



Adult education on **digital**, **health** and **data** literacy for citizen empowerment

**Information for formal and informal
educators and policy makers**



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ABOUT THIS PUBLICATION

This report summarises the results of the research activities carried out in Portugal, The Netherlands, Spain, Romania and Germany within the Erasmus+ project **TRIO: Adult education on digital, health and data literacy for citizen empowerment** (cooperation partnerships in adult education programme under grant agreement no. KA220-ADU-1B9975F8.). More information is available at <https://trioproject.eu/>.

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1. Information for formal and informal educators and policy makers

1.1 Results of the desk research

Age, education level, income, and employment all influence digital, health, and data literacy rates in Europe. Even though proficiency levels may vary significantly per country, these disadvantaged groups remain the same. For digital literacy the biggest determinant is age, for health and data literacy it is education. It must be noted however, that not all people that have problems in one of the three literacies, experience these problems in the same areas. For instance, while individuals over 70 may have trouble understanding medication labels and prescriptions, people that are 10+ years younger experience more difficulty comprehending health terminology. These differences in skill levels have not always been investigated thoroughly, but are likely to exist for all literacies among all socio-economic and demographic variables.

When talking about digital health data literacy combined, **the most vulnerable groups are older individuals, low educates, and people with a low health status.** In general most difficulties are perceived in finding reliable health information online, understanding the terminology used in health-related topics, and distinguishing high-quality from low-quality information. Although not all groups experience the same difficulties, people with a low health status score lowest in all eHealth skill categories. Also, other studies have linked low health literacy with poor health status and, in



addition, less frequent use of preventive services¹. Since poor health literacy is more prevalent among older people and low educates, these groups also have a higher percentage of people with a health condition, who in turn may be less able to seek the appropriate care. At a higher age, this problem becomes multifold, since health tends to deteriorate with age and proper health-related decisions become more crucial.

Other socio-economic factors that have a negative impact on (e)Health information literacy are low income and unemployment. Low-skilled jobs are currently being replaced by the digitalisation of society. The people that worked these jobs often cannot compete on the job market, because of their lack in skill and knowledge, and risk becoming unemployed. Individuals who have been unemployed for a longer time will have more trouble finding work, and this often includes people with a low education and individuals close to retirement age; two groups with lower digital, health, and data literacy skills in the first place. Research has

¹ Enwald, H., Hirvonen, N., Kangas, M., Keränen, N., Jämsä, T., Huvila, I., & Korpelainen, R. "Relationship between everyday health information literacy and attitudes towards mobile technology among older people". In *European Conference on Information Literacy*, 450-459. Springer: Cham, 2017.

shown that poor and unemployed individuals experience social isolation much more often (along with seniors) and receive less informal help when needed. Employment can protect people from this and being socially included protects people from unemployment. Another study has found that exposing unemployed individuals to poverty increases the social participation gap between employed and unemployed individuals. Low income and unemployment have also been linked to poor functional literacy; it is challenging for people with low functional literacy to find a well-paying job, or a job at all. On top of that, being unemployed tends to negatively affect literacy skills, worsening the problem. It is therefore vital that poor and unemployed individuals stay included in society, receive financial support, and are given the opportunity to enhance their skill levels.



Currently, the biggest health concern in Europe is the growing amount of people with overweight. Rising obesity rates do not only have severe health consequences for individuals, but also heavily increase healthcare expenditure. Poor nutrition and inactive lifestyles are the main reasons for this alarming trend, but as studies have shown, these are not solely individual matters. **There are many elements that influence a person's health-**

related choices, including social circumstances, financial constraints, time-pressure, and the area where households are located. This may also be one of the reasons why people with a low education or a low income are more likely to be overweight. The promotion of better health choices should therefore be aimed at whole communities and be accommodated by making healthy options accessible, affordable, and practical.

In addition, gender differences in nutrition and lifestyle choices should be taken into account. Obesity rates are more prevalent among women, although overweight rates occur more among men. It is important to understand the root of this issue, so that adequate health promotion information may be given to the right groups of people. Although women are overall more concerned about their looks and their health, and therefore more inclined to make healthy food choices, women also tend to consume more food with added sugars. Research has indicated that the consumption of sugar and processed foods have a substantively significant and negative impact on BMI levels. In addition, physiological differences make it more challenging for women to lose weight. By adequately informing people about these issues, their food- and health promotion literacy may increase.

Identified gaps

There are several socio-economic and demographic factors that influence digital, health, and data literacy skills:



For older individuals, the biggest problem is their inexperience with digital technology. Older people have more trouble with ‘knowing how to navigate the internet to find health information’, ‘knowing how to use health information found on the internet’, and ‘distinguishing high quality from low quality information on the internet.’ These problems can mostly be explained by the older generation’s lack of digital skills. In fact, older people seem to be much better at understanding health terminology than younger people, who in turn have much less experience dealing with the healthcare system.



People with a low education experience most difficulties in ‘knowing how to navigate the internet to find health information’, ‘understanding health-related terminology, and ‘distinguishing high quality from low quality information.’ The problems for this group are often multifold; they have a higher chance to have a low income, be unemployed, face social isolation, and be functionally illiterate. Additionally, low educated are more likely to have unhealthy lifestyles and be overweight, caused by poor health promotion literacy and unavailable healthier options.



People with a migratory background face similar problems. They have more chance to have a low education and income, more chance to be unemployed, and they may experience culture and/or language barriers when it comes to accessing and understanding (digital) health information.



Individuals with a low health status have more difficulty in ‘knowing how to navigate the internet to find health information’ and ‘knowing where to find reliable health-related information on the internet.’ In multiple studies individuals with poor health have been assessed as having the lowest health literacy. Health literacy has also been connected to health behaviour. People with low health literacy have a much higher chance to make poor health choices and therefore have a higher risk to develop non-communicable diseases.

Identified needs and demands



Mobile technology should be accommodated to older individuals so they may be able to use this technology to improve their health. Current mobile technology is made by and for younger people, which marginalises older generations and excludes them from properly using health-related applications that could benefit them significantly. If digital technology would be more adapted to older individuals, they would be more inclined to use digital services or devices and therefore gain experience and confidence, both of which have proven to improve everyday health information literacy.



Healthy nutrition and lifestyle choices should be made accessible, affordable, and practical. Health promotion information needs to be catered to the specific needs of different socio-demographic groups and preferably aimed at whole families, communities, or neighbourhoods. All health information should be easily accessible and be

written in easy to understand language. Additionally, it should be known to people where to find reliable information for the health topics that are relevant for them.



More awareness is needed on the problem of low functional literacy and what this means for the people themselves. Low literacy often goes unnoticed. Many adults do not recognise their own shortcomings, and instead evaluate their skills as average. Others are ashamed or do not think improvement is possible. These individuals have learned to hide their inability and are difficult to persuade to participate in an educational program. Awareness may help them overcome their feelings of shame so they may be more inclined to seek help. In addition, medical professionals should be educated on how to best convey health information to low literates and educational material should be easily accessible.



Lastly, it is necessary for digital devices such as computers, laptops, tablets, and mobile phones to be financially available to people. For unemployed individuals, people with a low income, or those living of a pension, such devices are often too expensive. It could help to ensure free access to computers in public libraries or community houses, or to redistribute second-hand equipment to people that need it.

Suggested learning needs



Training material needs to be adapted to the specific needs of socio-economic and demographic groups. These needs are tied to economic, political, cognitive, and individual aspects, and therefore differ per country. Additionally, people often lack proper motivation to follow an extensive learning course. Educational material should therefore not only be adapted to a person's needs, but also to their ambitions. For instance, to combat low functional literacy it may help to set specific goals for people, like being able to write a good resume, helping your children with homework, or reading bedtime stories to your grandkids. This methodology was used in *het Taalhuis* in the Netherlands and has proven to work well. Also a Norwegian study² found that low-skilled learners are more motivated by these so-called 'extrinsic motivators'. In addition, 'extrinsic demotivators' need to be avoided. These include the lack of support and encouragement, or the lack of opportunities in the labour market.

² Windisch, H. C. "Adults with low literacy and numeracy skills: A literature review on policy intervention." *OECD Education Working Papers* 123 (2015), OECD Publishing: Paris. <http://dx.doi.org/10.1787/5jrxnjdd3r5k-en>.

These are the results of the desk research done for the European report. You can find the results per partner country in the national reports and national summaries on the [TRIO website](#)



1.2 Results of the workshops



In February and March 2023 all partner countries (Germany, the Netherlands, Portugal, Romania, and Spain) organised co-creation workshops with participants from three different age groups (18-35, 36-50, and 50+). The goal of the workshops was to involve citizens in the construction of the learning material and to further analyse the current needs in terms of digital health information

literacy. For this purpose a card game was developed. The first part of the workshop focussed on the main difficulties that people perceive in digital, health or data activities.

The results varied per country and per age group, but some areas were clearly perceived as more problematic than others, regardless of country or age. Most difficulties were experienced in the following areas:

- **The ability to identify which eHealth services are available.**
- **The ability to identify the reliability of online health information, health apps or online stores.**
- **The ability to understand medical diagnoses or test results.**
- **The ability to apply health information in everyday life.**

These results correspond to the results of the desk research; in a study on eHealth literacy³ most difficulties were perceived in: 'knowing how to navigate the internet to find health information' and 'knowing how to use health information found on the internet'.

This is a short summary of the results of the workshops. You can find the full results per partner country in the workshop summaries on the [TRIO website](#).



³ Vicente, M.R. & G. Madden. "Assessing eHealth skills across Europeans." *Health Policy and Technology* 6, no. 2 (2017): 161-168. <https://doi.org/10.1016/j.hlpt.2017.04.001>.

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