

DIGITAL LITERACY AND COMBATING MISINFORMATION AS CRITERIA FOR THE SUSTAINABILITY OF PUBLIC HEALTH

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Abstract

The European Union considers misinformation and fake news as a serious threat to democracy and social cohesion, especially in times of elections, health crises (e.g. pandemics) and more generally, in terms of understanding crucial phenomena (climate change, migration). To meet this situation, coordinated action by Member States, institutions and the media is needed. Against this challenge, the EU has developed a number of initiatives to manage the phenomenon. Among other things, a Transparency centre for monitoring the content of online platforms (such as Facebook, Twitter, etc.) and an independent observatory (European Digital Media Observatory-EDMO) have been set up to tackle misinformation online and protect users from false information.

More specifically, however, misinformation in health becomes a major threat, as it affects people's trust in science, undermines public health but also endangers the personal well-being of the individual. False claims about diseases or treatments can lead to dangerous practices or avoidance of scientifically based solutions (e.g. vaccines). The EU promotes the fight against these phenomena by supporting transnational projects aimed at reducing misinformation as well as increasing transparency on digital platforms.

The purpose of this paper is twofold. At a first level, it attempts to draw data from the ERASMUS+ PROJECT and CORDIS EU RESULTS platforms and to outline the 'landscape' of European funding with regard to programmes that address health misinformation, strengthen health literacy and contribute to the sustainability of public health. On a second level, it presents the results of the integrated European programme, FATOS2U, which aims to train young people to identify and evaluate reliable sources of information, especially in times of social and health crises. This programme enhances young people's participation in society by promoting critical thinking and responsible use of digital media, providing an integrated learning programme, multifunctional digital resources and tools, thus helping to protect public health.

Finally, the present effort highlights the need for cooperation between public and private bodies, scientific organisations and companies to ensure the provision of accurate and reliable information to citizens on the one hand and to develop initiatives to combat false or misleading health news through the development of digital literacy skills for all citizens on the other.

Key words: *misinformation, sustainability, public health, digital health literacy*

Introduction

One of the biggest challenges of the digital age is the spread of misinformation and fake news. With the speed of Internet dissemination, these phenomena affect democracy, social inclusion, and public health. Health Literacy is crucial because it is the key to understanding and using health information correctly. Without it, people cannot make informed decisions about their health. According to Bitzer and Ernstmann (2019), “Health literacy is the extent to which individuals are able to find, process and understand from educational, social and/or health systems health information relevant to making appropriate health-related decisions.” However, digital literacy in health is very important because all information is now available online. If we don't know how to evaluate sources, misinformation can seriously impact our health. According to Law and Woo (2018), “Digital literacy is the ability to access, manage, understand, integrate, communicate, evaluate and create information securely and appropriately through digital technologies for employment, decent jobs and entrepreneurship. It includes competencies variously referred to as digital literacy, ICT literacy, information literacy and media literacy.”

Recent studies emphasize that health-related fake news on social media continues to be a significant threat to both individual health and public trust. According to Melchior and Oliveira (2022), the majority of misinformation spreads through platforms like Twitter, YouTube, and Facebook, highlighting the urgent need for better tools and strategies as well as stronger engagement by health professionals online. In parallel, Vasist and Krishnan (2023) note that fake news also hinders sustainability-focused innovations, making it more difficult to promote and implement effective solutions in health and environmental contexts.

Beyond policy measures, technological solutions are also being explored. For instance, Lara-Navarra et al. (2020) proposed a semi-automated system for detecting fake health-related news, using user behavior analysis from Twitter and dynamic knowledge graphs. This approach illustrates the potential of AI-driven tools to support public health efforts by enabling more accurate tracking and validation of online information. Recent literature also highlights the role of explainable AI in fake news detection. Yuan et al. (2023) emphasize the need for human-centered models that combine insights from AI, communication science, psychology, and linguistics. Their approach promotes a more sustainable and transparent way of managing digital content, highlighting the value of interdisciplinary cooperation.

European Union Initiatives and Policies

The European Union has developed several initiatives to combat disinformation. These actions aim to improve digital literacy, strengthen cooperation between organizations, and create guidelines for a safer digital environment. The Digital Education Action Plan (2021–2027) was launched in 2020 and includes guidelines to empower teachers in cultivating digital literacy and combating misinformation, with a special focus on health (European Commission, 2023). The Action Plan against Disinformation focuses on strengthening the EU's capacity and cooperation to fight misinformation (European Union, 2018). The Communication - Tackling online disinformation: a European approach presents tools to counter the spread of misinformation and safeguard EU values (European Commission, 2018). The Action Plan for European Democracy includes guidelines on the obligations and accountability of online platforms in the fight against misinformation (European Commission, 2020).

The European Digital Media Observatory (EDMO) is an independent observatory bringing together fact-checkers and academic researchers with expertise in online disinformation, social media platforms, journalist-driven media, and media literacy. Since early 2023, six new national and regional hubs of EDMO have been operating, covering

countries such as Bulgaria, Germany, Estonia, Greece, Croatia, Cyprus, Latvia, Lithuania, Hungary, Malta, Austria, Romania, and Slovenia (European Commission, 2024a). The 2022 Code of Practice on Disinformation brings together a wide range of actors to engage in voluntary actions to counter misinformation (European Commission, 2025). The European Declaration on Digital Rights and Principles includes commitments to fight misinformation and promote a safe digital environment (European Commission, 2022). Lastly, Global Media and Information Literacy Week (2024) is a campaign taking place from 24 to 31 October, aiming to strengthen critical thinking and media literacy among citizens (European Commission, 2024b).

The European Union has no direct responsibility for health policies or for the organisation and delivery of health services. However, it plays a complementary role by supporting the national policies of the Member States and promoting cooperation in the field of public health (European Council, 2024).

European programs play a significant role in informing citizens and combating misinformation. A clear example of this is the FATOS2U project, which was completed a few months ago. The following section presents the project's content and outlines its main outcomes.

The EU-funded project FATOS2U

FATOS2U -Media Education and News Literacy to yoUth against Fake news reception and implicatiOnS- is an Erasmus+ KA2 project approved by the Portuguese National Agency with an implementation period of 24 months, between 01/05/2022 - 31/10/2024 (<https://fatos2uproject.eu/>). The project was carried out by a consortium of 5 organizations: ASDPESO, MVNGO, XENIOSPOLIS, GRIPEN EUROPE, NGO Nest Berlin from 5 European countries Portugal, Italy, Greece, Greece, Romania and Germany

FATOS2U promoted critical thinking and literacy in Media and news among young people, with the aim of strengthening democracy and combating manipulation, propaganda and fake news.

The target group of the project included young people aged 18-25 years old, youth leaders and trainers active in relevant training programs, as well as other stakeholders such as representatives of NGOs and civil society organizations, media literacy experts, staff of public services and members of youth councils.

The objectives of the project focused on supporting young people to be able to critically and ethically manage the information they receive from the media and make more informed decisions. At the same time, the project sought to raise awareness about fake news and misinformation, to strengthen critical thinking about media content, and to provide educational tools to combat these phenomena. Finally, it also aimed to identify the role and responsibilities of young people in navigating the digital environment.

The project produced three project results (PR) which are presented below.

PR1: Curriculum & Learning Materials Toolkit

Research and benchmarking was conducted on a) youth perceptions, attitudes and concerns about fake news and misinformation, interaction rates, level of engagement, etc., b) any youth training models for developing skills and knowledge related to identifying/challenging misinformation, and training schemes across partner countries. Partners collected data from various sources (literature review, focus groups, questionnaires among target group members and data analysis). The data provided the partnership with essential context and parameters on the design and implementation steps.

The FATOS2U curriculum was then developed which includes 5 modules. Each partner developed one module each. These are the following: MODULE 1 - Media Literacy and Awareness for key principles as vital tools to address the spread of fake news online. MODULE 2 - Disinformation, Fakes News, and Propaganda as means of manipulation and threats to democracy. MODULE 3 - Youth as the most vulnerable group to Fake News and disinformation. MODULE 4 - Fake News / Disinformation & Societal Crisis (e.g. COVID healthcare crisis, migration). MODULE 5 – Fake News / Disinformation, Politics in European context & International Tension. More information about the PR can be found on the following website: <https://fatos2uproject.eu/pr1-fatos2u-curriculum-and-learning-materials-toolkit/>.

PR2: Multifunctional Digital Resources

FATOS2U Multifunctional and Interactive Platform

The first part includes the multifunctional and interactive educational platform, which integrates all the educational material. The educational material is available in all the partnership languages: Portuguese, Greek, Romanian, Italian, German, and English, ensuring broad accessibility and understanding for all participants. The educational platform can be found at the following link: <https://fatos2uproject.eu/fatos2u-modules/>.

FATOS2U Mobile Application (Android, iOS)

As part of the project's digital tools, the FATOS2U mobile application was developed for Android and iOS platforms. This app was designed to enhance the users' educational experience by offering easy and immediate access to the project's educational content and interactive tools. The application can be downloaded via the website <https://fatos2uproject.eu/>.

PR3: Training Guidelines Handbook

The FATOS2U Training Guidelines Handbook provides clear instructions to organizations, youth leaders, and educators on how to use the FATOS2U online platform in their daily educational activities.

It includes guidance on:

- Integrating the platform into youth education
- Coaching techniques and differentiated instruction
- Methods for educating young people aged 18–25 to make informed decisions in today's media environment

The goal is to help young people develop analytical and critical thinking skills to identify fake news, respond appropriately, and adopt an ethical approach to consuming information—thereby protecting democracy and its values.

As part of PR3, model scenarios were developed for identifying fake news (message – sender – receiver, language, semantics) in specific contexts (e.g., COVID-19 information and updates, migrants in society, etc.), including steps such as recognition, rejection/reflection, and feedback.

Based on the module they had already created, partners were invited to develop their own short model scenario. These scenarios serve as teaching proposals for youth trainers, enabling them to teach parts of each module's content in a more effective and engaging way. More information about PR3 in all consortium languages from the link below: <https://fatos2uproject.eu/pr3-training-guidelines-handbook/>.

On the occasion of FATOS2U, we conducted our research to explore the link between literacy, disinformation and health in relation to sustainability and the digital environment. We conducted research on EU-funded projects on literacy, misinformation and health, with a focus on sustainability and the digital environment. Data from ERASMUS+ and CORDIS EU RESULTS databases were analyzed, exploring the link between these topics and health.

Methodology

Research in the ERASMUS+ PROJEC and CORDIS EU RESULTS databases

More specifically the research was conducted in the early days of 2025 in the databases of European Union-funded programs. The research followed two directions. At the first level, the ERASMUS+ PROJECTS³ database was studied. These are programs with small to medium funding, focused on education, training, youth, and sports. At the second level, the CORDIS EU RESULTS⁴ database was explored, which mainly concerns large-scale funding programs and the development of transnational research and cooperation, such as HORIZON, ERC, and others. In both cases, the research focused on the connection between literacy, misinformation, and health in relation to sustainability and the digital environment.

In the ERASMUS+ database, two keyword searches were conducted. The first combined the terms “*literacy*”, “*misinformation*”, and “*health*”, while the second used “*sustainable*”, “*digital*”, “*disinformation*”, and “*health*”. In the CORDIS EU Results database, a single search was performed using the keywords “*sustainable*”, “*digital*”, “*disinformation*”, and “*health*”.

The results of this investigation are discussed in the following section.

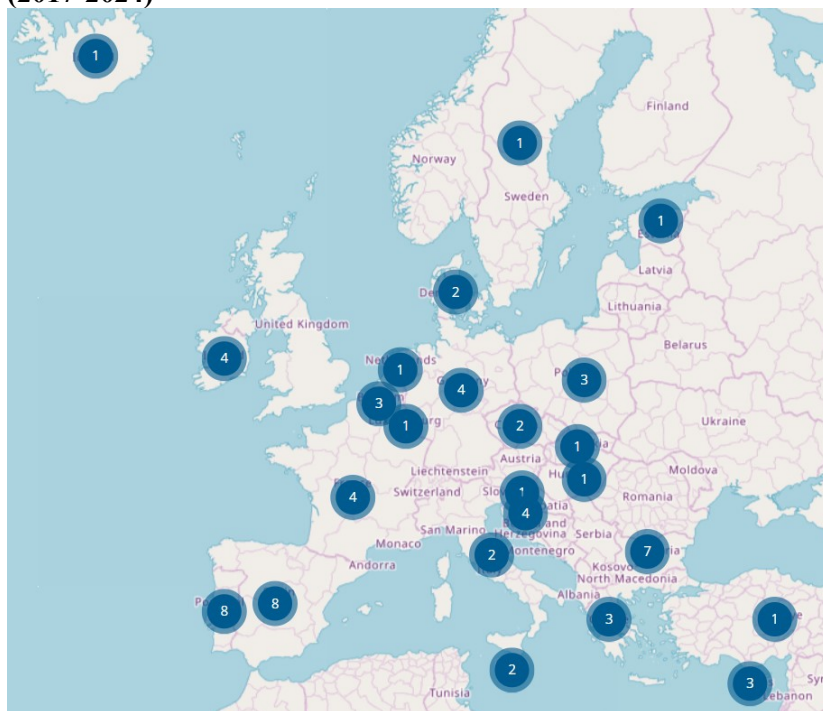
Results

For ERASMUS+ programs, the search was carried out by keywords on the total number of funded programmes (274,090 programmes). Searching for the combination of the words "literacy", "misinformation", "health", 69 programs were found, as illustrated in **Figure 1**. All were conducted in the last 7 years (2017-2024).

³ ERASMUS+ PROJECT RESULTS <https://ec.europa.eu/programmes/erasmus-plus/projects>

⁴ CORDIS EU RESULTS Search | CORDIS | European Commission (europa.eu)

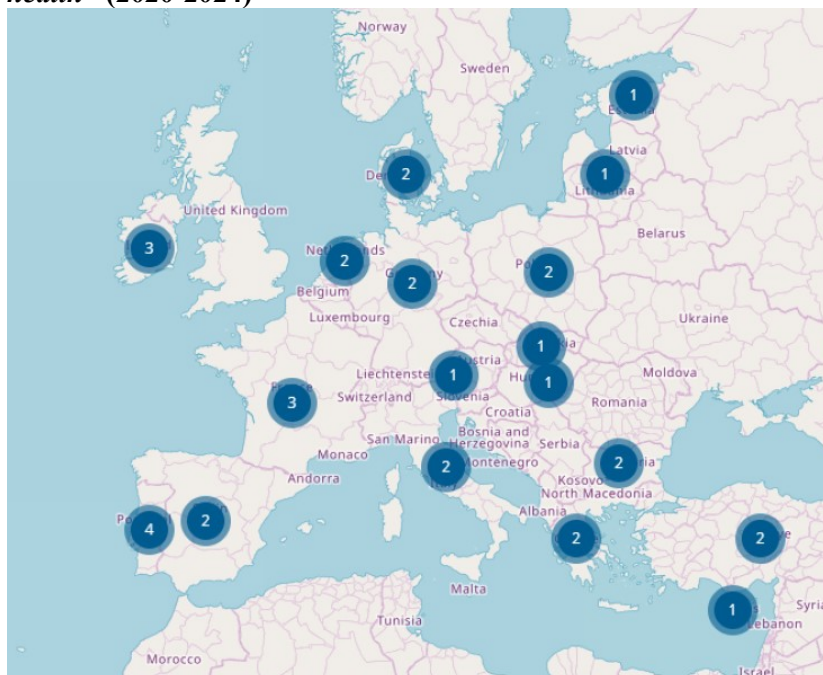
Figure 1. Map of 69 European funded projects regarding "literacy", misinformation, health" (2017-2024)



Annex 1. [ErasmusPlus Projects Search Results \(69\).xls](#)

Searching for another combination of the words "sustainable", "digital", "disinformation", "health", 35 cases of funded projects appeared. In this case all were conducted in the last four years (2020-2024), as illustrated in **Figure 2**.

Figure 2. Map of 35 European funded projects regarding “Sustainable, digital, disinformation, health” (2020-2024)⁵



Annex 2. [ErasmusPlus Projects Search Results \(35\).xlsx](#)

⁵ Although the map shows 4 coordinated projects for Portugal, the accurate number is 5, as confirmed by paper records (Annex 2) and presented in Table 2. The discrepancy is attributed to a visualization error.

More specifically, of the funded programs that appeared in the search with the combination of the words "sustainable", "digital", "disinformation", "health", these concern the mobility programs KA1: Learning Mobility of Individuals (27 in total) and KA2: Partnerships for cooperation and exchanges of practices (8 in total).

The funded programs span a wide array of thematic areas, reflecting both recurring priorities and more specialized or emerging topics. The most prominent themes include media literacy and tackling disinformation, as well as digital skills and competences, which collectively account for a significant share of the projects. Other frequently addressed areas include European identity, youth inclusion, well-being, and the use of digital technology. A number of projects also focus on democratic participation, refugee integration, equality, and environmental sustainability. Additionally, several topics—such as active ageing, rural inclusion, and entrepreneurship—were represented by only one project each, underlining the breadth and diversity of the funded initiatives, as illustrated in **Table 1**.

Table 1: Distribution of Projects by Thematic Category

Thematic Category	Number of Project
Media literacy and tackling disinformation	20
Digital skills and competences	9
European identity and values	5
Inclusion of marginalized young people	5
Awareness about the European Union	5
Physical and mental health, well-being	5
Digital content, technology and practices	5
ICT -new technologies- digital competences	4
Creativity and culture	3
Inclusion – equity	3
Integration of refugees	3
Quality and innovation of youth work	3
Democracy and inclusive democratic participation	3
Reaching the policy level/dialogue with decision markers	2
Green skills	2
Bridging intercultural, intergenerational and social divide	2
Digital youth work	2
Creativity, arts and culture	2
Inclusion, promoting equality and non-discrimination	2
Digital safety	2
Environment and climate change	1
Health and wellbeing	1
Key Competences (incl. mathematics and literacy) – basic skills	1
New innovative curricula/educational methods/development of training courses	1
Youth (Participation, Youth Work, Youth Policy)	1
Entrepreneurial learning – entrepreneurship education	1
Migrants’ issues	1
Key competences development	1
Preventing racism and discrimination	1
Reception and integration of refugees and migrants	1
Information and communication technologies (ICT)	1
Green transport and mobility	1
Tackling geographical remoteness and involving rural areas	1
Activeageing	1

It is observed that the majority of the projects concern media literacy and tackling disinformation, digital skills and competencies, as well as European identity and values.

Finally, the research identified these programs as being developed within the following categories: Youth (26 projects), School Education (4 projects), Adult Education (3 projects), Vocational Education and Training (2 projects), Higher Education (0 projects).

It is noteworthy that there is a lack of development of relevant programs in higher education, as well as a limited presence in vocational and primary/secondary education, in contrast to their significant growth in the field of youth.

The coordination of 35 projects was distributed across multiple countries, with the highest number attributed to Portugal. Further details on the distribution can be found in **Table 2**.

Table 2. Distribution of Coordinated Projects by Country

Country		Number of Projects
Portugal	EU Member	5
France	EU Member	3
Ireland	EU Member	3
Bulgaria	EU Member	2
Germany	EU Member	2
Denmark	EU Member	2
Greece	EU Member	2
Spain	EU Member	2
Italy	EU Member	2
Netherlands	EU Member	2
Poland	EU Member	2
Austria	EU Member	2
Cyprus	EU Member	1
Estonia	EU Member	1
Hungary	EU Member	1
Lithuania	EU Member	1
Slovakia	EU Member	1
Turkey	Third Countries associated	2

In the CORDIS EU RESULTS database, the search was also conducted using keywords across all funded programs. A total of 9 results were found based on the search terms “sustainable”, “digital”, “disinformation”, and “health”. Most of these projects were carried out in the last decade (2016–2024). An overview of the results by funding programme is presented in **Table 3**.

Table 3. Number of Relevant Projects Found per EU Framework Programme

Framework Programme	Number of projects
Horizon Europe 2021-2027	1
Horizon 2020	8
Framework Programme 7 (FP7)	0

All eight projects presented in Figure 3 were **coordinated by organizations based in the respective countries**, within the Horizon 2020 framework. The distribution spans several European countries and years, as follows: Greece (2018–2021), Belgium (2020–2023),

Sweden (2018–2021), Italy (2020–2024 and 2021–2024), Finland (2019–2022), Estonia (2016–2019), and Germany (2020–2024).

In contrast to the eight projects identified under Horizon 2020 (**Figure 3**), only one project matching the same criteria was found under Horizon Europe, coordinated by Slovakia (2022-2025) (**Figure 4**).

Figure 3. Map of 8 European funded projects regarding “Sustainable digital disinformation health” (Horizon 2020)



Figure 4. Map of 1 European funded project regarding “Sustainable digital disinformation health” (Horizon Europe 2021-2027)



Annex 3. List of 9 EU-funded projects with the keywords “sustainable”, “digital”, “disinformation”, “health” [cordis-search-results \(9\).csv](#)

Table 4. Coordinated Projects Under Horizon 2020 And Horizon Europe

Framework Program	Country	Implementation period
Horizon Europe 2021-2027	Slovakia	2022-2025
Horizon 2020	Greece	2018-2021
Horizon 2020	Belgium	2020-2023
Horizon 2020	Sweden	2018-2021
Horizon 2020	Italy	2020-2024
Horizon 2020	Italy	2021-2024
Horizon 2020	Finland	2019-2022
Horizon 2020	Estonia	2016-2019
Horizon 2020	Germany	2020-2024

Table 4 presents the projects identified under the Horizon 2020 and Horizon Europe (2021–2027) frameworks, in which the listed countries acted as project coordinators. The projects focus on themes related to “sustainable digital disinformation health”, and their implementation periods range from 2016 to 2025. The analysis of the data reveals that issues related to sustainability, digital transformation, misinformation, and health remain at the forefront of research and continue to receive funding under the new framework program, Horizon Europe.

Conclusions

This paper highlighted the importance of digital literacy and the ability to recognize misinformation as critical tools for protecting public health. The spread of false or misleading information, especially on health-related issues, poses a serious threat to social cohesion and individual well-being. The need for informed and critically thinking citizens is becoming increasingly urgent, as the flow of information on the internet is often accompanied by inaccuracies or ulterior motives.

The European Union actively supports health improvement through policies and financial assistance, but it does not replace the role of individual states, each country remains responsible for its own healthcare system.

The FATOS2U program stands out as a prime example of a successful non-formal educational initiative aimed at empowering young people. Through innovative tools and multilingual educational materials, it supports the development of skills that enable participants to recognize fake news, identify reliable sources, and actively engage in public discourse with responsibility and critical thinking.

The research conducted in the ERASMUS+ and CORDIS databases revealed a significant number of projects linking digital literacy with health and misinformation. However, limited activity was observed in higher education and large-scale research programs, indicating the need for further investment and strategic focus in these areas.

In this context, it is worth noting that the limited presence of relevant projects under the Horizon Europe program (2021–2027), compared to the strong activity observed during Horizon 2020, highlights the need for further investment and support for research initiatives focused on sustainability, digital transformation, misinformation, and health. Today’s pressing challenges—such as managing digital information, promoting sustainability, and strengthening public health through innovative solutions—demand transnational approaches. The European Union has the opportunity to bridge existing gaps by encouraging greater collaboration, broader geographic participation, and new research initiatives that harness the power of digital technologies to build sustainable and resilient societies.

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Annex

Figure 1. Map of 69 European funded projects regarding "literacy", misinformation, health" (2017-2024) [Search \(69\) - Erasmus+.pdf](#)

Annex 1. List 69 of European funded programmes with the keywords "literacy", "misinformation", "health"[ErasmusPlus Projects Search Results \(69\).xls](#)

Figure 2. Map of 35 European funded projects regarding “Sustainable, digital, disinformation, health” (2020-2024) [Search \(35\) - Erasmus+.pdf](#)

Annex 2. List of 35 European funded programmes with the keywords "sustainable", "digital", "disinformation", "health"[ErasmusPlus Projects Search Results \(35\).xlsx](#)

Annex 3. List of 9 EU-funded projects with the keywords “sustainable”, “digital”, “disinformation”, “health” [cordis-search-results \(9\).csv](#)

Figure 3. Map of 8 European funded projects regarding “Sustainable digital disinformation health” (Horizon 2020) [Search \(8\) - CORDIS EU RESULTS](#)

Figure 4. Map of 1 European funded project regarding “Sustainable digital disinformation health” (Horizon Europe 2021-2027) [Search \(1\) - CORDIS EU RESULTS](#)