and minimise distractions that could hinder communication, such as television or radio playing too loudly. An effective way of communication could be to repeat back to the person what they heard and ask if it is accurate, or ask them to repeat what they said.

1.3 Information needed in a medical examination

The relationship with a doctor is a very personal one built on communication and trust. In choosing a doctor, 'trust' will be functional. One should have a propensity to trust, to confide and tell the doctor one's health concerns about the person is caring for. The doctor, in turn, should listen, give options and feedback, and have the patient's best interest in mind. There are some important characteristics one should check before choosing a doctor. First of all, caregivers should check if he/she is available to talk to them or if they need to try again and again to find him/her. In addition, they should check whether the doctor is willing listen carefully to them and whether his office is close to them so that, in an emergency, it will be easy for them to reach him.

During a medical examination, and especially if the patient is unable to accurately describe health problems, it is very important for the caregiver to be accurate about the patient's symptoms. For example, if they say that the patient is experiencing pain, this is a very general description, but if they say that the patient feels pain in the head and right hand, the caregiver gives the doctor the opportunity to make a better examination and diagnosis.

It is also very useful to note when a symptom appears. If it is happening every day for the last month or if it happened once and, therefore, is a simple accident. It is also important to mention how long this symptom lasts and how intense it is.

In addition, it is essential to mention to the doctor if there is any recent change in the patient's prescription, if there are any other health problems that might affect him or her, or if there are any side effects to any medication he or she has used in the past.

Finally, it is also important to learn to listen carefully visiting a doctor in order to have good communication. The caregiver must wait until he or she finishes any

demand instead to talk to him at the same time, otherwise neither the caregiver nor the doctor will understand each other.

1.4 Tips for a successful medical examination

In order to have successful medical communication with the doctor, certain rules must be followed order to build an effective partnership:

First of , the caregiver should be organised. Doctors are busy, so patients need to know how to get the most out of their limited time with them. This means that they should be organised and focused on the questions they want to address. They should think in advance about the they want to answer, write them down and prioritise them, highlighting the three or four main ones they want to discuss at the specific doctor's visit.

In addition, caregivers must keep good records. They must provide their doctor with valid and accurate information about their patient's symptoms and medication so that the doctor has the necessary tools to accurately diagnose the condition and prescribe appropriate treatment. A list of medications and supplements the patient is taking, recent symptoms and the dates they occurred, any recent tests and the names of other doctors the patient is seeing could be useful information to share with the doctor. The better the communication of needs and concerns, the better the doctor's response.

Furthermore, caregivers should balance assertiveness with respect and understanding. Although it is important to let the physician know the needs of the caregiver and the patient or if they are dissatisfied, it is equally important to express appreciation for the positive aspects of the communication and treatment that the physician proposes.

Finally, before leaving the doctor's office, the carer should find out the best way to keep in touch between visits, either through the nurse, by e-mail or by leaving phone messages. Caregivers should keep in mind that the doctor is also a person with a personal life and cannot be at their disposal every time they need advice or service.

In order to make the medical examination as productive as possible, the carer could follow the following suggestions:

- Bring a pencil and a notebook to take notes.
- Keep the discussion focused, making sure to bring back the main questions, symptoms and concerns.
- Ask for clarification if one does not understand what has been said or if the carer still has questions.
- Ask for explanations of the treatment goals and side effects.
- Let the doctor know if the patient is seeing other doctors or health professionals.
- Share information on any recent medical tests.
- Standing up for the patient if the caregiver's concerns are not addressed.
- Balancing assertiveness with friendliness and understanding.

1.5 Choosing health-related keywords

Thanks to the Internet, it is now possible to find answers about health problems without contacting a doctor. This could be useful but could also be dangerous because, since carers are not doctors, they might misunderstand, overestimate or underestimate the information sought on the Internet.

To find useful and reliable information on the Internet, one should start with a good web search. This might be possible by searching with keywords for the information we are looking for. A keyword is a particular word or phrase that describes the content of a web page, a link that summarises an entire part of a web page's metadata page. Most Internet users use keywords or key phrases to search for information on search engines, as they facilitate and help to search the web more effectively. If the correct keyword is selected, it is easy to navigate the Web.

In order to find the correct keyword or phrase related to the required information, there are a few steps to follow:
1. Write the question/research for which the person wants information on a sheet of paper. Try to define the question in sentence form.
   Example: My wife/husband is very irritated at night. How can I handle this behaviour?
2. Define the population the person is interested in for the specific question. Consider the specific population and/or disorder.
   Example: people with dementia, elderly, dementia
3. Define the problem the person is interested in the specific question. Consider the symptoms and the categories to which the symptoms belong.
   Example: In the above example, the specific category is irritation and behavioural disorders in dementia.
4. Find words related to the question, which in the given example will be behaviour management and note down several words indicating the required information.
   Example: solutions, approaches, treatment/assistance options
5. Combine all the previous steps in the web search
   Example: how to deal irritation/night-time behaviour in a patient with dementia

1.6 Evaluation of web resources

As mentioned before, web resources may be useful but they may also be dangerous if the information is not reliable. Unfortunately, not all information can be trusted as the information may be misleading, old or the source may not be reliable. For this reason, it is very important to be sure of the reliability of information before using it. In this chapter, we will provide information and advice in order to check and evaluate the web resource before using the information retrieved to research the problem.

The important aspects that need to be assessed in order to trust a web resource are 4:
1. Reliability of the website: is it safer use information read online from a site belonging to a medical institution (Mayo clinic), a well-known non-profit organisation or any

other trusted public or private health organisation (e.g. Alzheimer's Association, Association for Cardiovascular Diseases and Diabetes, etc.).

2. Website usability: is safer to use information from website or source that is user-friendly and easy to navigate. This refers to the extent to which a website is easy to use and provides a positive user experience in terms of its design and structure.

3. Accessibility of the website: it is safer to use information from a website or source that is easy to find, at the top of the list in web engine results.

4. Readability of information: this is very important as it concerns the information itself. Before using the information, the person should check the date when the text was published online (it can be found at the end or beginning of the website page). Furthermore, when reading the text, the reader should check whether it is short, using simple sentences and familiar words while avoiding jargon, and whether it avoids errors in grammar, punctuation and spelling. It is clear that an article written with spelling and grammatical or syntax errors should not be considered scientific. Furthermore, the reader should note whether the text avoids repeating the same sentences or paragraphs over and over again and whether it uses culture- and gender-neutral language. Finally, the reader should pay attention to the simplicity of the information provided not only within the text but also in the graphics.

MODULE 2 - COMMUNICATION AND COLLABORATION

2.1 Digital tools: exploring the impact on caregiving

Informal caregivers are an integral part of today's ageing society. Digital tools enable caregivers to find resources and support as well as to coordinate caregiving activities. Balancing these activities with other household and work tasks can be difficult. Good communication and sharing of responsibilities are essential to stress and prevent caregiver fatigue (long-term physical, mental and emotional exhaustion leading to fatigue, anxiety and depression).

Figure 1: https://susanbirenbaum.com/what-are-the-signs-of-caregiver-burnout/
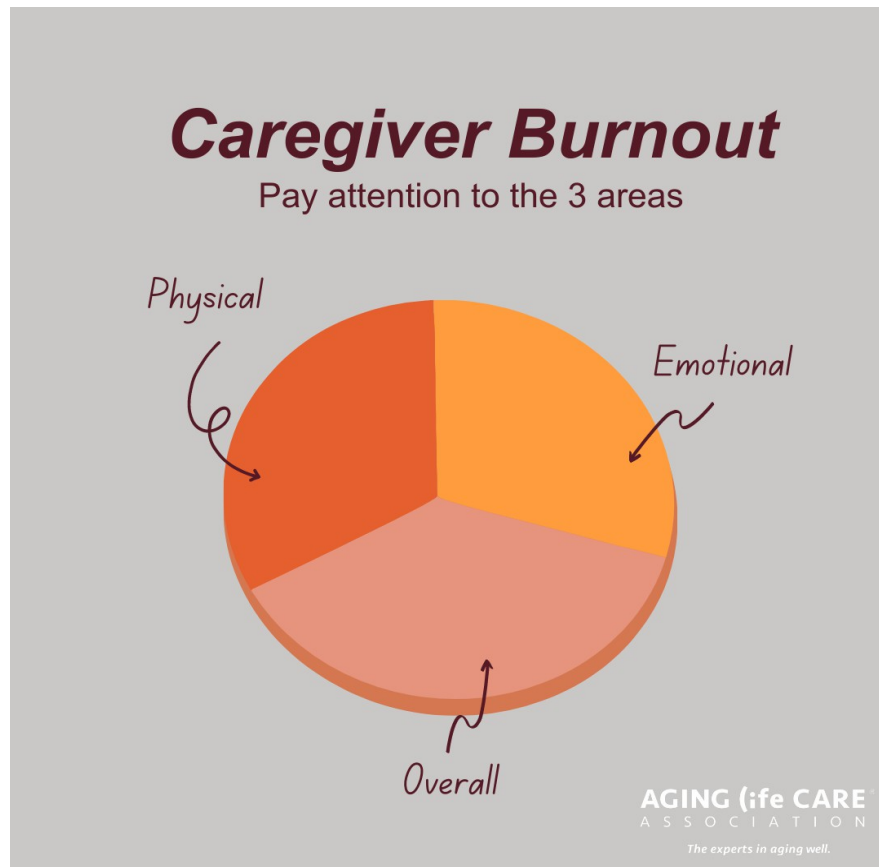
2.1.1 Caregiving: a physical and mental cost

The term 'caregiving' is heard more and more these days and this activity is really commendable.

This task can lead to depression, anxiety, stress and anger. There are a number of factors that contribute to the psychological burden of caregiving, including lack of support. Caregivers may feel isolated and unsupported, especially in the absence of an adequate support network.

The *'Caregiving Appraisal Scale'* (2000) by M. Powell Lawton, Miriam Moss, Christine Hoffman and Margaret Perkinson examined the feelings and experiences of this courageous and silent category.

And what emerges from these different collections of information is similar:

Caregivers experience anger, fatigue, guilt (fear that their work is not enough) or their own perceived 'worthlessness'.

According to a 2005 survey by the Center on Ageing in Washington DC:
- 16% of caregivers experience fatigue;
- 26% feel the emotional pressure of their work;

- 13% are deeply disappointed by their loved one's lack of self-improvement;
- 22% face the fear of not being able to cope with the responsibilities of their tasks at the end of the day, the fear of the future that awaits them and the fear of their own inability to cope.

The pressure on caregivers also manifests itself on a physical level (already challenged by practical tasks), making it easy for them to end up with stomach problems, headaches, possibly pain from heavy work, a range of immune dysfunctions and problems that often result from a lack of time and resources to take care of themselves.

Burden of care is a related concept. It shows similar symptoms to Burnout, such as fatigue, emotional exhaustion, anxiety and depression. However, it is particularly caused by the ongoing responsibilities caregiving. Caregivers often feel that no one else can care for their loved ones like they do, leading to feelings of dependency and isolation. This emotional strain can negatively affect the overall quality of life.

2.1.2 Internet and social media against caregiver burnout

Caring for caregivers is a valuable and demanding task. Caregivers often face a number of emotional and physical challenges.

This section provides information on the use of the Internet and social media in relation to carers, including online and offline support. A study has shown that online and offline communication and connection can alleviate caregivers' psychological distress.

This is particularly important as carers often experience high levels of stress and anxiety.

1. Online support groups: online support groups can be very valuable for carers. Through these groups, carers can share experiences, seek advice and reduce feelings of isolation. However, it is important to use these groups in a balanced and informed way.

2. Use of social media: some carers do not use social media or the Internet frequently. This may increase the risk of social isolation and increased stress. It is therefore helpful to encourage carers to join online support groups.

In summary, both the conscious use of social media and offline connections can help improve caregivers' well-being. It is important to find a balance between these two forms of support so that caregivers can best cope with the challenges of caregiving.

2.1.3 Caregivers and technology: what they want and need

Technology plays an important role in supporting caregivers and care recipients.

In recent years, advances in digital technology have brought significant changes to the healthcare sector, offering new opportunities for caregivers and care recipients.

Below are some key considerations:

- Continuity of care: technology has enabled caregivers to provide care at a distance. Through apps and online services, patients can be monitored and advice and guidance can be provided;
- Support to daily life: technology products and services can facilitate the daily activities of caregivers and improve the quality of life of both patients and caregivers;
- Gender and social differences: it is important to consider the gender and social differences that influence the caregiving experience. The ASSD Women's Committee conducted a survey on digital health services, focusing on citizens' health needs for digital literacy.

In summary, technology offers valuable tools to improve care and quality of life for both caregivers and care recipients.

2.2 Digital Health: a potential to support carers

The widespread use of telemedicine and other digital tools on the one hand, and the introduction of advanced technologies in healthcare on the other, have triggered significant innovation in modern clinical practice. Indeed, the use of technology in healthcare has paved the way for a wide range of benefits for both patients and their families, enabling use of advanced security tools and the training of healthcare professionals on privacy and security issues, without neglecting the fundamental aspect protecting patients' personal and medical data. It opens the way to a wide range of benefits for both patients and their families.

Digital tools and technological innovations are particularly important during the COVID- 19 crisis, when patients and caregivers must reduce the risk of infection. However, far beyond the pandemic, high-tech tools can improve the quality of life of all those at risk of becoming caregivers. This is what digital health is all about: helping realise the eternal human desire to care for our loved ones.

Figure 2:https://699pic.com/tupian/chahua-shoujiceshi.html

2.2.1 Technological innovations for carers and people with dementia

Digital solutions, if well understood and used, can make a difference and are important in helping health and social care carers, families, communities and society as a whole.

In addition to structural limitations (European Digital Performance Indicators, Italy ranked 18th), economic, social and gender inequalities may be barriers to the fair and equitable use of digital technologies. According to the WHO analysis of the European region in 2022, the European region that will benefit the most from digital health services will be the one that has the most difficulty in accessing digital health or will make limited use of the available tools. However, among the most educated, it is women who drive access to digital health for themselves and their families. Therefore, the digital literacy of women, in particular, is critical to realising the significant health benefits that digital technologies can bring to caregivers, families, communities and society as a whole.

2.2.2 How technology can empower all carers

Technology has the potential to transform care services. Try apps to keep track of medication, appointments and routines. Consider safety tools such as fall detectors and emergency response systems. Telemedicine services also allow easy access to caregivers.

Technology not only helps with safety and efficiency, but also offers peace of mind. Be open to new technological advances that can simplify complex care tasks, streamline communication and ensure the well-being of your loved ones. Embracing technology can transform the caregiving experience and make it more manageable and less stressful.

2.2.3 The benefits technology tools and innovation

Technological innovations have the potential to significantly improve the lives of people dementia, their families and carers. We explore some of the ways in which technology can have a positive impact:

1. Assistive technology for care: the increasing number of people with dementia and the ageing of caregivers make it increasingly difficult to provide high quality assistive care to people with dementia.

    Assistive technology care models can reduce the burden on caregivers and improve the quality of care. These technologies can help patients maintain daily routines and social connections, especially in the early stages of dementia. They also have the potential to reduce the need for long-term care.

2. Communication aids:

- Technological devices such as telephones, chat interfaces and videoconferencing can connect geographically distant patients, caregivers and health workers.
- Such tools reduce the need for frequent visits to the dementia patient's home or nursing home.
- In addition, technology is expected to facilitate cognitively oriented therapeutic interventions and support family members between sessions, thus affecting the progression of dementia.

3. Monitoring and perception:
   - People with dementia often experience balance and walking difficulties and stress-related behaviour, which increase the risk of falls, injuries and other health problems.
   - Wearable sensors, cameras and other monitoring devices can track movement patterns and falls.
   - The evidence is mixed, but some of these technologies can reduce anxiety for patients and their families.
   - GPS tracking and orientation tips increase independence, while audio/visual reminders support activities of daily living.

4. Watches designed for dementia:
   - Specially designed watches can help alleviate the anxiety associated with dementia.
   - People with dementia can confuse day and night and an easy-to-read clock helps them to distinguish the time.

5. Home care robots and home cameras:
   - Robots can help with daily activities, remind patients to take their medication and keep them company;
   - Home cameras provide remote monitoring and security checks, ensuring the well-being of the patient even when the family member is not physically present.

6. Using the monitoring device:
   - Smart devices can monitor the use of household appliances (e.g. stoves and ovens) and alert caregivers when they are left on or pose a safety risk.

7. Medication management tool:

- Medication management tools; Technological management of medication schedules, reminders and refills to reduce the risk of forgotten doses.

This collaborative, multidisciplinary and person-centred approach is essential in implementing these innovations to ensure the best possible outcomes patients and their support networks.

2.3 Digital solutions: a practical guide to helping those who help

Digital technology offers practical solutions carers who want to solve problems, learn new skills and get support; it makes a contribution to improving carer experience by harnessing technology to

- Improving the processes of activation and use of the portal for patients;
- Make appointment scheduling quicker and easier with standardised appointment templates and automatic reminders;
- Improved communication through a remotely accessible web portal to reduce the caregiver's documentation burden;
- Reducing waiting times.

Figure 3: https://www.inspirisys.com/practice-overview

2.3.1 Some of the tools to help care

- **The Electronic Health Record (Fascicolo Sanitario Elettronico - FSE):** is an invaluable tool for caregivers caring for elderly people with Alzheimer's disease; it contains information on medical visits, examinations and prescriptions. Every a health service is used, documents are automatically entered into the file.

  ESF activation for elderly parents:

  - Access the local health record private website.
  - Login or access options include entering your tax code and password.

- Once logged in, you will be able to view all patient records.
- This includes medical reports, examinations and specialist advice.

The ESF holder can authorise medical professionals to view his or her files; access to the ESF can be delegated to one or more trusted persons. This authorisation allows caregivers to assist elderly parents in accessing the portal.

Benefits of the ESF for carers:

- Instant access to medical records without having to carry physical documents during medical examinations.
- The files are automatically updated after each medical service.
- It is possible to enter additional information that is not available in the ESF.

- **The electronic calendar**: Managing a sick person's schedule requires attention and organisation. Here are some solutions for managing the schedule effectively:
    - Manage your appointments: the electronic calendar allows you to mark and organise your appointments, meetings and events. You can view daily, weekly and monthly schedules.
    - Reminders and notifications: you can set reminders for appointments and receive alerts when the time approaches. Notifications remind you of important appointments.
    - Device synchronisation: most electronic calendars automatically synchronise data between devices (computers, smartphones and tablets). This way, information can be accessed anywhere.
    - Customisation: some calendars allow customisation of categories, colours and appointment labels. This allows you to organise different tasks effectively.
    - Sharing: some apps allow you to share your calendar with others. For example, you can share your calendar with colleagues or family members to plan common events.
    - Integration with other tools: some electronic calendars can be integrated with services, maps and other apps to simplify scheduling and appointment management.

2.3.2 Digital inclusion in caregiving

Although a cure for dementia has not yet been found, new innovations have been introduced to reduce the burden of care and make life more comfortable and safer for people diagnosed with dementia.

- **Emergency telephone services:** One example is the Alzheimer Federation Italy, the largest national non-profit voluntary association dedicated to the support and defence of Alzheimer patients and their families.

  Founded mainly by patients' families, the Federation is the main reference point for Alzheimer's disease in Italy. Since 1993, the Italian Alzheimer Federation has been the first telephone service in Italy to provide support, help and guidance to patients and their families. It runs 'Pronto Alzheimer'. Callers can talk to other relatives, volunteers or professionals to obtain different types of information (about the disease, its course, how to treat the sick person, etc.) or simply as an opportunity to chat.

- **Care diaries**: documents to trace the characteristics and preferences of sick people. This makes it possible to intervene more quickly and effectively when necessary. Diaries help to better understand the person and to personalise care.

- **Alzheimer's app:** the app you are referring to appears to be a valuable interactive tool available for free in both the App Store and the Google Play Store. The app provides up-to-date information from accredited sources, including details on dementia, patient behaviour management, available services and local care facilities. It also includes personal stories and a quiz to dispel common myths about dementia.

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MODULE 3 - DIGITAL CONTENT CREATION

3.1 Creating immersive learning experiences: a pedagogical design perspective

One of the main reasons why it is worth investing in an immersive learning environment is its 'presence factor'. Remote and hybrid workers can sometimes miss the deeper engagement aspects offered by learning programmes. Investment in immersive learning helps to connect remote teams and activate their interest learning by creating a sense of presence. Immersive learning does this by erasing the barriers of the physical world and providing quasi-real simulated experiences to remote and hybrid people.

On other levels, investing in immersive learning experiences offers tangible benefits:

- It helps build emotional and cognitive thinking in the learning and experience process. Technologies such as VR, AR and metaverse-based content offer full immersion, which produces a higher engagement quotient of people.

- The use of immersive learning technologies has made it possible to better integrate scientific learning principles into acquisition approaches. This makes it more 'impactful' than traditional, non-immersive approaches.

- The integration of Big Data and learning analytics tools into immersive learning products means that L&D teams can now make better use of data to evaluate the effectiveness of learning and measure the return on investment in training.

- The use of spatial design in immersive learning content helps provide people with a more realistic training experience. This not only increases knowledge retention, but also improves knowledge transfer in the workplace.

When people do not find learning stimulating or feel that their learning experiences are ineffective, they tend to disengage or gravitate towards passive participation. The best way to address these problems is to invest in creating immersive learning environments that motivate, excite and connect people with each other and with learning needs.

Providing engaging learning experiences promises several benefits, all based on a body of scientific research, including:

- A higher degree of personalised learning.

- Increased knowledge transfer through the introduction of interactive 'do and learn'.

- More realistic learning experiences in the real world, because people not only simulate what they will face on the job, but can also practise specific scenarios several times, if necessary, to acquire competence.

- Opportunities to make people 'fail first' by exposing them to a series of simulated future scenarios.

- Elimination of risks associated learning in traditional, non-immersive learning environments, such as the use of hazardous chemicals, contagious pathogens or high-risk surgical situations.

- Ability to leverage real-time data to initiate timely, data-driven learning interventions. This real-time feedback improves their real-world decision-making capabilities.

- Achieve a better return on learning initiatives by providing hybrid people with the skills to have a positive impact on business results.

Remote and hybrid workers typically encounter higher barriers to learning and far more interruptions and problems learning. Traditional learning approaches, such as reviewing text-based lectures, listening to audio learning content or watching a PowerPoint presentation, typically engage learners through lower levels of cognitive interaction.

These approaches are not as effective for true engagement. Immersive learning, on the other hand, uses technologies, techniques and learning content that stimulate multiple senses, thus engaging people at much higher cognitive levels. People hybrid work, therefore, are more likely to absorb training content and participate more enthusiastically in learning.

The successful implementation of immersive learning solutions requires a methodical approach. The key is to define an immersive, appropriate and supportive learning environment. This involves careful planning and design to create an immersive learning environment that is not only unique to an organisation's learning needs, but also adopts person-centred design approaches, complements other ongoing training and development initiatives, and helps them put theory into practice in their unique work context.

This is how the learning environment can provide positive and immersive learning experiences.

Designing immersive content

Considering the centrality of the person: this requires offering unique learning experiences to each person.

Tap into people's motivation: a great way to tap into people's motivation is to promote the benefits of learning opportunities wherever and whenever possible. Highlight the 'WIIFM' value proposition (what's in it for me?): self-improvement, promotions, salary increases, professional certifications, industry accreditation, recognition, peer respect and brighter prospects.

Harnessing the five aspects of emotional intelligence (EI) - self-awareness, self-regulation, self-motivation, social awareness and relationship management skills - is an integral part of providing positive immersive cognitive learning experiences to people at a distance.

Appeal to people's core values: ensure that the content and learning experience is in line with a set of learners' core values, including a continuous learning mentality.

Take into account the need to promote student participation and involvement when designing programmes:

- Include aspects of interactive learning in programme design and in the design of scenarios and practical use cases to which hybrid teams can relate.

- Harnessing the power of simulations.

- Include gentle reminders and suggestions to incentivise hybrid students to engage with the programme.

- Exploit performance support tools to assess the performance of distance learners as they explore their personal learning paths.

Accessibility and Diversity, Equity and Inclusion (DEI) factors: ensure that all content and environmental design elements comply with applicable DEI standards, including the Voluntary Product Accessibility Model (VPAT) and the Web Content Accessibility Guidelines (WCAG).

Immersive learning strategies

Choosing the right strategy: the quality of immersive learning experiences is driven by strategy. Therefore, it is important to choose the right immersive learning strategybe it gamification, story-based learning, branching simulations, AR/VR/ER and MR, video-based learning or scenario-based learning.

Consider learning on the move and anytime, anywhere learning as part of a dynamic and responsive learning design: to this end, exploit microlearning interventions, just-in-time learning and workplace learning tools as part of your immersive learning environment.

Exploiting real-world scenarios: the best way to ensure that one's immersive learning environment achieves its stated objectives is to make it relevant and recognisable to the target audience. This is done by centring learning content on real-world and use cases and not on the basis of hypothetical or abstract learning.

Leverage social learning and learning cohorts to provide personalised immersive learning experiences: create and encourage the formation of learning communities so that people can benefit from peer-to-peer learning. Encourage social learning by organising webinars, group discussions, seminars, talks with subject matter experts (SMEs), etc.

Incorporate aspects of real-time or near real-time feedback into the environment: provide opportunities to instruct and guide learners as they interact with the immersive learning programme. Incorporate real-time performance feedback, guided by the most appropriate rating scales applicable to your hybrid target. Map customised assessment zones to examine the performance of each individual within your organisation.

Immersive learning technology

Choosing 'content-based' technology: technology is the key element in creating immersive experiences carers**.** This is because all other components of the immersive environment, including content, interactions and the types of interventions used (360 degree video, animations, podcasts, etc.) depend on the choice of appropriate technology.

Using a combination of immersive technology and content strategy to enhance impact (gamified VR, microlearning-based VR, metaverse, augmented VR [AVR]): technology and content are two pillars of an immersive learning strategy. It is important to use both pillars to promote excellence in each other. For example, an immersive learning strategy will not take off without the support of the appropriate mobile technology and responsive design.

Leveraging LXPs to create immersive learning paths and personalised learning: learner experience platforms (LXPs) are key to delivering immersive learning experiences. Since each person has a unique learning style and everyone has individual learning goals, LXPs can customise and tailor the learning environment to entice people to immerse and interact with the learning content.

Thoughts of separation

Before you start planning and developing immersive learning experiences for your workplace, there is one golden rule to remember: while state-of-the-art learning technologies such as AI, VR and AR provide basis for immersion, creating an immersive learning environment

should not be the only goal. True immersive learning requires both a comprehensive technical architecture and engaging, engaging content. Focusing on one aspect of the solution at the expense of the other may result in a limited return on investment in immersive learning.

3.2 Ways to provide immersive learning experiences

Immersive learning is increasingly being used in corporate organisations for employee training and development purposes. Learning and development (L&D) professionals have realised that in order to maximise the absorption and retention skills and knowledge, they need to help students/employees experience things first-hand. But this is not possible at all times, so the second best thing is to create simulated or artificial environments around students/employees that allow them to learn as if they were learning from a real experience. Immersive learning offers people an immersive and highly interactive environment both virtually and physically, putting them at the centre of a learning experience. But how can corporate organisations incorporate training into their digital learning programmes? This is what we will discuss in this article.

1. Simulations

Simulations are one of the best ways to immerse people in a virtual learning environment. A simulation is usually a computer or mobile programme that allows the student to take control of a character that is expected to perform certain tasks correctly. Simulations have been used as early as 1947 to train students to perform a particular task. For example, pilots spend thousands of hours in simulated drills before entering the cockpit of a real plane. Today, advanced software allows students from almost field to hone their skills before applying them in the real world. However, simulations are best used in sectors where the correct application of learned skills could be a matter of life and death. For example, the healthcare, chemical or pharmaceutical manufacturing industry, or where mistakes could prove quite costly, such as the automotive or construction industry.

2. Game-based learning

Another great way to offer immersive learning to employees/students is to offer them gamified digital learning modules. Modern students are accustomed to playing games on their computers, laptops and smartphones and these are a great way to keep students engaged while helping them learn. Gamification offers an immersive learning experience to students for a number of reasons, including the fact that games are challenging at the right level (although this depends on the digital learning designer), which motivates students to play them more and thus learn more. Secondly, gamification uses leaderboards (or at least effective gamification), which motivates students to compete with their peers for better scores and to be recognised. Furthermore, just like simulations, games create another world in which students have to perform certain tasks following certain rules and get rewards and/or be punished for doing things correctly or not.

3. Augmented Reality/Virtual Reality (AR/VR)

The latest in immersive learning experiences and the most immersive of all is AR/VR technology. Because AR/VR engages students visually, audibly and physically in a way no other immersive learning technique can, it is what a number of industry giants use to provide their students with an immersive education, and this is what a number of corporate organisations are looking to incorporate into their training programmes. In the future, there is talk of creating entire virtual worlds that can be accessed using AR/VR for students, where they can train for different tasks in different locations in the virtual world. Moreover, AR/VR can completely block out any distractions, ignoring the problems of diminished attention span and providing a truly immersive experience.

4. 360 degree video

Video is the most immersive form of content currently available, which is why some digital learning courses today are video-based. But while traditional videos can be viewed on both computers and mobile devices, they cannot match the immersive learning experience of a 360-degree video. 360-degree videos are especially useful if you want students to fully understand geographic locations, show them your building during onboarding or help them see things that are happening at the same time, giving them a normal, human perspective.

Immersive learning is the future of digital learning, especially AR/VR. With the emergence of AI (Artificial Intelligence) and the potential future advances expected, immersive learning may be able to create virtual worlds that will be almost indistinguishable from the real world. What will this mean for the learning and development sector? Until these questions are answered, corporate organisations must be content with the immersive learning techniques they have available to them in the present, which can still help their employees absorb and retain information better.

3.3. Augmented reality technology for family carers: why it is important

As the population worldwide continues to increase dramatically, the prevalence of cognitive impairment and dementia will also inevitably rise, placing an increasing care burden on families and healthcare systems. Technological advances over the past decade offer a potential benefit not only in easing the burden on the caregiver of caring for a loved one with dementia, but also in enabling people with dementia to age in place. Technological devices have served to improve functioning, tracking and mobility. Similarly, smartphones, tablets and the ubiquitous world wide web have facilitated the dissemination of health information to previously hard-to-reach populations, largely through use of various social media platforms.

It has also been noted that dementia education improves care management and social support-seeking behaviour of informal carers (e.g. seeking counselling, participation in discussion forums and informal support groups). Disparities in formal education levels between higher and lower educated caregivers may also influence

on the quality of care, but the provision of dementia education can reduce knowledge disparities between higher and lower educated caregiver groups. Other barriers to caregiving include insufficient information on the behavioural symptoms of dementia and an accurate understanding of the benefits of early diagnosis. Studies have shown benefits caregiving skills of care partners when interventions include psycho-education and are aimed at increasing communication between informal caregiver and caregiver. Overall, dementia education for informal caregivers appears to have a positive influence on both the care and health outcomes of persons with dementia.

The benefits of dementia education are well supported and informal caregivers indicate receptiveness to a variety of educational modalities, including community-based and Internet-based resources and online portals. Internet-based interventions have been shown to improve caregiver confidence, reduce perceived burden, increase self-efficacy, decrease anxiety, decrease feelings of depression and increase knowledge about dementia. A recent systematic review of psycho-educational interventions for caregivers of people with dementia living at home included studies that provided technology-based interventions and found that technology-based interventions reduced caregiver burden. Examples of technology-based interventions for caregivers include websites, tailor-made web-based interventions with expert recommendations, hybrid interventions that include an online component and an interactive telephone component (e.g., dementia care consultation and interventions with a telephone-only component). Studies comparing dementia education with participation in a caregiver network found that interventions containing both an educational and an interactive component had the greatest benefit and impact on skills, stress, attitudes, knowledge, self-efficacy and perceived caregiver burden.

The interactive components of the interventions, with discussion forums, e-mails and multiple forms of informative presentation (e.g. videos, case-based vignettes), were the most appreciated.

Digital modes of instruction, such as knowledge transmitted via electronic devices, media, the Internet, closed-loop computer networks or web-based platforms, have an impact on learning equivalent to that of face-to-face modes. Moreover, such learning offers the advantage remote or asynchronous delivery, where each participant progresses through the educational material independently. Asynchronous digital learning offers further advantages for people living in remote or rural areas, where long waiting times for specialised services and lack local educational information/programmes are common. Recent changes within health services and efforts to move services to virtual methods due to the COVID-19 pandemic have seen online learning gain in importance. Research and synthesis of existing research on current digital education methods for informal care providers can be an important step towards implementing digital dementia education programmes for caregivers and improving access to educational and support resources.

Previous systematic reviews have examined Internet-based interventions for caregivers of persons with dementia, focusing on evaluation methods including qualitative interviews, satisfaction-based interviews, organisational feedback and interventions delivered via telephone and computer. The present review examined the effect of digital dementia education delivered via technology with

remote delivery capabilities, including smartphone, phone, video, computer (online and network) applications, and focused on studies with pre and post measures in order to more accurately determine the impact digital education. The increased availability and ownership of smart devices with Internet access have changed the digital distribution of information over the past decade, as well as the motivation to engage education, partly due to the increased focus on remote and asynchronous approaches education as a pandemic need. Consequently, the current state of art explores the evidence base for different technologies used in dementia education.

Digital Tool: Extended Reality

Extended reality offers the opportunity to:
- **step into someone else's shoes,**
- **to fully understand the lived experience of another person**

The intent is placed on **experiential learning** in which users **can transform the experience into a understanding and awareness of what it is like to live with** dementia.

Software »In Your Shoes»

1 Allows the caregiver **to understand** what a dementia patient actually feels because it provides a manipulated environment

2 Aims **to train** the caregiver by comparing him with a patient with symptoms of dementia, through the simulation of reality

3.4 IN YOUR SHOES Software - Perceiving Dementia with Augmented Reality based on Dementia Eyes software

This project is based on studies carried out at the 'Keio University Graduate School of Media Design' (Japan video link: https://dl.acm.org/doi/10.1145/3478514.3487617)

Dementia is a growing national challenge in Japan. With an ageing population, there is an increasing number of people with dementia in hospitals and in the community. Most hospitals, however, are struggling to develop dementia care capacity and have paid little attention to the benefits of a dementia-friendly environment. Research has shown, however, that hospitalisation has a major impact on people with dementia and their families. It can lead to delirium, dementia progression, deterioration of behavioural and psychological symptoms of dementia (BPSD) and a decline in physical functions, which in turn make post-discharge adaptation more difficult and make it difficult for patients to return home. There is a fundamental need for hospitals to adapt in order to better care for their patients with dementia.

Mediva Inc., a healthcare consulting and service management company, noted that some medical and care professionals are not confident and feel stressed when dealing with people with dementia, partly due to a lack of awareness and partly due to a lack of knowledge and experience. Furthermore, most hospitals do not have dementia-friendly built environments and do not use the environment as part of their dementia care strategy. Mediva realised that experiencing the perspectives of people with dementia has the potential to develop empathy towards people with dementia and raise awareness towards better dementia care and its connection to the care environment. This could help address the factors that contribute to the harmful effects of hospitalisation and reduce the burden on caregivers.

Mediva, in collaboration with the Keio University Graduate School of Media Design (KMD), developed an augmented reality (AR) filter called Dementia Eyes to reproduce the visual effects experienced by people with dementia, such as poor depth perception, narrowing of the visual field and decreased contrast sensitivity. The project was supported by a grant from the Ministry of Economy, Trade and Industry 'Project to evaluate the effectiveness of products and services for a society with dementia'. When a user wears AR glasses, he or she can experience the world that people with dementia see and the difficulties that come with it. Unlike virtual reality (VR), which is reproduced in a virtual space, AR allows the user to experience this effect in their own environment. They still see the room they are in, but through the AR filter.
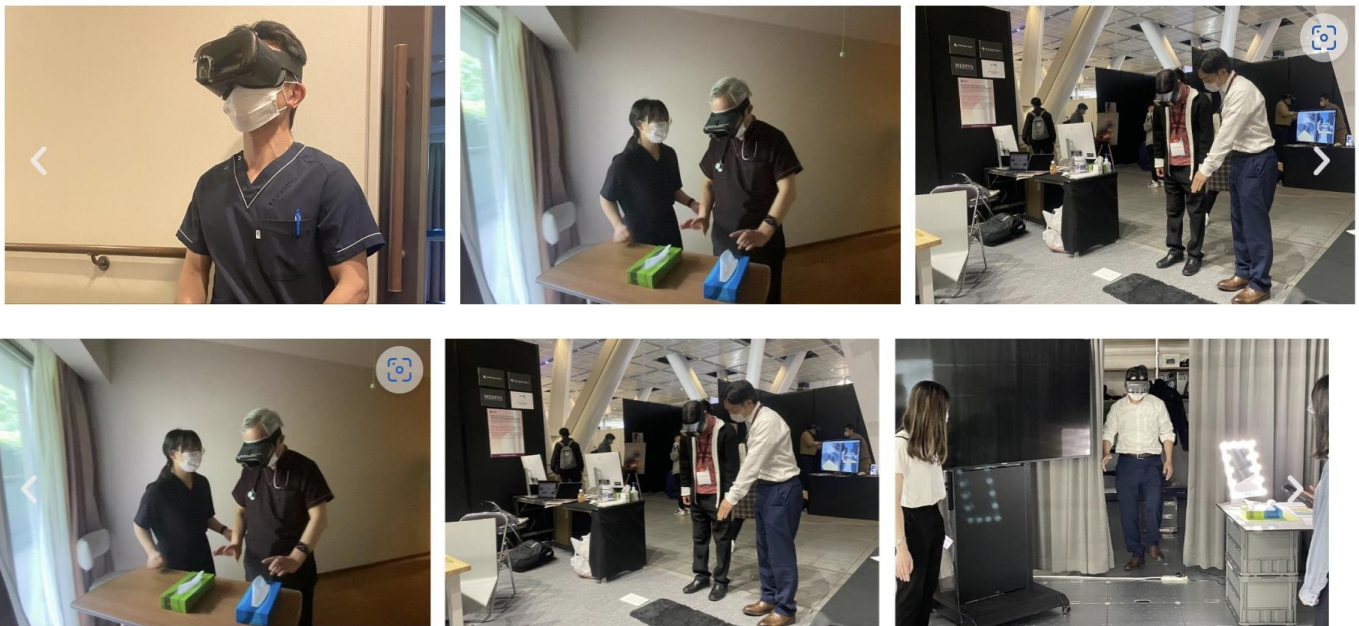
Dementia training has traditionally focused on classroom lectures, but it is difficult for people to passively take the knowledge they have learnt, internalise it and put it into practice. Mediva has developed a training programme that incorporates both active learning, such as 'Dementia Eyes', and traditional learning, such as lectures in collaboration with Dr. Asao Ogawa from the National Cancer Centre in Japan, the Dementia Services Development Centre (DSDC) at the University of Stirling in the UK, and a group of doctors and nurses who work with people with dementia on a daily basis.

Mediva started offering this new type of service for hospitals, long-term care facilities, companies, government organisations and the general public in 2021. This programme allows participants to experience the difficulties that people with dementia face in their daily lives. Before and after the AR experience, Mediva offers participants the opportunity to reflect on their practice with other participants, usually colleagues, which reinforces lessons learnt and promotes behavioural changes.

They then learn the theory and practice of dementia care and dementia-friendly environments to capitalise on their AR experience. They also receive support in implementing what they have learnt about dementia care and care environment at team or organisational level. For example, Mediva helps to identify problems and solutions in the built environment through the dementia-friendly environment assessment tool and through the AR experience and helps to implement solutions.

Mediva provided the Dementia Eyes AR experience to 147 healthcare professionals and more than 250 members of the public in the first six months after its launch. In feedback from this period, most participants expressed that the AR experience for dementia improved their empathy for people with dementia and led them to see dementia as an issue of concern. Nurses and caregivers noted, "It made me reflect on my care practice," and hospital managers pointed to increased motivation among nurses, with one stating, "I want this to be included in the nursing school curriculum." Comments from those who had experienced ocular dementia were equally positive, indicating a much higher level of awareness and understanding after the AR experience.

Watch the video

3.5 How to create 3D experiences

Virtual reality (VR) software development has become a new way of creating multimedia and entertainment content. And it is being used not only to generate video games. Industries such as automotive, virtual manufacturing and more are applying VR technology to simulate environments to train people and test products in real time. Virtual reality is a technology that attempts to produce computer images and videos to produce real-life visual experiences that go beyond those obtained on a normal computer monitor or phone. VR systems do this by using computer vision and advanced graphics to generate 3D images and videos by adding depth and reconstructing the scale and distances between static 2D images. Let's take a look at the best software in this field.

Sketchfab

Sketchfab is a web-based visualisation, creation and publishing tool for 3D models. With this solution, users can organise models using the tool's collection, tag and category options. The 3D subjects created can be embedded and shared on websites, forums and social media pages. It offers a universal 3D/VR viewer that can be accessed on any browser or operating system without the need to install a plug-in. A mobile app is also available.

With Sketchfab's integrated 3D editor, users can edit model content, adjust lighting, choose camera parameters, add creative filters and more. In addition, you can create a customised 3D configurator and download the app using the Download API extension.

CenarioVR

CenarioVR is virtual reality software that helps organisations create and deliver virtual reality-based training and learning courses. The 3D object editing tool allows trainers to add, rotate, position and animate subjects in GLB file format. The programme provides a built-in media library, allowing content creators to customise pre-designed icons, actions, shapes and objects. Content creators can use the conditional branching methodology to add timed objects, actions, linked scenes, quizzes and hotspots, among other multimedia content. It also allows educators to provide end-users with an immersive learning experience by placing and playing audio clips in specific positions, such as right, left, front or back. It also allows supervisors to generate analysis and evaluate quizzes, answers and feedback in real time.


Visualise it in 3D

3D is a cloud-based software that helps increase sales and reduce returns by visualising products in 3D and augmented reality. The 3D and AR visualiser allows customers to appreciate all the details of a product and its textures to make better purchasing decisions, increase conversion rates and reduce returns. Additional features such as product dimensions, animations, interactive content hotspots, product variants and more can be added. Viewit3D allows companies to manage, create, publish and customise everything. It also allows administrators to track all interactions, analyse customer behaviour and visualise product and campaign performance in real time.

Live tours

The LiveTour software developed by iStaging is a virtual reality creator that allows professionals to create immersive virtual tours and capture any space in 360° VR. The programme can be used to create tours and guided tours of homes, hotels and resorts, landmarks, retail shops and 3D renderings that allow potential guests, buyers, customers, etc. to interact with the locations as if they were actually there.

With LiveTour, users do not need high-end devices or exhaustive technological know-how to create panoramic virtual tours. The app turns compatible smartphones into high-capacity VR cameras to allow users to capture wide-angle views. In addition, it offers spherical footage with up to 8K resolution. This makes virtual tours more detailed, making viewers feel as if they are inside a building and its rooms or in an outdoor environment.
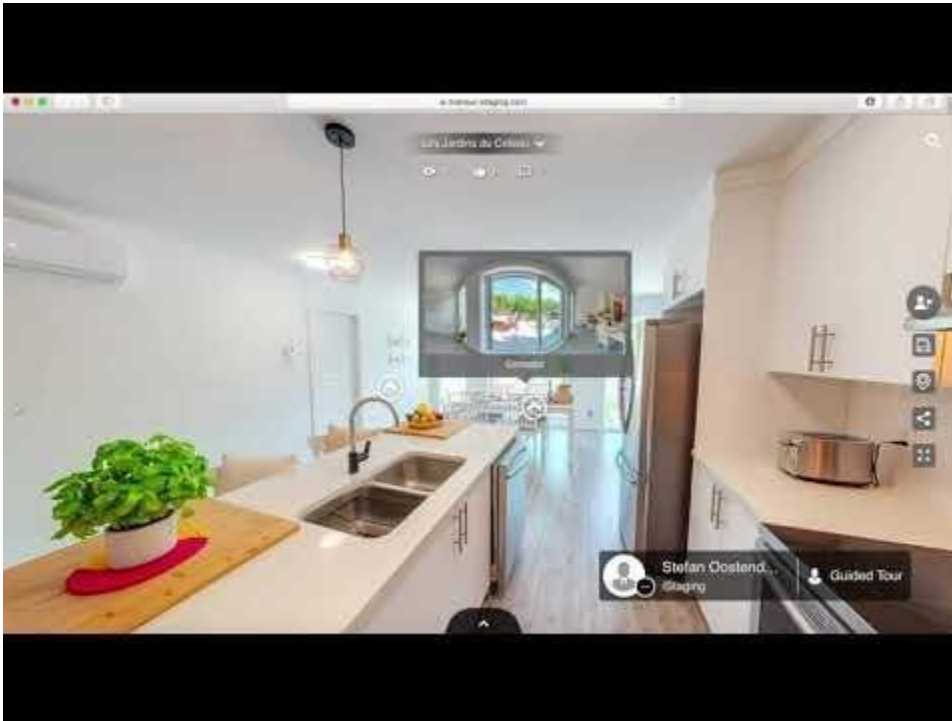
Viar360

Viar360 is a content creation and publishing platform designed to help companies create, conduct and manage virtual training and learning programmes for a variety of industries such as manufacturing, automotive, education, aerospace and healthcare. Organisations can use interactive virtual sessions to induct new hires, convey their mission and provide a realistic experience of the work culture. The solution offers a content management system, which allows users to create, edit and format content using a storyboard or to add interactive elements to individual scenes and media. It offers a range of features such as a visual editor, offline playback, custom HTML5 coding, 360-degree visualisation, decision-based training, analysis and more.

3.6 How to use the 3D viewer - FIRST STEPS WITH THE META QUEST VIEWER

If it is your first time logging into Meta, you need to have a Facebook account to use your device, apps and the app store. You will then be asked to create a Meta account on the first screen of the device setup process in the Meta Quest mobile app. You can also create a Meta account on the web at auth.meta.com.

How to adjust the viewer and set what you see.

First, you have to gently adjust the lenses by moving them first to the left and then to the right until they click into the position that allows you to see the content on the screen most clearly.

Now adjust the side straps. To do this, slide the 2 sliders on either side of the upper strap.

To loosen the side straps, slide the sliders towards the upper strap. To tighten them, slide them away from the upper strap.

After moving the sliders, centre the upper strap between the sliders again, so that the two sides are equal and the upper strap is in the centre of the head when wearing the headset.

Please note that it is necessary to remove headset to readjust the side straps with the sliders.

If you wear glasses, be sure to insert the spectacle spacer. Always wear the headset from the front.

Place the headset over your head, then remove it and adjust the side straps to suit your needs.

After adjusting the side straps, put the headphone back on and adjust the top strap. To adjust, detach the Velcro part and reattach it so that the Meta Quest 2 sits gently on your face and the image is clear.

To further improve the fit and clarity of the headset, gently move the arms on either side of the Meta Quest 2 up and down to adjust the angle of the headset to your face.

Once the visor is set up, follow the instructions in VR and in the Meta Quest mobile app to complete the set-up process.

Watch the video

MODULE 4 - SAFETY

Each individual with dementia has unique needs, preferences and histories that technology cannot fully address. Therefore, while integrating technology into caregiving, it should add to, not replace, the personal attention, empathy and understanding that comes from caregivers.[1]

4.1 What are online security, information privacy, data security and privacy standards

EU Privacy Standard:

The EUs General Data Protection Regulation (GDPR) replaces the Data Protection Directive 95/46/EC and is designed to harmonise data privacy laws across Europe, to protect and empower the data privacy of all EU citizens, and to reshape the way organisations across the region deal with data privacy. The GDPR was approved by the EU Parliament on 14 April 2016. The implementation date is 25 May 2018, at which time non-compliant organisations will face heavy fines. According to Article 4(1), the term 'personal data' means "any information relating to an identified or identifiable natural person; an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, identification number, location data, an online identifier and one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person." Pursuant to Article 4(15), 'health-related data' means 'personal data relating to the physical or mental health of a natural person, including the provision of health care services, which reveal information about his or her state of health'. Counsellors, advisors and therapists should ensure that they collect and store confidential, client (personal) contact and health data in accordance with the GDPR. Some requirements include:

• Consent is required for the collection of personal data. The ability to withdraw consent must be given to individuals. If the data was not collected through a GDPR-compliant process, the individual must be contacted again in order to provide the appropriate consent.

• Personal and health data must be kept safe. This obligation is expressed in general terms, but indicates some reinforced measures, such as encryption. (Source: official GDPR website)[(2)].

Data security refers to the protection of data, such as those in a database, from destructive forces and the unwanted actions of unauthorised users. The definition of privacy standards aims to protect the privacy of citizens' data.

Internet security protection requires the individual to have and apply knowledge of self-protection practices. Online protection of personal and sensitive data (e.g. information

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[1]   https://getjubileetv.com/blogs/jubileetv/dementia-and-caregiving-how-technology-is-empowering-family-caregivers

[2] http://www.eugdpr.org/ - page 49

protection of information and the computer itself refers to ensuring that stored data remain safe (data security). Information privacy, or data privacy (or data protection), is the relationship between the collection and dissemination of data, technology, the public expectation of privacy, and legal and political issues about data. Data security means protecting data, such as that contained in a database, from destructive forces and the unwanted actions of unauthorised users.[3]

4.2 Tips for a responsible and safe use of the Internet

How to apply some basic level of protection to computers, smartphones and electronic devices?

First of all, use the latest version of your operating system and an up-to-date web browser. Antivirus software must also be installed and regularly updated. Attachments such as videos, photos or text files may only be downloaded and opened if they come from reliable sources.

A secure website meets the following criteria:

- The abbreviation https is present.
- The website includes a legal notice/imprint.
- The browser window shows a closed padlock symbol.
- Security in social networks - before starting to use the service, the user must always first read the terms and conditions to find out what data is stored and for what purpose.
- Make sure that no detailed personality profile is generated.[4] Other

useful tips for safety while working on the Internet:

- Never provide personal information such as name, password, address, telephone and other sensitive personal data.
- Never send your own photos or photos of your loved ones.
- Never reply to messages that are offensive, threatening, obscene or make one feel uncomfortable.
- Never open an e-mail received from an unknown sender. It may contain a virus   o   other programme to damage your computer.
- Always be careful when someone offers you something for free or invites you to engage in an activity that promises easy and great profit.
- Be careful when chatting. Remember that people online often pretend and can be who they are not.
- Respect the rights of others on the Internet.[5]

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[3] For more information: https://www.ecounselling4youth.eu/online-material/courses/files/guidelines_en.pdf
[4] https://www.c-and-a.com/eu/en/shop/internet-safety

[5] Read more: https://az-deteto.bg/pravila-za-sigurnost-i-bezopasnost-v-internet-/view.html

4.3 Ethical issues

During the implementation of a programme/service for persons with dementia, several ethical issues may arise, together with corresponding measures to solve or avoid them:

1. Informed consent: Problem: Obtaining informed consent can be difficult due to the sensitive nature of the health condition.

- Action: prioritise building trust with participants/users through clear communication, providing information in accessible formats and ensuring they understand their rights. Allow participants to withdraw consent at any time without repercussions.

2. Confidentiality and privacy: Issue: Maintaining confidentiality should be ensured especially in an online environment as disclosure of information may pose security risks to participants.

- Action: implement robust data security measures, such as encryption and restricted access to sensitive information. Obtain consent to share information with relevant agencies or support services, ensuring anonymity when possible.

3. Safety issues: Problem: Interacting with persons with dementia/families/caregivers may expose them to additional risks in the online environment.

-Action: develop security protocols, including providing participants with information on support services, establishing secure communication channels and offering alternative methods of participation (e.g. anonymous surveys). Prioritise participant safety above all else.

4. Trauma and emotional distress: Problem: Discussing experiences of illness can trigger trauma and emotional distress among participants.

-Action: Provide trauma-informed support throughout the project, including access to counselling services and referral to appropriate resources. Offer participants the opportunity to avoid or postpone sensitive questions and provide clear information on triggers, if necessary.

6. Cultural sensitivity: problem: disregarding cultural norms and values can lead to misunderstandings or perpetuate harmful stereotypes.

-Action: Conduct cultural competence training for researchers, interact with community leaders and experts, and adapt project materials and methods to align with diverse cultural perspectives. Prioritise cultural sensitivity in all interactions and communications with participants.

By proactively addressing these ethical issues and implementing appropriate measures, a project/service addressing dementia can uphold ethical standards, protect the rights of participants and contribute to meaningful and impactful research results.

Types of online services for people with dementia and their carers

Especially during and after the COVID - 19 pandemic, the use of online tools has become very common. People with dementia and/or their caregivers can benefit from a variety of options such as e-health services, online consultation, training and education, and Internet applications. These may include, but are not limited to:

- Virtual reality therapy is an innovative approach that shows promise in improving availability and effectiveness of treatment for illnesses. This therapy focuses on immersive experiences to promote behaviour change, develop coping skills and treat conditions such as chronic pain, anxiety or depression.[6]   Online counselling can be performed by a therapist via telephone, video conferencing and online chat, or a combination of all three methods.
- Recent trends for patients include the use of apps to learn about mood patterns and self-managed mental illness, for example.[7]
- Chatbots for mental health.
- Online support groups for dementia carers can be an emotional support for family carers. In these groups, people receive more than just support: they become part of a community that understands, uplifts, and accompanies them every step of the way. They provide an opportunity to share experiences and gain both emotion and practical support: a place for shared laughter, tears and insight.
- Devices such as remote monitoring and wearable alarm systems are designed to support families with people with dementia, but may also raise concerns about excessive surveillance.

Online services such as online forums, social media groups and video chats allow people with dementia and/or their carers to find and join carer communities from the comfort of home.

Technology should serve to support the person with dementia and caregivers and is not a substitute for human contact. Technology should be a means of empowerment, not a source of isolation, and the focus on care should be maintained. It is also important to apply ethical standards and choose the right technology for the situation of the respected person, ensuring the right tools.

Technology can be incorporated into dementia care by improving safety and care with empathy.[8]

MODULE 5 - PROBLEM SOLVING USING DIGITAL TOOLS

Caregiving support is limited and fragmented, which can worsen the health impact associated with caregiving, particularly for families living in marginalised communities. It is essential to support

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[6]   https://www.betterhelp.com/advice/therapy/therapy-and-counseling-a-new-age-of-technology-approaches/

[7] Williams, M. 10 trends for insights/10-trends-for-technology-in-counseling-and-psychotherapytechnology in counselling and psychotherapy. https://www.wolterskluwer.com/en/expert-

[8]   https://getjubileetv.com/blogs/jubileetv/dementia-and-caregiving-how-technology-is-empowering-family-caregivers

marginalised caregivers from different backgrounds and improve accessibility and usability of technological tools, as few public and private institutions support the caregiving process. Although digital tools are increasingly used in caregiving, the majority of caregivers do not use them. According to various analyses and sources, only 7% of caregivers currently use or have used available technology to support their caregiving tasks. Considering the challenges faced by family carers and their lifestyles, one possible solution is to digitise the caregiving process. Besides providing daily support, digital tools can also help solve problems. Although COVID-19 has created many challenges worldwide, it has accelerated the need digital use.

Digital tools and caregivers can help manage appointments, medication, schedules and medical records. It is important to find a tool that is easy to use and meets the specific needs of the family carer. Furthermore, the important question is whether the carer has experience in using the device or has the ability to learn. Today's technology is designed to be intuitive, friendly and easy to use. However, if a person has no experience in using a specific technological device, trying to do so may cause frustration, anxiety or discouragement.

The digitisation process can be supported by various tools such as:

1. Watches and calendars with assistive technology

2. App for caregivers

3. Remote assistance and communication systems

4. Smartphone

5. Voice memos

6. Service team calendar

7. Digital calendars and Excel files

8. Online support groups for caregivers

5.1. Watches and calendars with assistive technology

Assistive technology provides a range of clocks and calendars that can help you keep track of time, days and months. When used in conjunction with a noticeboard and diary, they can be useful for managing appointments, social events and daily activities, such as remembering that bins are collected on Tuesdays.

These clocks and calendars have more advanced features, such as playing pre-recorded messages at specific times set by you or your family. These messages can serve as reminders to take medication or take out the bins and can be played back up to 20 messages per day.

5.2. App for caregivers

Caregiver apps are digital assistants that help them manage appointments, medication schedules and medical records. It is crucial to find user-friendly family caregiver apps, such as a care calendar, that provide a platform for care schedules, medical information and communication between family members.

Family caregiver medication apps: these apps support the family caregiver to monitor the daily medication or supplements of the elderly relative with a simple tap on the phone. Medication management apps help caregivers keep track of their loved one's medications, dosages and schedules. These apps can send reminders to the caregiver and the patient when it is time to take medication. Many apps can be used, but the best apps for caregivers used in 2024 are:

Featured App: [Medisafe](#) manages medication and includes medication reminders with alerts, notifications when prescriptions run out, medication interaction alerts and more. This app is highly rated by users, caregivers and reviewers and has been awarded the coveted 'Editor's Choice' title in the Google Play Store. It is the perfect solution for those who juggle multiple medications and shines when sharing reminders with others.

The best feature for carers: Medisafe is like a digital assistant that alerts you when it is time for your elderly parent to take their medication. Not only that, but this handy app also allows you to keep track of whether the medication has actually been taken. It's like having an extra pair of eyes on their health right in the palm of your hand.

5.3. Remote assistance and communication systems

Remote care systems are a recent development that has proven very effective in connecting caregivers with their elderly loved ones, particularly when they are away. The Jubilee TV app is one such system that allows family caregivers to communicate with their elderly relatives through video calls and photo reminders, all directly on their TV screens. In addition, the app also allows caregivers to control the TV, which can be a huge time-saver and stress reliever.

5.4. Smartphone

Smartphones can help health workers ensure that important tasks are completed. Can't remember if you turned off the cooker or took your medication? Just check the app for a tick. In addition, the app can send e-mails to loved ones to confirm the completion of tasks.

Iridis (free) is a free tool designed specifically for carers who wish to create a comfortable environment for people diagnosed with dementia. It is called a 'dementia design audit tool' that assesses the space and presents a detailed report with recommendations such as colour contrasts and lighting improvements that could significantly improve safety and comfort for your loved one.

Carezone (free) is a useful tool for efficient care management. It is particularly useful for people in the early stages of dementia and for caregivers during the later stages. The app easily organises medication lists, sets reminders on when to take them, orders refills and keeps track of doctor appointments.

5.5. Voice memos

Voice reminder devices allow caregivers to customise reminders for their loved ones with dementia. Some voice-controlled technologies allow caregivers to schedule a reminder at designated times, while others work via motion sensors. Devices that work through motion detection can be very useful for those who are prone to wandering, as family members can pre-record a message reminding their loved one to refrain from leaving the house at night when they approach the door.

5.6. Service team calendar

A CARE team calendar is a customised online tool designed to simplify the care process by organising the family and friends involved in the care team. This tool simplifies the sharing of tasks and information with the care team by posting things for which assistance is needed and team members can be aware of specific tasks and problems.

5.7. Digital calendars and Excel files

Digital calendars can be very useful for carers by including all activities, allowing them to know exactly what needs to be done and which activities need to be undertaken, such as:

- Medical examinations;
- Shopping assistance;

- Social time;

- Drug programme;

- Household chores;

- Managing finances, paying bills, budgeting, etc.

5.8. Online support groups for caregivers

The Caregiver Online Support Group is a platform where caregivers can connect with others who are facing similar challenges and can offer advice to overcome common caregiving difficulties. This group operates via e-mail, allowing participants to send and receive messages to participate in discussions, share their experiences, give advice and other valuable tips. The frequency of e-mails can vary from daily to daily depending on the needs of the caregivers.

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