World Health Organization

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Health literacy in the context of health, well-being and learning outcomes – the case of children and adolescents in schools

Concept paper

ABSTRACT

Heath literacy, the ability of individuals to understand, critically appraise and use information related to their health, is an important component of education and has become more prominent during the COVID-19 pandemic. Approaches to improving health literacy education in schools are lacking in many European countries. This report makes the case for including health literacy education in schools, classrooms and professional education and training to the benefit of the education and health sectors, and suggests ways this can be achieved. The report: provides a brief overview of evidence on health literacy in children and adolescents; highlights the critical role of the education sector as beneficiary and implementer; places health literacy in schools within the wider WHO health literacy strategy and the whole-school approach; identifies key health literacy learning objectives and indicators; and suggests action opportunities for implementation and evaluation of health literacy in schools.

Keywords

HEALTH LITERACY
HEALTH PROMOTING SCHOOLS
CHILD AND ADOLESCENT HEALTH
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Executive summary

Heath literacy, the ability of individuals to understand, critically appraise and use information related to their health, is an important component of education and has become more prominent during the COVID-19 pandemic. Approaches to improving health literacy education in schools are lacking in many European countries. This report makes the case for including health literacy education in schools, classrooms and professional education and training to the benefit of the education and health sectors, and suggests ways this can be achieved.

Health literacy is a key competence students need to acquire in school. Health literacy learning in schools has to:

- be accessible for all
- be relevant and learnable for all
- meet complex demands in a variety of contexts and across multiple areas of life
- benefit individuals and societies
- involve taking a critical stance, requiring creativity and reflective practice
- contribute to the core values of democracy, human rights and sustainable development.

School health promotion and education are critical means of strengthening health literacy of students and education professionals. Curriculum and programme development are important in structurally embedding health literacy in educational frameworks, ensuring that all children and adolescents:

- obtain sufficient knowledge and understanding about health issues;
- develop and use a broad range of health-related skills and competencies, including the ability to navigate in digital contexts;
- are able to make critical judgments about health and appraise the reliability of health messages across different communication sources;
- learn to act in an ethically responsible way in health matters within a diverse and changing world;
- become aware of their own needs, perceptions, wishes and preferences in relation to physical, mental and social health and well-being; and
- participate in influencing and carrying out decisions and actions that impact their health, that of others, the wider society and the environment.

The delivery of health literacy depends on the characteristics of the education systems of Member States. Educational health literacy approaches in schools have to be adapted to the national educational system, goals, curriculum, concepts and programmes already in place. The following four dimensions need to be kept in mind when introducing health literacy to a national education system:

- the extent to which health promotion and education is integrated in the curriculum;
- the distribution of decision-making regarding the curriculum;
- the organization of teaching and teaching methodology across national, district and school levels; and

- which sector is responsible for the delivery of health promotion and education – education (teachers), the health care sector (nurses and doctors), or both?

Some countries already have a focus on heath literacy in education. Teaching health literacy has been an essential element of Finnish mandatory education since 2004, with a distinct curriculum spanning all class levels and designated time allocated in timetables. This is applied according to a detailed curriculum spelling out the target priorities, themes and competencies at class level.

Germany does not have a mandatory health education curriculum, and health is not a mandatory school topic. Health, including health literacy, sometimes is a cross-cutting issue in schools that is addressed in various subjects. Standards developed in the context of digital education and media literacy can facilitate health-literacy goals.

A structured approach is suggested to improve health literacy in any given country or setting. This can be used in all education contexts and consists of the following components.

A **situation analysis** identifies what is already in place, such as existing school curricula for health education, how much time is allocated and at which grades, and who is responsible for delivery – teachers, or nurses and doctors?

Stakeholder involvement should include all pupils, teachers, school staff, parents, health workers, administrators and politicians.

Based on this, a national or regional **plan** can be drawn up covering the curriculum, workforce and financing.

Implementation should include a pilot phase and later scaling up.

Evaluation needs to be planned up front. The results should inform adjustments, looking at processes as well as effects.

Addressing the health literacy of children and adolescents in schools will help not only to strengthen their learning, but also improve their health and well-being and life-long learning across the life-course by enabling them to address and solve health issues.

Education systems are facing challenges through globalization, climate change, digitalization and, most recently, the impact of the COVID-19 pandemic. Health literacy can enable children and adolescents to understand why viruses like coronavirus are so dangerous, what they can do to protect themselves and others, and how they can deal better with the public health measures and the consequences to their health

Curriculum and programme development are important for structurally embedding health literacy in education frameworks. The European action plan for health literacy currently under development will help systematically to develop, implement and evaluate health literacy activities in the education sector. Strengthening health literacy of children and adolescents and social and systemic support at all levels relevant to them will contribute to improving health and promoting educational, social and sustainable development.

Introduction

It is important to address health literacy of children and adolescents as a health and education target early in the life-course *(1)*. WHO recognizes health literacy as an asset for children's personal, social and cultural development *(2)*. Health literacy is an important and modifiable determinant of health, linked to greater empowerment, health equity and achieving the United Nations Sustainable Development Goals (SDGs), and ultimately is a significant enabler for developing better health and well-being over the life-course *(1,3,4)*.

Investment in the health and well-being of children and adolescents through improved health literacy is a core public health issue and should be embedded in health promotion and prevention strategies. Addressing the health literacy of children and adolescents from an early age onwards will benefit their present health, their later adult health and the health of the next generation. As a key outcome of health education *(5–7)*, achieving health literacy competencies should in particular be targeted in schools in the WHO European Region *(8,9)*. The education sector co-benefits from addressing health literacy in schools *(10)*; investment in health literacy therefore should be supported by cross-sector policies, programmes and action.

The main goal of this report is to inform decision-makers in health and education by:

- providing a brief overview of evidence on health literacy in children and adolescents;
- highlighting the critical role of the education sector as beneficiary and implementer;
- placing health literacy in schools within the wider WHO health literacy strategy and the whole-school approach,
- identifying key health literacy learning objectives and indicators; and
- suggesting action opportunities for implementation and evaluation of health literacy in schools.

Health literacy: meaning and relevance

Defining health literacy and setting the scope for action

Health literacy is the ability to access, understand and use information to promote and maintain personal and community health by changing personal lifestyles and living conditions *(2).* Newer definitions encompass critical appraisal of health information and critical thinking about health claims as core components of the conceptual framework of health literacy *(6,11)*, which is also reflected upon by the term critical health literacy *(12)*.

The 2019 roadmap to strengthen health literacy in populations within the WHO European Region *(13)* defines health literacy as the capacity of people to act as informed participants in decision-making about health and development. Health literacy is an asset for

health and a set of capacities with which children and adolescents can pursue their full health potential. In this context, health literacy empowers children and adolescents and enables their agency, participation, autonomy and freedom in health matters.

Taken together, this reflects a need to develop competencies that support individuals' abilities to participate in decision-making processes in various aspects of life. As has been highlighted by the United Nations in the context of the SDGs *(14)*, young people today should be acknowledged as critical thinkers, change-makers, innovators, communicators and leaders. These are critical for health, are linked to health literacy, and support young people's growth and development as responsible citizens and their efforts to promote health and achieve a sustainable future. The Fridays For Future climate movement demonstrates that today's children and adolescents are empowered advocates and activists for planetary health and saving the natural environment. They are critical thinkers who are civically engaged in driving protests against global warming, carbon emissions, unsustainable exploitation of resources and governmental failures to intervene and address climate change. The younger generations are significant actors, able to participate actively in shaping a better future for health equity and managing health crises.

To support the younger generations to adopt these roles and achieve their full health and human potential, all children and adolescents need:

- knowledge and understanding about health issues;
- a broad range of health-related skills and competencies, including skills needed to navigate in virtual environments and digital contexts;
- the ability to make critical judgments about health and appraise the reliability of health messages across different communication channels;
- to be able to act in an ethically responsible way in health matters within a diverse and changing world;
- to become aware of their own needs, perceptions, wishes and preferences in relation to physical, social and mental health and well-being; and
- to be able to participate in influencing and carrying out decisions and actions that impact their health, that of others, the environment and wider society.

Digital health literacy

Globalization and digitalization change the ways in which health is negotiated and promoted. Health information is almost limitlessly accessible in everyday life, including through the Internet, social media and online platforms, making (digital) health literacy competencies for school-aged children even more critical *(4)*.
New challenges and risks that affect health and health communication arise from digital transformations of societies. Health literacy is a critical tool in managing the overload of information available through digital communication channels; this is especially important for children and adolescents, who increasingly are turning to the Internet and social media as sources of health information and media through which to communicate about health issues *(15)*.

Issues related to health literacy and the COVID-19 pandemic are considered briefly in Box 1.

Box 1. Health literacy and the COVID-19 pandemic

The COVID-19 pandemic underlines that globally, health literacy serves as a protective means of decreasing the spread of communicable and noncommunicable diseases *(15)*, appropriately dealing with health information, navigating the so-called information epidemic (also known as the infodemic), identifying fake news and disinformation about coronavirus and COVID-19, and avoiding unnecessary risks *(16,17)*.

Health literacy, especially critical health literacy, empowers people to critically judge the anti-vaccination, anti-mask and related movements and to think beyond their own personal perspectives. Health literacy enables children and adolescents to reflect critically about their own health behaviours and adapt personal behaviours to reflect changing circumstances and requirements emerging from control measures as the pandemic progresses.

Health literacy is also about being able to apply remedial action to issues such as physical activity and eating. There is an increasing demand to be competent and knowledgeable in dealing with the effects of the pandemic in everyday life to stay physically and mentally healthy. It therefore is of the utmost importance to address health literacy in schools, particularly in health education, to increase the health literacy capacities of all children, adolescents and education professionals to achieve the best possible compliance with protective measures.

Teachers and schools will need access to digital technology and related infrastructure to teach digital health literacy competencies and familiarize children and adolescents with the challenges, opportunities and risks attached to the emerging digital world (such as social media, networks, apps and games). As engagement with the digital world among children and adolescents increases, this becomes essential for health literacy. Digital developments should be addressed by the education sector and in schools, which will need teachers trained to deliver this kind of education.

A school survey from Germany on digital health literacy among students in grades 7–9 found that 41% had difficulty finding health information online, another 44% had problems evaluating the reliability of health information from online sources, and 44% of all students reported experiencing difficulties in using health information in their everyday lives *(18)*.

Health literacy contributes to improving child and adolescent health

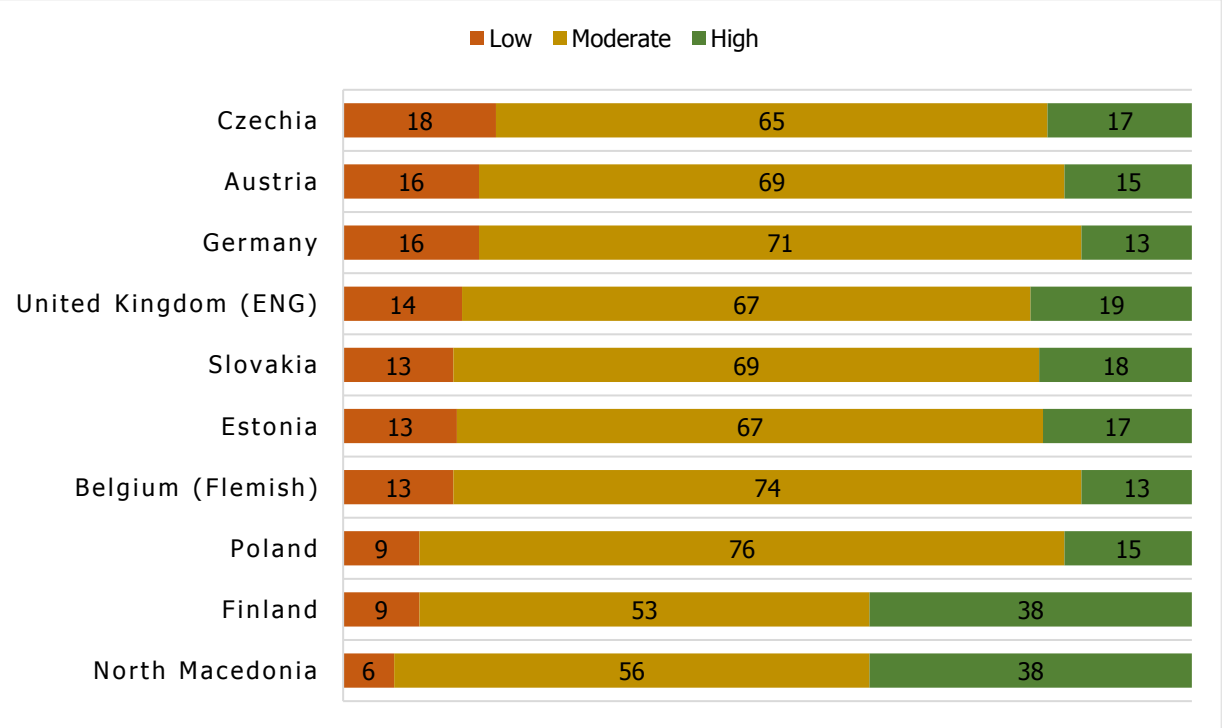
Childhood and adolescence represent key periods of life for addressing health, social and educational development and for developing competencies and health behaviours that may affect health and well-being over their life-span and into the next generation *(19)*. Until recently, however, child and adolescent health has been overlooked *(20)*. Evidence shows that the burden of disease in child and adolescent health has undergone a shift from acute and somatic diseases to chronic conditions (including mental health problems and psychosomatic illnesses) in almost all European countries *(21,22)*; health disparities are evident and present a severe threat to health outcomes *(23)*. As a modifiable determinant of disparities in health *(4)*, health literacy enables the modification of health inequalities *(1)*.

Evidence on child and adolescent health literacy

The evidence base on adult health literacy has been developed over the past three decades. Research on child and adolescent health literacy emerged in the late 2000s. Evidence relating to children and adolescents is limited, although studies across the world in recent years have contributed to a growing evidence base. Higher levels of health literacy in children and adolescents have been associated with practising healthier behaviours, and achieving better health outcomes and better health status *(9)*, making health literacy an important target for health and education interventions early in life.

Work that was progressed as part of the WHO collaborative Health Behaviour in School-aged Children (HBSC) survey of 2017/2018 offers comparative findings from 10 countries/regions (Austria, Belgium (Flemish), Czechia, Estonia, Finland, Germany, North Macedonia, Poland, Slovakia and United Kingdom (England)) on adolescent health literacy levels *(24)*. On average, 13.3 % of adolescents (aged 13 and 15 years) were found to have low health literacy and 19.5 % high health literacy, with wide variations within and between countries (Fig. 1). The proportion of adolescents with low health literacy varied from 6% to 9 % (North Macedonia, Finland and Poland) to 16–18% (Germany, Austria and Czechia), and with high health literacy from 13% to 15 % (Germany, Belgium (Flemish), Austria and Poland) to 38% (Finland and North Macedonia). The next data collection wave of the HBSC survey is planned for 2021/22.

Fig. 1. Health literacy levels of school-aged children in Europe (percentages, rounded)



Source: Adapted from Paakkari et al. *(24).*

Two surveys among children in the fourth *(25)* and sixth grades of schools *(26)* found that children have very high levels of health literacy and report that finding, understanding, evaluating and using health information is easy. No gender differences are found in most studies, but girls in primary school in Germany *(25)* and female adolescent students

in secondary schools in Estonia, Lithuania, North Macedonia and Poland *(24,27)* had higher levels of health literacy than their male counterparts.

Most of this evidence was generated through cross-sectional methods, which allow fairly quick data collection from large population groups. They do not, however, allow a causal relationship to be determined or detect how health literacy develops or changes. There is a need for longitudinal studies to provide more in-depth and long-term evidence on health literacy in childhood and adolescence to better understand how health literacy capacities develop, what affects their development, where health literacy processes and practices are relevant to children, how they are used and what changes occur over time as children and adolescents grow.

Health equity and child and adolescent health literacy

Research into adult *(28)*, child *(9)* and adolescent *(24)* health literacy shows it is distributed unequally across sociodemographic groups in Europe, confirming a social gradient in low health literacy. As health literacy contributes to differences in health outcomes and is related to educational outcomes such as academic achievement and educational aspirations, these observations suggest that pupils with non-academic plans, low school achievement and low health literacy not only fall behind in their schooling, but also fail to achieve their full health potential *(29)*.

These are worrying findings that call for greater public health and policy action to address the root causes of inequities in health, education and development, including equity-based health literacy approaches in early childhood *(30)*. Health literacy can be seen as an important means of reducing health inequities, as it can be changed and improved by education and learning to reduce avoidable health disparities *(4,12).* The WHO Commission on Social Determinants of Health of 2008 stressed the importance of addressing health literacy and recommended action to sustain optimal development beginning early in life *(31)*, suggesting that people in vulnerable situations need policies in place to respond to the level of disadvantage they experience.

Health literacy action plan for the WHO European Region

Health literacy is recognized as an important public health and health policy imperative in Europe through the WHO Regional Committee for Europe resolution on implementation of health literacy initiatives through the life-course *(32)* and the draft WHO roadmap for health literacy *(13)*. The roadmap addresses the inclusion of health literacy in the policies and agendas of European governments, communities, organizations and individuals by suggesting five strategic directions to implement action on health literacy:

- increasing capacity-building in health literacy
- advocating and facilitating cross-sectoral integration of health literacy
- advancing development and implementation of health literacy initiatives
- improving digital health literacy
- strengthening the measurement, monitoring and evaluation of health literacy.

Overall, these action areas are essential for addressing child and adolescent health literacy and provide intersections that can be addressed by education systems and schools to promote the health literacy of school-aged children.

Making the case for health literacy in schools

Many countries in the WHO European Region already address the learning of health knowledge, health skills and competencies, health attitudes and health behaviours in the context of health promotion and health education efforts in schools. Health literacy is not synonymous with health promotion and health education and will not replace them; rather, it is a tool that can be used in an action-oriented way to address health information, solve health problems and promote health and well-being. Time and resources are needed to make this work, especially in the context of digital media environments and communication technologies.

The education sector and schools offer an ideal setting for facilitating and enhancing the health literacy of children and adolescents, as they reach almost all school-aged children *(8)*. The school setting allows long-term implementation of health promotion activities and health education measures to strengthen health literacy sustainably. Activities can be designed to meet the needs and demands of different age groups and children with special educational needs, and to reflect issues related to gender, diversity, ethnicities, and cultural and social (minority) groups *(7)*. Co-benefits of school interventions are also associated with increased cost–effectiveness and positive societal and population health outcomes *(10)*. As Paakkari et al. *(8)* summarize:

> The education sector should be seen as a key agent and the primary driver for developing health literacy approaches that are tailored to its curriculum, standards, techniques, classroom teaching and learning objectives and outcomes, as well as its core educational tasks, practices and goals.

The importance of health literacy in schools

For many years, WHO has emphasized the relevance of health literacy in schools, including early promotion through health education in schools and curriculum development *(1)*, linking health literacy with, and embedding it within, whole-school approaches *(3)*, and highlighting material co-benefits for the education sector and society linked to addressing health literacy in schools *(10,33)*. In addition, the Organisation for Economic Co-operation and Development has identified health literacy as a core competence for the 21st century and a critical target to enable education to empower citizens to increase control over their health *(34).*

Health and education are linked inextricably; delivering health literacy through schools has many co-benefits for society, such as economic and social growth, health behaviour and outcome-related improvements, and academic and education-related benefits across the life-course *(10)*. Policy support is critical to facilitating the uptake of health literacy in the education sector, but school programmes addressing health literacy are rare, with only a few countries paying attention to health literacy in their health education curriculum or school health promotion strategy *(35).* This paradox recently has been addressed

through the European standards and indicators for health promoting schools developed by the Schools for Health in Europe (SHE) Network Foundation *(36)*. One of the standards aims to outline challenges and opportunities in addressing the health literacy of school-aged children within the education sector.

The core task of schools is to deliver education. Goals pursued by education and schools overlap with those of health literacy and are related. Common goals include helping children, adolescents and young people to grow into critical thinkers and problem-solvers, to be ethically responsible, autonomous and independent, to be life-long learners and empowered citizens, and to be able to make informed decisions about their own lives and health and that of others *(6,7,9)*.

Strengthening dialogue between the education and health sectors reinforces the common aims of education and health literacy. Attaching health literacy to the school culture, curriculum, classroom teaching, and learning objectives and outcomes requires acknowledgement of core educational tasks, practices and goals, the use of concepts, programmes, methods and mechanisms already in place, and close collaboration with schools, principals, teachers, educationalists and education staff *(7).*

Differences in country education models

Education systems in the 53 Member States of the WHO European Region vary in terms of organization, administration, governance, policy and resource allocation. Contextual variations such as these have a direct bearing on the way health literacy has been, or may be, introduced at national and local levels. There cannot be a one-size-fits-all approach; the delivery of health literacy depends on the specific characteristics of the diverse education systems of Member States. Health literacy has to be adapted to the national education systems, goals, curricula, concepts and programmes already in place.

Among the many variables, three dimensions are essential to keep in mind when introducing health literacy to a national education system:

- the extent to which health promotion and education is integrated within the curriculum;
- the level of decision-making regarding curriculum, organization of teaching and methodology at either national, district or school levels; and
- variation among Member States concerning which sector is responsible for the delivery of health promotion and education, whether the educational sector (teachers) or the health-care sector (school nurses), or both, in collaboration.

When national or regional authorities responsible for health education and promotion in schools decide to include health literacy in their workplans, local contexts need to be taken into consideration.

Country examples related to health literacy in schools

Health literacy can be addressed and taught in several ways, either through health education as a school subject or as cross-curricular themes that run through various subjects.

This section presents two country examples with a special focus on the health literacy competencies seen as relevant in each country.

Finland: health literacy taught in the school subject health education

From 2004, health literacy has been taught through an independent and mandatory school subject called health education. In grades 1–6, health education is taught as an independent component in a cluster of subjects which share a joint allocation of lessons. In grades 7–9 there is an average allocation of one lesson per week, and general upper-secondary school health education is a stand-alone subject with one obligatory course and two free-choice courses . Health-related competencies are also taught via cross-cutting themes running through all school subjects.

The conceptualization of health literacy *(6)* serves as a theoretical framework for formulating the goals for instruction and learning in the health education subject in the current national school curriculum, and is seen as a set of knowledge and competencies that people seek to encompass, evaluate, construct and use. Health literacy enables pupils to understand themselves, others and the world in a way that will enable them to make informed health decisions and work on (and change) the factors that constitute their own and others' health chances. Five broader health literacy competencies are covered (see left column of Table 1).

Health literacy and health topics are handled through selected themes in the national core curricula for basic education and general upper-secondary school:

- grades 1–2: growth and development; acting at home and at school; reflecting on the basic necessities of life; practising a sustainable way of living;
- grades 3–6: me as a human being; acting in situations and communities of daily life; building a sustainable future;
- grades 7–9: growth and development supporting health; factors supporting and harming health and prevention of illness; health, communities, society and culture; and
- upper-secondary school: health as an asset; health and environment; health and society.

Table 1. Key competencies and examples of corresponding learning goals in Finland

HL component *(6)*	**12 years (grade 6)**	**15 years (grade 9)**
Health-related theoretical knowledge: basic factual information, concepts and principles related to health that one is able to memorize, name, list or describe	The pupil is able to: describe key concepts associated with well-being and safety using examples; describe aspects of health; and explain key characteristics of growth and development in puberty and their individual variations	The pupil is able to: describe how various aspects of health are related; name and describe several factors that support or endanger health and their connections; and describe essential direct/indirect impacts of living environment on health
Health-related practical skills: specific health-related skills (such as ability to take	The pupil is able to: give examples how she/he can promote good health in his/her	The pupil is able to: identify various emotions and give examples of the regulation of

HL component *(6)*	**12 years (grade 6)**	**15 years (grade 9)**
care of personal hygiene), and more general skills relevant also in health context (such as information-seeking skills) and intuitive knowledge	daily life; describe various safety instructions (such as traffic, fire); describe different practices related to expressing and regulating emotions; describe safe and ergonomic ICT use; and search for health information from different sources	the behaviour; find solutions to solve conflicts; present ways of managing stress and crises; describe how he/she can seek and use appropriately health services provided by the school and the municipality; and search for health information from different sources and use the sources mainly in an appropriate manner
Critical thinking: ability to compare, classify and construct information, and ability to assess the credibility of health information	The pupil is able to select some valid resources of information The pupil practises justifying various views and is able to name dissimilarities in different viewpoints	The pupil is able to: assess the validity of health information; evaluate the importance of communication related to health; justify conceptions related to health and safety; and analyse factors affecting the adoption of health habits
Self-awareness: ability to reflect on oneself in general (including wishes, strengths, attitudes, bodily signals, behaviours) and oneself as a learner	The pupils is able to: set goals for him/herself for small study units and work to achieve common goals	The pupil is able to: identify and assess factors that relate to their own health and safety, and consider resources relevant to their own health; and formulate plans promoting the ability to study as well as work and functional capacity
Citizenship: ability to think about the consequences of actions on others and the world, ability to act in an ethical and responsible way, and participate in promoting the collective good	The pupil is able to: describe responsible ICT use; describe factors that support or threaten the building of a sustainable future (with examples); and describe different ways of protecting and developing his/her surroundings and communities	The pupil is able to: describe ethical questions related to ways of life and, using examples, evaluate the consequences of choices and ways of life to other people and to the health of the environment; and, with examples, describe measures and means that affect health in the surroundings

From: Finnish national core curriculum for basic education 2014.

Germany: introducing health literacy into the new digital education curriculum

Germany does not have a mandatory health education curriculum and health is not a mandatory school topic. Health nevertheless is sometimes a cross-cutting issue in schools that is addressed through various school subjects. Often, health is embedded within a health promotion and prevention framework addressed through, for example, healthy eating, substance prevention, oral health, traffic education, physical activity and sexual education.

In 2012, the Conference of Ministers of Education and Cultural Affairs (KMK) released a set of recommendations on how to address health promotion and prevention in schools *(37)*. The recommendations are not mandatory and do not address health literacy. Rather, they relate to generic health skills that do not particularly and/or necessarily address the health literacy core competencies of finding, understanding, evaluating and using health information. The newly developed standards for digital education and literacy from KMK *(38)*, however, offer promising entry points to address health literacy and its core dimensions.

These new standards present a mandatory curriculum designed to address digital education in schools and teacher education and are part of the German education sector's strategy to prepare schools for the digital transformation of society. The standards are not meant to be seen as a school subject, but as cross-cutting themes that should be addressed across school subjects. Education in Germany is a state (not federal) responsibility, so state education ministries have adapted the standards within their own media literacy frameworks (some states are still in the process of developing their frameworks). State models are based on federal standards but include small variations.

Table 2 presents the media literacy framework for the state of North Rhine-Westphalia *(39)*, with health literacy examples given. The model has not yet been used to address health literacy. In this example only five of the six competence areas are depicted. All competence areas include, refer to and are interlinked with further skill and competence areas, such as basic knowledge, practical skills, critical skills, attitudes and goal-directed action. The framework is meant to be used from primary school throughout upper-secondary, with the content and complexity of teaching varying according to grade.

Table 2. Media literacy framework for the state of North Rhine-Westphalia, Germany

Competence areas	**Action areas**			
Operating and using	*Media equipment* Using a smartphone responsibly to access and communicate health information	*Digital tools* Using software responsibly to navigate online health information	*Data organization* Being able to store health information in an organized way	*Data protection and information security* Being aware of and applying protection and security rules
Informing and investigating	*Information-seeking* Searching for health information	*Analysing information* Understanding health information	*Evaluating information* Evaluating health information	*Critical information review and use* Recognizing inappropriate health information, using it to inform behaviour and action

Communicating and cooperating	*Communication and cooperation processes* Using digital tools to communicate about health	*Communication and cooperation rules* Adhering to communication rules; conveying health messages in a clear and effective manner	*Communication and cooperation in society* Learning ethics and cultural norms and considering them in health communication	*Cyberviolence and cybercrime* Participating in health-related risk communication and prevention
Producing and presenting	*Media production and presentation* Being able to present health information to others	*Design tools* Using various multimedia tools to present health information	*Documentation of sources* Keeping track of health information sources	*Legal foundations* Being aware about rights, including health rights
Analysing and reflecting	*Media analysis* Comparing health information across websites	*Opinion-making* Developing a critical stance and detecting commercial health interests	*Identity formation* Being aware how health media shapes own reality and identity	*Self-regulated media use* Regulating the time invested in using media for health
Problem-solving and modelling	*Principles of the digital world* Understanding and using basic digital principals and tools regarding health	*Recognizing algorithms* Recognizing and reflecting algorithms and patterns in different health contexts	*Modelling and Programming* Describing problems, developing algorithms and evaluating strategies	*Relevance of algorithms* Reflecting about the influences of algorithms and automated processes on health

Steps towards actions on health literacy in schools

There is significant diversity in the way school health education is organized by the 53 Member States, and the level of ambition also varies significantly. This section outlines some practical steps that may be considered by practitioners who want to strengthen the position of health literacy in schools.

As many schools are not familiar with the concept of health literacy *(9)* and how much of their educational and organizational capacities and existing school processes may facilitate health literacy enhancement in school-aged children, conducting a self-assessment to determine the school's health literacy capacities is recommended. Self-assessments have been carried out in many other settings already *(40)*, such as hospitals and youth social care services.

The school curriculum reflects the competencies that societies see as being relevant for children, young people and adults, and include health-related competencies. Curricula have great potential to mitigate education and learning inequalities between and within countries and schools. An increasing number of countries have adopted a competence-based school curriculum, or are in the process of doing so *(41)*.

The main challenges the countries of the WHO European Region face when they aim to address health literacy in their education systems and schools are *(9)*:

- health literacy is not well known in the education sector;
- health education and health promotion are not parts of the school curriculum in many countries;
- teachers often are not trained in health topics, which makes it difficult to address health issues such as health literacy systematically and appropriately in schools; and
- health is often not part of the core goals of education: it is vital to demonstrate how health literacy supports educational goals, tasks and strategies.

The following recommendations derive from the existing gaps. They set out on what can be done to include health literacy as an educational goal in schools and absorb it as part of their educational tasks.

From a **regional perspective**, focus should be placed on:

- identifying country-specific key stakeholders and agents for progressing school health promotion and education;
- recognizing that differences in education systems exist across Member States and might mean they need approaches that fit their individual contexts; and
- monitoring individual and system progress on health literacy by implementing national and international surveillance systems, which will need advanced measurement tools that can be used at European, country, school and individual levels.

From a **country perspective**, focus should be placed on:

- considering experiences in other Member States and choosing approaches that fit their context;
- initiating close collaboration between the health and education sectors;
- training the education sector and schools to drive the planning and implementation of health literacy in collaboration with school health services and other relevant agents; and
- making sure the necessary resources, both financial and professional, are available.

Guiding the development of frameworks and curricula

Frameworks and curricula may be developed at national, regional or school level, depending on the way the education sector is organized in each country, using the following steps.

Situation analysis

Initially the practitioner should identify what is already taking place at the relevant levels (nationally or regionally) by seeking answers to the following questions.

- Is there an existing school curriculum and defined learning objectives for health education?
- Does it include health literacy or similar concepts (such as knowledge, skills, literacy or competence models)?
- Are there learning objectives for different grades?
- To what extent is it specified according to themes (such as food or physical exercise)?
- Is health education defined as a separate subject or a cross-cutting theme within the curriculum?
- How much time is allocated and at which grades?
- Who is responsible for implementation (teachers, nurses, doctors)?

A self-assessment is an important first step. The organizational health literacy approach in schools, however, must not only pursue a self-assessment of schools' organizational capacities to support child and adolescent health literacy development, but also integrate health literacy into their principles, processes, policies, strategies, structures and core values *(9).*

Stakeholder involvement

Good results and sustainability are more likely to be achieved if all school stakeholders, including pupils, teachers, school staff, parents, school nurses, researchers and administrators, are involved in the planning of a strategy. Representatives of the relevant groups should be consulted and involved in planning processes in compliance with the way these activities are organized in individual countries. This should ensure that any plans reflect the working reality on the ground, and the enhanced sense of ownership will lead to a higher success rate.

Planning

Based on the previous steps, authorities may draw up a national or regional plan covering issues such as a curriculum and decisions about when, where and how to implement health literacy education. The action plan should also include considerations about resources needed: for instance, do key staff members possess the competencies needed, or should some specific training be initiated to strengthen the required skills, and are funds required to purchase, for example, training or teaching materials?

Implementation

Quite often, new action plans are implemented immediately at national or regional levels. It may be wise to include a pilot project in the plan, allowing for adjustments before upscaling.

Monitoring and evaluation

Monitoring and evaluation of health literacy programmes represents one of the five strategic directions of the WHO roadmap *(13)*. Here it is important to distinguish between process evaluation and impact evaluation. The former assesses the way and extent to which a decided plan of action is actually implemented. The latter aims to explore whether a given education programme leads to increased health literacy.

It is good practice to include a mechanism of evaluation in an action plan, and best results are achieved if the evaluation methodology is considered upfront instead of post hoc. Evaluation can be done in several ways, spanning from the very simple to the more ambitious, including aspects of processes (is the teaching taking place?) and effects (has the level of health literacy improved?). Examples of themes of interest in process evaluation could be the number of classes and schools being taught health literacy syllabi according to plans, or teachers having received the necessary on-the-job training for conducting the teaching. Regarding impact evaluation, tools that are suitable for assessing changes in students' health literacy are available, as shown in the second chapter of this report. Having these results for individual students makes it possible to aggregate data for schools, education administrative units and even countries to monitor long-term trends. Data generated by a combination of process and impact evaluation activities will enable national and local education authorities to adjust and improve ongoing health literacy programmes.

Countries and regions will need to decide what should be the level of ambition. For countries that have no element of health literacy in their school health education at present (or maybe no health education at all), it is a big step to establish even modest goals. For countries that are already advanced, it may be decided that it is time to take the next step. These decisions must reflect the free and autonomous choices of Member States.

The role of teachers and principals in addressing health literacy

Delivering health literacy in schools has implications for professional capacity-building levels. Teachers *(42)* and school principals *(43)* influence the delivery of health literacy in the school as well as the quality of health education. Classroom instruction on health literacy needs qualified teachers facilitating children to develop personal health literacy competencies *(42)*. To achieve this, health literacy must be included in teacher training and the school curriculum *(9,42)*, with time allocated for teaching, teaching and learning materials made available for different grades, and teaching methods to address health literacy development in school-aged children.

Research also shows the critical role of principals in pursuing health promotion and health goals in schools. Principals with higher levels of health literacy are more active in driving and enabling health action in school settings *(43)*.

Collaboration between curriculum developers, school leaders, teachers and non-teaching staff includes highlighting entry points and links between health literacy and school subjects, topics and concepts already in place, and showing how health literacy can be integrated with them. Many schools already address concepts in their curriculum that encompass learning objectives that are similar to competencies and action areas addressed by health literacy, such as media literacy, information literacy, digital literacy, and critical thinking and communication skills *(9)*. Using an integrative approach and including or linking health literacy to existing teaching would also facilitate schools to implement health literacy in their routine practices without extra burden. Health literacy can then be delivered either as part of the health education curriculum, as a standalone subject, or be integrated across the curriculum into teaching on different school subjects *(8)*.

Health-promoting schools

In 2013, WHO's *Health literacy: the solid facts (3)* made a strong case for health literacy to be integrated into the settings approach. The Health-promoting Schools (HPS) Framework serves this purpose perfectly *(3)*. The HPS focuses on the whole environment, organizational change and school policy *(44)*. Over the years, various researchers and experts have highlighted that HPS should be seen as a most promising approach to addressing the delivery of health literacy in the school setting *(3,9,36)*.

In the school context, the organizational health literacy approach means that the whole school environment facilitates and helps school-aged children to develop health literacy competencies. A health-literate school must react to the diverse circumstances of all actors and agents involved and ensure that all school-aged children have equal opportunities to develop health literacy competencies and thrive *(45)*. Based on the above definition, and including perspectives from further health literacy models *(11,46)*, the following definition presents an understanding of organizational health literacy of schools:

- **organizational health literacy in schools** is the degree to which schools equitably enable students to: acquire health knowledge and attitudes; and learn the competencies and skills necessary to access, understand, appraise and apply health information to develop healthy behaviours, make judgements and take decisions to promote health and well-being for themselves and others across their lifespan.

Yet, there is still some way to go and much to learn about organizational health literacy in schools. Embracing the organizational health literacy concept in the school setting and making every school a health-literate, health-literacy-friendly and health-literacy-responsive school should be an important goal within the wider school health promotion strategy of education sectors in the European Region.

In Europe, SHE already is supporting most countries to implement and sustain their HPS programmes based on the whole-school approach. Health literacy has been integrated within the indicators for an HPS developed by SHE, highlighting intersections between health literacy and school health promotion *(36)*. By addressing the whole school, the health literacy competencies of school-aged children and the organizational health literacy capacities within the socioecological environment of the school can be addressed, making a school a health-literate school.

SHE has also produced a fact sheet on health literacy in schools which shows that health literacy partially is correlated with gender, age and educational indicators (such as school achievement, literacy, learning motivation and educational plans) and socioeconomic indicators (like family affluence, parental education and occupation) *(9)*.

In the best-case scenario, health literacy in school is integrated within the HPS framework *(9,45)*, benefitting from the broad approach of HPS to addressing the socioecological environment of the school (and school community) to enhance health and education goals. Many schools already are familiar with HPS and its implementation.

Conclusion

Education systems in the countries of the WHO European Region are facing challenging times through globalization, climate change, digitalization and, most recently, through the impact of the COVID-19 pandemic. Health literacy of individuals and systems is more important than ever. It will need joint efforts from policy, practice and research, as well as collaboration across sectors, to address children's and adolescents' health literacy systematically and sustainably in the European Region.

The COVID-19 pandemic highlights why health literacy is important, especially in a digitalized world in which limitless health information is available almost everywhere. The infodemic has shown how fast and at what magnitude misinformation and fake news about coronavirus and COVID-19 travel through the Internet and social media. Health literacy will help children and adolescents to distinguish between trustworthy and false information and empower them to identify and avoid fake news. Children and adolescents already have learned much about coronavirus through electronic media; systematizing this learning in schools by strengthening their health literacy is a crucial next step. Through health literacy, children and adolescents will better understand why coronavirus is dangerous, why and when societies (particularly schools) are locking down, and how they can protect themselves and others. It will help them to maintain better health in this difficult situation.

Addressing the health literacy of children and adolescents in schools will help promote health and well-being over their life-course by enabling them to address and solve health issues and anticipate their future health challenges. At the same time, it is in the best interests of educators that students improve their health and thereby optimize their learning capacity. School health promotion and education are critical means of strengthening health literacy among students and education professionals. Curriculum and programme development are important activities in which to structurally embed health literacy. A European action plan for health literacy can help to systematically develop, implement and evaluate health literacy activities in the education sector. Strengthening the health literacy of children and adolescents and the social and systemic support relevant to them at all levels will contribute to improving health, educational, social and sustainable development.

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The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

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