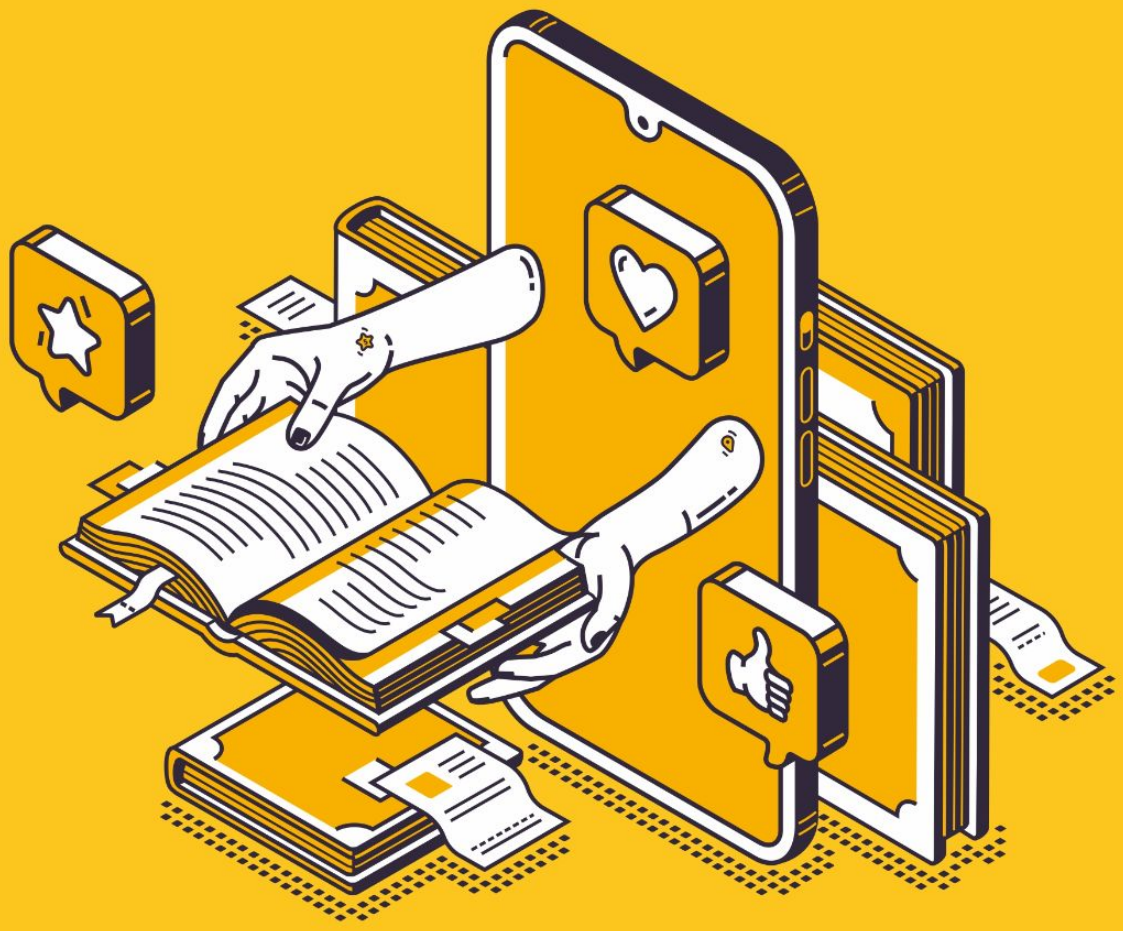
alda

European Association for Local Democracy

MEDIA LITERACY

in the age of digital disinformation: challenges, good practices and recommendations



Citizens, Equality, Rights and Values programme

dataninja

ABSTRACT

Disinformation represents one of the main challenges of the digital society. From the global response to the COVID-19 pandemic to political influence campaigns, the need to find more effective solutions to limit the circulation of unreliable information has emerged.

In this report, we present the solutions that recent studies have shown to be most effective, both from a corrective (*debunking*) and a preventive (*prebunking*) perspective. In particular, we will focus on preventive actions such as psychological inoculation and media and information literacy.

We will then present Open the Box, an innovative case study of combating disinformation through media and information literacy interventions in Italian schools, which combines both corrective and preventive actions.

From this experience, five recommendations are then offered for all organisations that, both locally and internationally, want to promote more effective actions to counter digital disinformation through media literacy programmes.

TABLE 0F CONTENT

CHAPTER 1

Digital disinformation

Digital Information Disruption

The spread of disinformation constitutes one of the main challenges of the digital society. From pandemics to global conflicts, via major elections and the climate emergency, disinformation plays a central role in the choices of citizens, public institutions and private organisations.

As the Covid-19 pandemic highlighted so well, it is especially in times of crisis that manipulated data, fabricated news and doctored images manage to gain a foothold and impose themselves in the public debate, with major consequences on individual and collective choices. Just think of the role that disinformation played in the vaccination campaign against Covid-19[1], which was also reiterated by the World Health Organisation when it proposed the term **infodemic**. In this regard, emphasise researchers Roozenbeek et al. (2022a)[2]: "The spread of misinformation[3] is linked to the resurgence of vaccine-preventable diseases, the subversion of political norms, and the amplification of social divisions", recalling how in all these areas there remain **"concerted efforts to manipulate public opinion"** and **"striking gaps in public understanding".**

A concern shared by more and more people. More than 70 per cent of the global population perceive the spread of online disinformation as a "serious threat" to our future, according to a survey conducted by the Pew Research

[1] Wilson SL, Wiysonge C. Social media and vaccine hesitancy. *BMJ Global Health*. 2020;5:e004206. https://gh.bmj.com/content/5/10/e004206.info

[2] Roozenbeek, J., Suiter, J., & Culloty, E. (2022a. "Countering Misinformation: Evidence, Knowledge Gaps, and Implications of Current Interventions". *European Psychologist*. https://doi.org/10.31234/osf.io/b52um

[3] A more detailed distinction of the terms disinformation, misinformation and malinformation will be offered below.

Center in 2022 in 19 countries[4]. When compared to other major global challenges, disinformation comes just after climate change (75%) and just before other equally relevant issues such as cyber-attacks from foreign countries (67%), the state of the global economy (61%) and the spread of infectious diseases (61%).

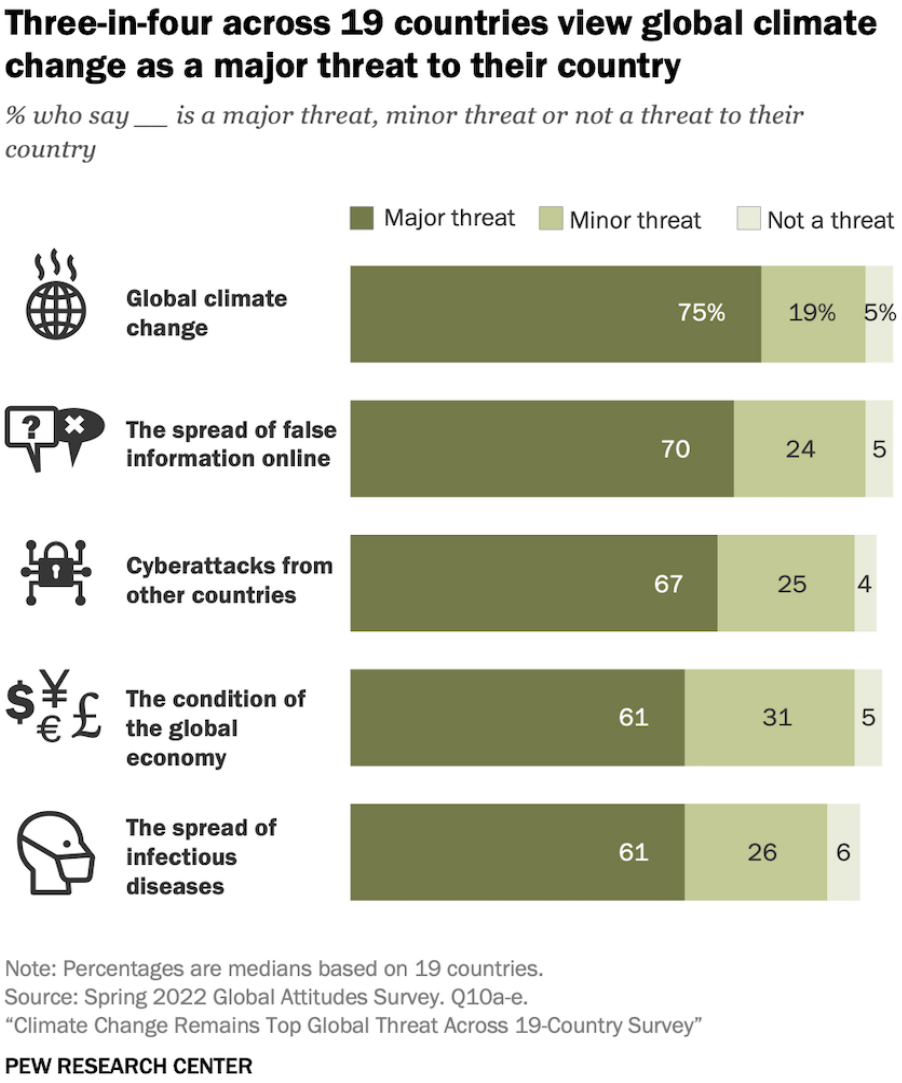


***Image 1* - Pew Internet Research's graphic elaboration**

[4] Jacob Poushter, Moira Fagan, and Sneha Gubbala, "Climate Change Remains Top Global Threat Across 19-Country Survey," *Pew Research Center's Global Attitudes Project* (blog), August 31, 2022. https://www.pewresearch.org/global/2022/08/31/climate-change-remains-top-global-threat-across-19-country-survey/

Disinformation today represents a crisis that requires urgent measures to be understood and overcome. At the same time, one must not make the mistake of creating a direct correlation between the disinformation crisis and the advent of the digital society. Every historical period develops its own information systems, which inevitably also include phenomena of 'disorder' and 'disturbance' - to borrow an effective expression (information disorders) coined by scholars Claire Wardle and HosseinDerakhshan[5].

It would be better, therefore, not to speak of a **"post-truth"** era (word of the year 2016 *according to Oxford Dictionaries*) to refer to the historical moment we are currently experiencing. A confirmation comes to us from all the scientific literature that has analysed the emergence and spread of disinformation from the ancient Romans to the Middle Ages, passing through modernity and the different forms of manipulation imposed by the mass media, such as newspapers, radio and television. "While it is increasingly clear that fake news has existed as long as human beings have been communicating and sharing information, **the term *fake news* is not the most useful expression when analysing the myriad types of fake information**, since there are significant differences between these different types," write Monika Hanley and Allen Munoriyarwa in one of the most comprehensive researches on the history of disinformation[6].

Rather, if it is true that each era develops its own 'information disorders', one must first better understand the specific characteristics of contemporary ones: how they are created, distributed and amplified in digital networks.

[5] Wardle C. and Derakhshan H. *Information Disorder: Toward an interdisciplinary framework for research and policy making*. Council of Europe report. 2017. https://edoc.coe.int/en/media/7495-information-disorder-toward-an-interdisciplinary-framework-for-research-and-policy-making.html

[6] Hanley, Monika and Munoriyarwa, Allen. "Fake News: Tracing the Genesis of a New Term and Old Practices". *Digital Roots: Historicizing Media and Communication Concepts of the Digital Age*, edited by Gabriele Balbi, Nelson Ribeiro, Valérie Schafer and Christian Schwarzenegger, Berlin, Boston: De Gruyter Oldenbourg, 2021, pp. 157-176. https://doi.org/10.1515/9783110740202-009

The first step towards a better understanding of the information crisis is to go beyond the simple "true/false" dichotomy on which much of the debate on "fake news" and the "post-truth" era has focused, with all the emphasis on the need to "separate fact from fiction". As Wardle and Derakhshan point out, the truth dimension is not enough to understand the phenomenon of disinformation. The dimension of the intentions of those who produce the communicative act must also be taken into account. Hence the useful distinction between three types of "information disorders":

1) ***Disinformation*:** false information produced with the intention of producing harm, such as news that appears to be true but is false or images deliberately manipulated to deceive;

2) ***Misinformation*:** false information produced without the intention of doing harm, such as unknowingly sharing misleading content;

3) ***Malinformation*:** authentic information produced with intent to cause harm, such as personal content shared without the permission of its owner.

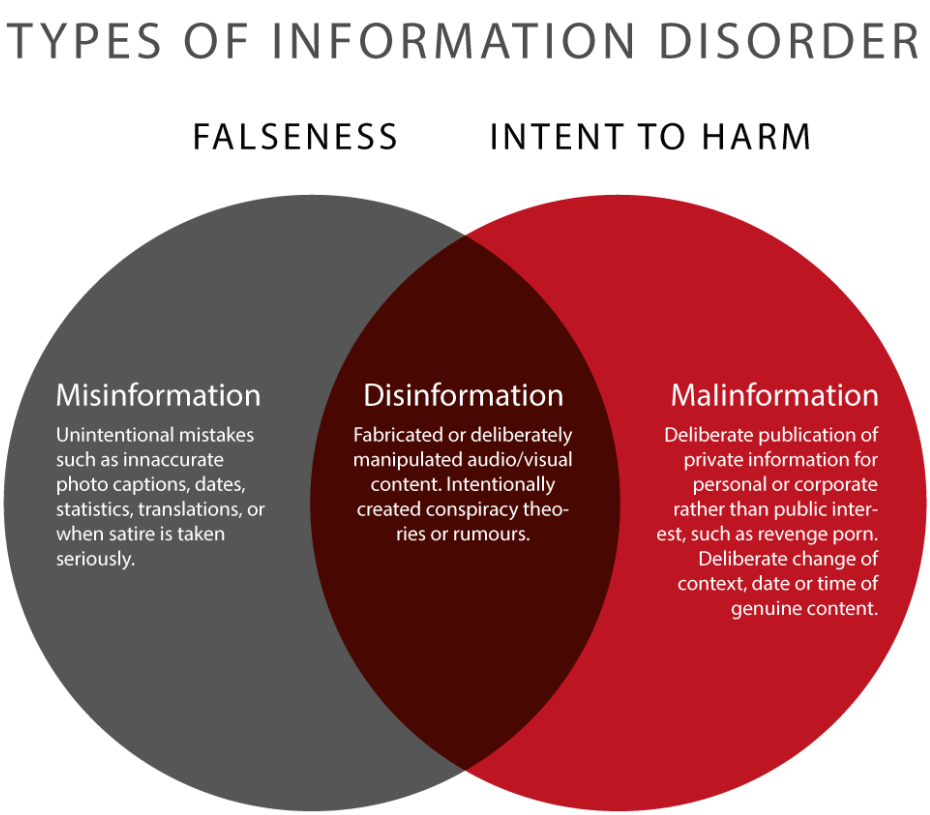


Image 2 – ***Taken from Wardle e Derakhshan 2017***

This distinction of the different information disorders helps us to understand, on the one hand, how even authentic information can be problematic and, on the other hand, how even irresponsible acts online *(*putting a *like, sharing without delving deeper)* can contribute to spreading false information. This is especially relevant forMedia Literacy Education (MLE): **it is not enough to teach how to distinguish true from false, misinformation also spreads due to the lack of awareness with which users share untrustworthy content.**

In this regard, more recent studies try to go beyond the framework proposed by Wardle and Derakhshan: even the intentions of those who produce an information act may prove insufficient to explain the complexity of information disorders. This is argued by scholars Whitney Phillips and Ryan M. Milner in the essay *You Are Here. A field guide for navigating polarized*

speech, conspiracy theories and our polluted media landscape[7], recognising the presence of **"deep memetic structures"** that play a central role in the production of disinformation in digital contexts. These are interpretative modes rooted within us, which guide us in our understanding of the world, according to recurring patterns that often have a precise narrative structure. These structures can also drive us to distort them in order to make them more consistent with our worldview. It is for these reasons that Phillips and Milner propose an interesting **"ecological" reading of information disorders**, which emphasises the systemic nature of the crisis we are going through: it is not enough to point the finger at a few large "polluters" who contribute to "pouring" "toxic" content into the rivers of the net; we must also point the spotlight on the technological infrastructures that make all this possible and on the economic incentives of the large platforms. Not to mention our role as distracted users who, often unwittingly, reproduce our deep memetic structures in network dynamics, contributing to creating more "pollution".

Phillips and Milner's ecological approach is particularly effective for Media Literacy Education actions as it shifts the focus to the collective aspect of disinformation: there is no "enemy" to fight, we are all responsible for creating a better information environment.

Why we believe in disinformation

In recent years, many journalistic investigations and academic researches have focused on the effects of disinformation in digital environments, denouncing the exacerbation of ethnic violence and religious conflicts, attempts to manipulate elections, and the polarisation of debate on important issues such as public health.

[7] Phillips W. and Milner R.M. *You Are Here. A field guide for navigating polarized speech, conspiracy theories and our polluted media landscape*. The MIT Press. 2021

In response to these enquiries, various public and private institutions have promoted initiatives to counter disinformation, often in a mode of open experimentation, without relying on empirical research to assess their real effectiveness.

Only in the last few years a more evidence-based approach has come forward, promoted above all in the fields of cognitive and behavioural psychology studies that have focused in particular on what the 'drivers' of disinformation are and why, for example, many people seem to be very resistant to attempts of correction.

This line of research has made it possible to **overcome the information deficit model** according to which we tend to believe in disinformation simply because we lack correct information and it would suffice to expose citizens to the truth to correct their tendency to believe false information. Disinformation would amount to a lack of information that should be filled with **corrective measures**, such as fact-checking, i.e. the production of content that dismantles piece by piece the disinformation circulating online and proposes a fact-based alternative.

However well-intentioned these attempts may be, they do not always bear fruit: many people continue to deny the efficacy of vaccines or the existence of the climate crisis, even when there is plenty of factual evidence to confirm this.

According to one of the most comprehensive reviews of the scientific literature currently available on the subject[8], interventions based on the information deficit model tend to fail because they take absolutely no account of the **cognitive, social and emotional drivers** that guide us when we decide whether or not to believe something.

[8] Ecker, U.K.H., Lewandowsky, S., Cook, J. *et al.* "The psychological drivers of misinformation belief and its resistance to correction". *Nat Rev Psychol* 1, 13–29 (2022). https://doi.org/10.1038/s44159-021-00006-y

"The rejection of science is not the result of increased ignorance, but is driven by factors such as conspiracy mentality, fears, the need to express one's identity and *motivated reasoning* - factors driven more by personal and ethical values than by objective evidence", write Ecker et al. (2022)[9].

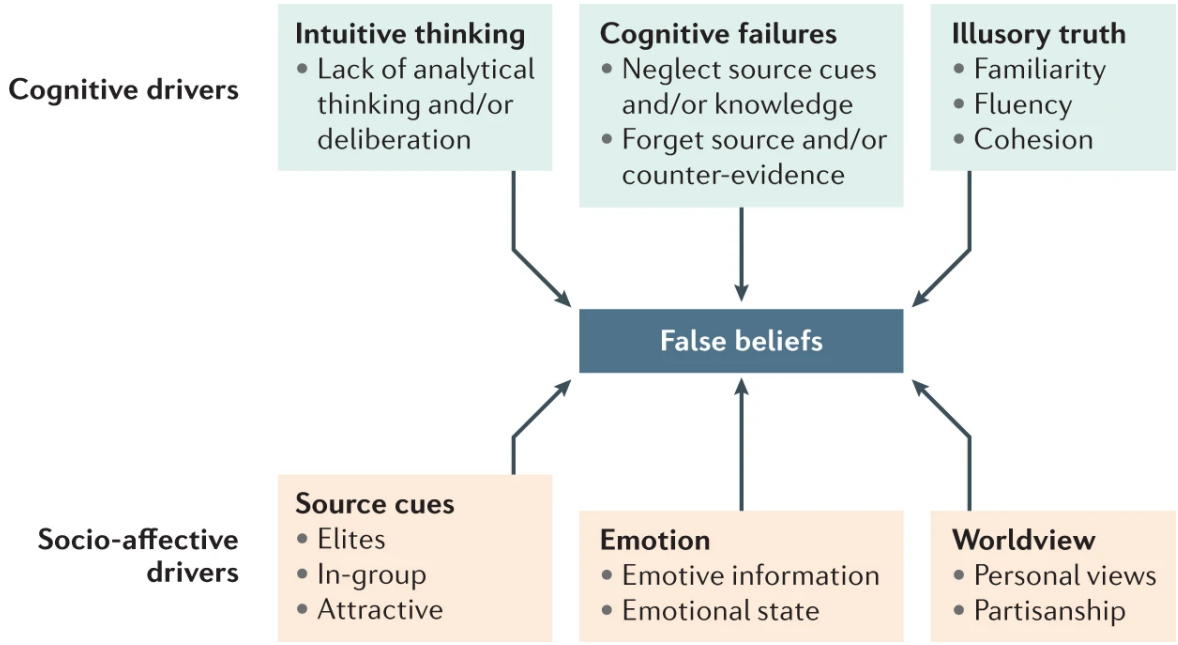


Image 3 - ***Source: Ecker et al. 2022***

Cognitive drivers

One of the best analysed phenomena at the cognitive level is the so-called **"illusory truth effect"**: an information even if it is false tends to be believed as true if it is repeated many times. This effect is caused by a set of signals such as:

- ***Familiarity*:** the fact that a message has been previously encountered
- ***Ease of comprehension*:** the fact that a message is decoded with little effort;
- ***Cohesion:*** the fact that the elements of a message have references in our memory that make it internally consistent.

[9] Ecker et al (2022), *cit*

All these signals - write Ecker et al. (2022) - serve to reinforce both reliable information and disinformation: “Several studies have shown that the illusory truth effect tends to persist for months after the first exposure, regardless of cognitive ability and despite contradictory suggestion from an accurate source or reliable prior knowledge”.

Another cognitive factor that drives us to believe false information is then the so-called **“intuitive thinking”**: especially in digital environments, we tend to scroll through information with little attention, lowering the thresholds of our credulity without ceasing to process the information and thus incorporate the messages conveyed to us. The lack of analytical or reflective thinking is therefore not a deficit to be made up, but a cognitive characteristic to be reckoned with, especially in an environment of information overabundance.

In addition to intuitive thinking, there are also other forms of **“cognitive failure”**, such as forgetting to check the source or looking for other secondary sources that confirm or disprove the information we have. Among the most effective media education interventions are precisely those that seek to reduce the impact of these “failures”, for example by inviting us to “act like a fact-checker”. A wide-ranging study conducted in the US showed how college students tend to believe false information less when they are stimulated to improve “**lateral thinking**”, i.e. not to stop at a single source, but to search for other sources online.

Socio-affective drivers

Not only cognitive factors. Our beliefs are also influenced by socio-affective factors, such as our **worldview**: political affiliation, as well as our more intimate and personal beliefs, guide us in filtering online information and make us believe false information when, for example, it easily confirms our views. This is the so-called **confirmation bias** phenomenon.

Equally important are the social signals concerning the **sources** of information. In general, messages from 'authoritative' sources tend to be perceived as more trustworthy, even when there is various evidence that mainstream sources often contribute to disinformation[10]. In particular, **elite factors** lead us to perceive a source as 'attractive, powerful and similar to ourselves' (Ecker et al. 2022). It is for this reason that **experts, influencers and political leaders enjoy a competitive advantage in the digital information arena: we tend to overestimate the correctness of their messages beyond the actual expertise on the topic they are talking about.** "For example," Ecker et al. (2022) explain, "false claims made by political leaders about public health threats such as Covid-19 can reduce the perceived risk of the virus, as well as the perceived effectiveness of countermeasures".

Several experiments have also confirmed that there is often a **tendency to "ignore, forget or confuse signals about the source of information"**, an indication to be taken into account when designing Media Literacy Education interventions.

Added to this is the **emotional** dimension of disinformation. Content with a strong emotional connotation tends to be shared more on social networks, thus increasing its persuasive power. But emotion also plays a crucial role when considering the state of mind of users: some research seems to suggest that a state of happiness may make us more vulnerable to the illusory effect of truth and deception.

[10] Yariv Tsfati, H. G. Boomgaarden, J. Strömbäck, R. Vliegenthart, A. Damstra & E. Lindgren (2020). "Causes and consequences of mainstream media dissemination of fake news: literature review and synthesis". *Annals of the International Communication Association*, 44:2. 157-173. DOI: 10.1080/23808985.2020.1759443

Countering disinformation: the most effective interventions

Research into why we believe false information is important not only to better understand this phenomenon, but also because it allows us to design and test counter interventions that are more effective and relevant.

In particular, different types of strategies have been developed in recent years to combat disinformation: legal and ethical (*such as the guidelines issued by the European Commission*); technological (*such as automatic detection of misleading content*); educational (*such as digital and media literacy interventions*); psychological/behavioural (*boosting, nudging*).

Synthesising the main interventions developed in recent years, scholars Roozenbeek, Suiter and Culloty propose these four macro-categories[11] of law enforcement interventions:

1) **Debunking:** fact-checking;
2) **Nudging:** interventions that favour users' choices;
3) **Automation:** content categorisation algorithms;
4) **Boosting:** psychological inoculation, media and information literacy.

Debunking

Debunking is certainly the best known and most promoted intervention in recent years. Since 2010, dozens of initiatives have sprung up around the world that focus on fact-checking the most widely shared content online. Most of these initiatives adhere to the International Fact-Checking Network promoted by the Poynter Institute, which invites its members to subscribe to a code of conduct guaranteeing independence and accuracy of action. Many of them operate in partnership with major technology platforms, such as YouTube, Google, Meta. In particular, the latter has launched a programme that integrates “corrections” made by fact-checkers into its platform,

[11] Roozenbeek (2022a), op. cit.

alerting users when highly viral content has already been verified by a fact-checking organisation.

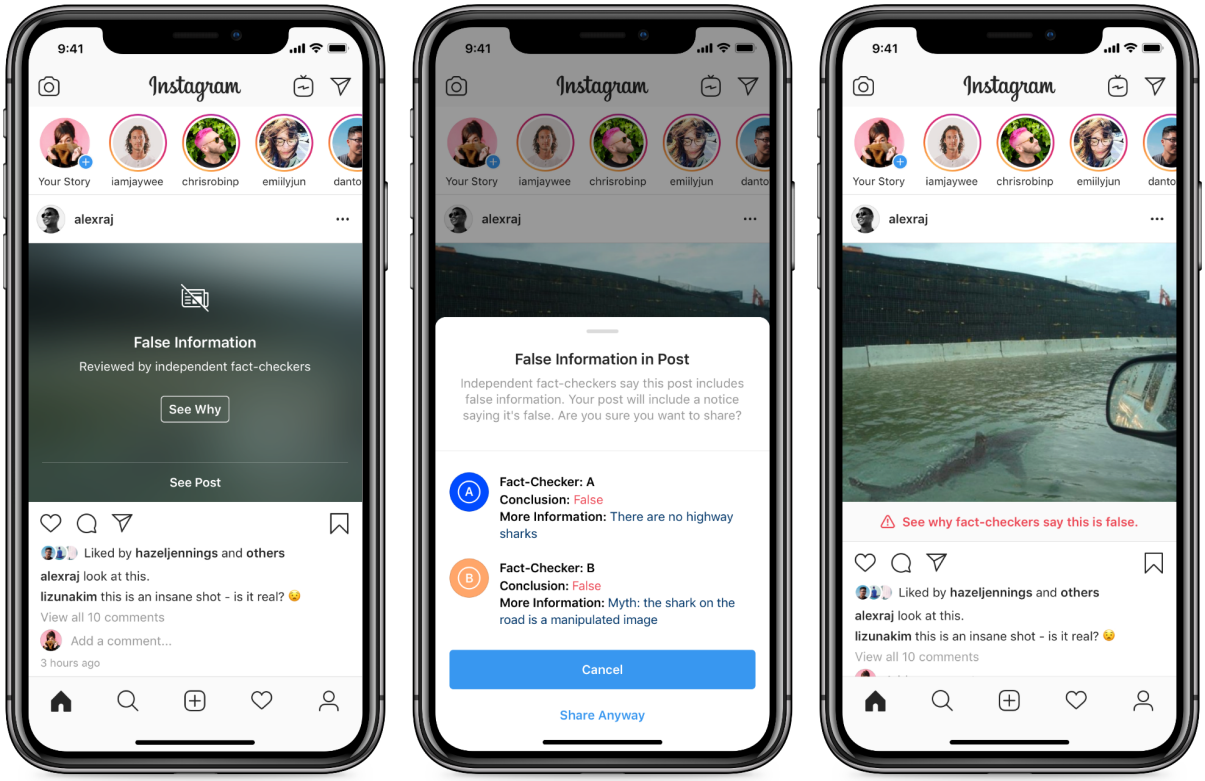


Image 4 - ***Source: Instagram***

While fact-checking interventions prove effective in reducing the grip of disinformation, they also have limitations in terms of scalability and psychological reinforcement. Studies have found how **fact-checks only succeed in reaching a very small fraction of the audience originally exposed to disinformation.** And, above all, how difficult it is to penetrate the so-called "echo chambers" of conspiracy theories: groups, pages and forums that nurture conspiracies and where a fact-based approach can hardly make its way.

Even if one succeeds in reaching a large number of users with fact-checking, there is then another risk around the corner: fact-checkers' analyses contribute to giving more oxygen to the original uninformative content and, above all, to reinforcing the **illusory truth effect** that often leads

one to believe a false content repeated many times as authentic, even if it is false.

Added to this is another well-known psychological effect, that of **continuous influence** whereby it is particularly difficult to correct content that has previously been encoded and remembered as correct.

According to Roozenbeek et al. (2022a), another problematic aspect of fact-checking is the **independence** of the sources that produce these verifications: the very choice of what to verify and what not to can already carry personal and ideological biases; in addition, many fact-checking organisations often rely on substantial donations from the same social media platforms such as Google and Facebook that, according to several authors, are among those responsible for the disinformation circulating online.

Nudging

Nudge is a concept popularised by Richard H. Thaler and Cass Sunstein in their famous 2008 essay in which it is defined as “any aspect of choice architecture that alters people's behaviour in a predictable way”. It is, therefore, interventions that aim to change people's behaviour and that can also be deployed to counter disinformation. If, for example, online users have difficulty assessing the accuracy of online information, mechanisms can be created at the interface or user experience level that will lead to changing this behaviour. These are **accuracy nudging** hat are particularly easy to implement on social networks. One of the best known is the one developed by Twitter when it asks a user if he/she is sure he/she wants to share content with a link he/she has not yet clicked on (*and therefore has not read*).

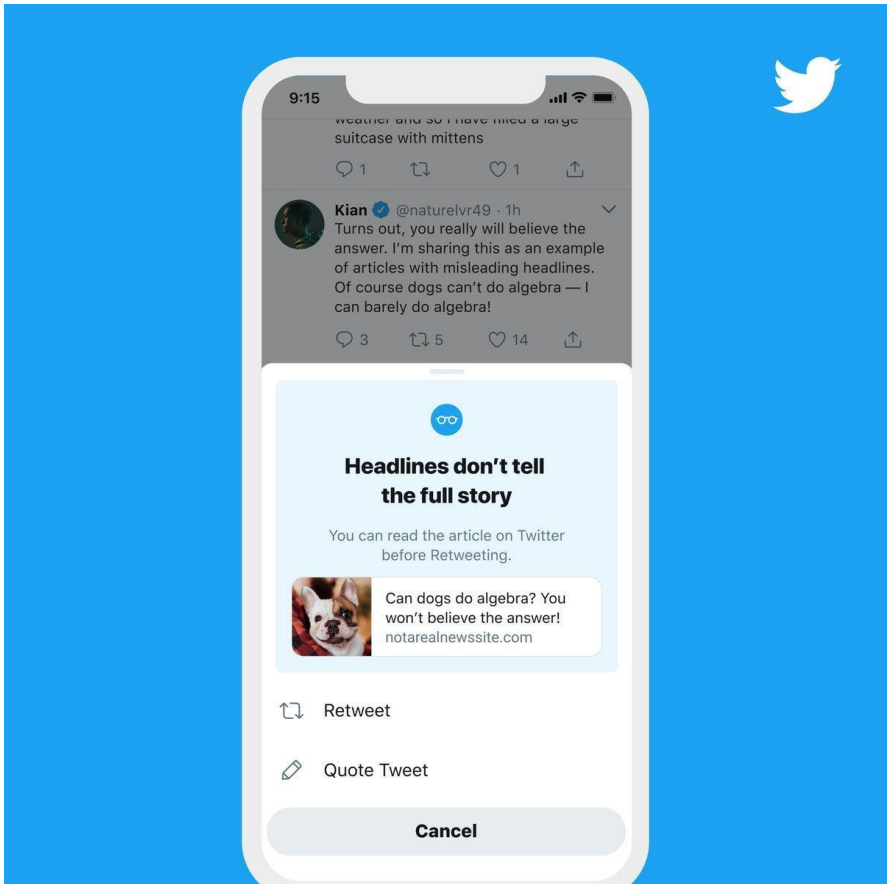


***Immagine 5* - Fonte: Twitter**

Other types of nudging focus instead on social norms, such as warning users that 'most responsible people think twice before sharing an article in their network'. These warnings have proven effective in reducing the proportion of people willing to share potentially incorrect information (And1 e Akesson 2021[12]). Other research has shown that exposing people to injunctive social norms (*what to disapprove of*) increases the likelihood that users will report instances of fake news on social networks (Gimpel 2021[13]).

[12] Simge Andı & Jesper Akesson (2021). "Nudging Away False News: Evidence from a Social Norms Experiment". *Digital Journalism*, 9:1, 106-125. DOI: 10.1080/21670811.2020.1847674

[13] Henner Gimpel, Sebastian Heger, Christian Olenberger & Lena Utz (2021). "The Effectiveness of Social Norms in Fighting Fake News on Social Media". *Journal of Management Information Systems*, 38:1, 196-221. DOI: 10.1080/07421222.2021.1870389

Automation

Another solution deployed in recent years concerns the use of software and algorithms that automatically recognise disinformation and, in some cases, put **labels** on online content to make users aware of the risk of disinformation. The best known example of automation concerns the labels on Facebook and Instagram that signal that a piece of content has been verified, as soon as a fact-check on the topic is detected.

Increasingly, *machine learning systems* are being used to allow large platforms to moderate content shared online automatically and without human intervention. Many social networking platforms used similar systems during the most acute phase of the Covid-19 pandemic: their effectiveness was not always confirmed.

While the advantages of automation are all on the side of speed of intervention and scalability, there are many critical issues regarding the relevance of such interventions: automated systems are not always able to understand the different nuances of textual and visual content, posing the risk of **strong prior censorship**.

Boosting

If *debunking* tries to change **knowledge** and *nudging* tries to alter **behaviour**, *boosting* is a strategy that focuses on the **skills** of users, to enable them to inform themselves in an increasingly conscious manner. It is about boosting, in fact, which aims to **reduce the cognitive, social and emotional weaknesses** that often expose us to disinformation. Experts recognise two broad categories of boosting, namely prebunking and media literacy.

Prebunking

Among the best analysed boosting interventions is undoubtedly what is called "**prebunking**" or "**psychological inoculation**". s the expression suggests, prebunking is opposed to debunking (or fact-checking) because it

presents itself as an intervention that acts in a **preventive** manner with respect to exposure to disinformation, aiming to make us 'immune' to fake news, a manipulated image or a doctored video, before we even come across such content.

Prebunking interventions are based on a strong analogy with **vaccinations** at the medical level: users are 'inoculated' with weakened examples of misinformation and explained the most common manipulation techniques; in this way, they should be able to protect themselves independently when they encounter false content in the future. This is a form of **“psychological resistance against attempts at persuasion, just as medical inoculations build physiological resistance against pathogens”** (Ecker et al. 2022).

Prebunking interventions can be active or passive. The former involve active engagement, usually through online mini-games such asCrunky Uncle, Go Viral, Harmony Square, Bad News.

Go Viral, for example, requires you to play the role of a creator of fake pandemic news: the more engaging and highly viral content you can create, the more points you can accumulate. Between creating a knockout post and spreading an online plot, the idea of the game is to “inoculate” players with the most common manipulation techniques, so that when they encounter them in the future they will know how to recognise and defend themselves.

***Image 6* - Source: University of Cambridge**

Passive prebunking interventions are mostly characterised as short texts or videos that warn the user of manipulation attempts that they will encounter in the future. Many examples of these videos can be found on the Inoculation Science site created by researchers from the University of Cambridge and the University of Bristol. These videos usually have two main components:

1) a **“forewarning”** that serves to activate the user's mental defences against manipulation attempts. For example, he is told: “Watch out when you watch TV. They will often try to manipulate you through a technique called false dichotomy”.
2) a **“preemptive refutation”** that explains how to deal with and reject false dichotomies in the future.

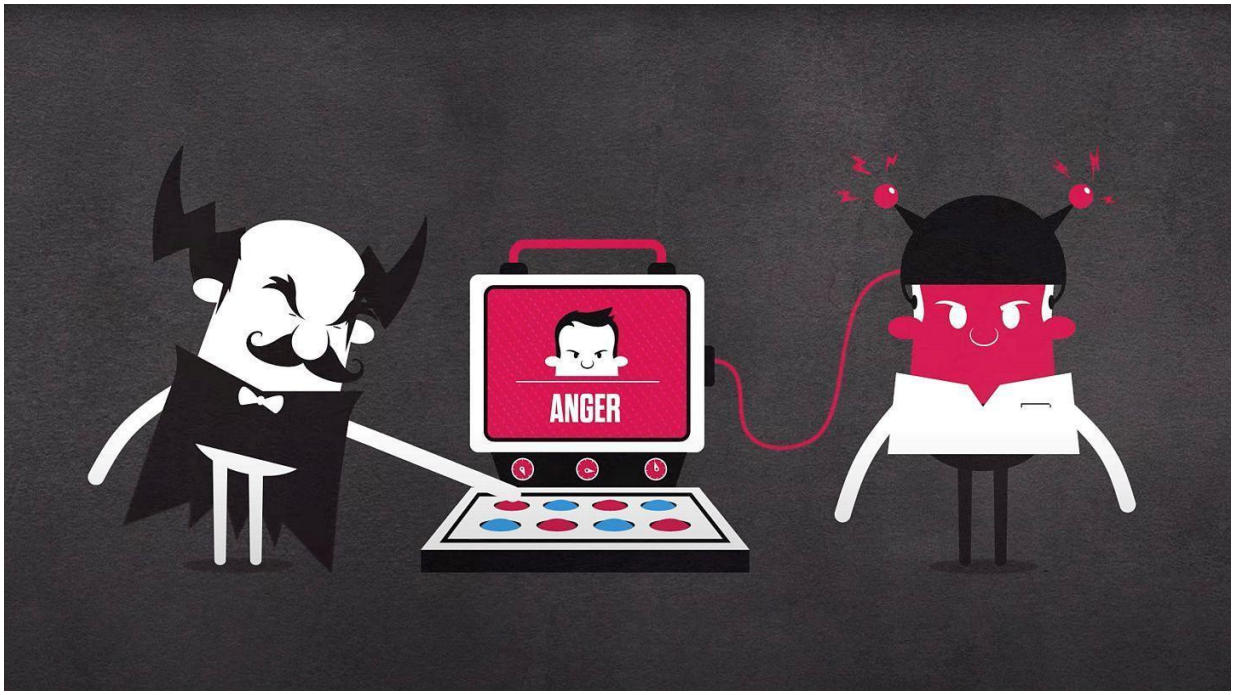


Image 7 - Example of "psychological inoculation through a video on "false dichotomies" produced by the University of Cambridge

A large-scale study involving 30,000 participants on YouTube demonstrated a strong effectiveness of passive pre-bunking: users who viewed a series of mini-videos were less likely to be manipulated in the future. “Our interventions do not focus on what is true or false, which is often questioned. They are effective for anyone who does not want to be manipulated,” explained one of the researchers, Jon Roozenbeek. - “"The inoculation effect is consistent on both liberals and conservatives. And it works with people who have different levels of education and different

personality types”[14]. **This experiment suggests that inoculation interventions can be more effective than debunking and fact-checking, which are often difficult to replicate on a large scale.**

The effectiveness of prebunking derives in large part from **focusing on the deeper techniques and narratives of disinformation**, rather than on individual cases, as fact-checking and nudging does. It also proves to be more scalable, going beyond the easy polarisation or politicisation of online debate. But the most relevant advantage is undoubtedly that of being a **preventive intervention**, capable of focusing everything on empowering users and avoiding the alarmist tones that characterise many other types of intervention.

Media and Information Literacy

Media and Information Literacy has its roots in the critical mass media studies of the 1960s and 1970s when a critical approach to information began to emerge. But it was mainly from 2007 onwards that international organisations such as UNESCO began to promote it as an “umbrella term that incorporates competences relating to Media Literacy, information literacy, news literacy and digital literacy”[15].

Different forms of media and information literacy usually involve interventions in formal contexts (*such as school*) or informal contexts (*such as after-school activities or specific events*). In recent years, a number of platforms have been developed that provide guides and resources to carry out interventions on these topics independently. The best known are the Civic Online Reasoning Initiative of Stanford University, the Newswise project of the Guardian Foundation, il News Evaluator Project of the University of Uppsala, the FreeYou project available in several European languages. We

[14] https://www.cam.ac.uk/stories/inoculateexperiment
[15] Roozenbeek, et al. (2022a), op. cit. (p. 7)

also point out Open the Box which will be discussed in more detail in the third part of this report.

As pointed out in the meta-review conducted by Roozenbeek et al. (2022a), several researches have confirmed that **Media Literacy "is effective in developing lateral thinking and other strategies to better navigate digital news environments"**. In particular, one of the first large-scale studies conducted by the Civic Online Reasoning Initiative confirmed that Media Literacy Education interventions help high school or college youth better evaluate the reliability of online news[16].

One of the main limitations of media and information literacy is its **scalability**: how can we make sure that we reach as many users as possible in a short time? One of the most effective strategies is to rely on **multipliers**, such as teachers and educators, through a **"train of training"** approach. Rather than training the final recipients (*the students, for example*), their educators (*the teachers*) are trained: in this way, a multiplier effect is achieved which is able to reach many more users (*as in the case of Open the Box, illustrated in chapter three*).

Another way to foster scalability is the promotion of literacy projects directly on social media, e.g. by providing advice while looking at a post or about to click on a news item. ne of the largest studies conducted on this strategy showed that providing media and news literacy advice makes users better able to evaluate fake or manipulative news (Guess et al. 2020[17]).

As pointed out by Roozenbeek et al. (2022), some challenges remain for media literacy approaches. In particular, the fact that so far the focus has

[16] Wineburg, Sam and McGrew, Sarah and Breakstone, Joel and Ortega, Teresa. (2016). "Evaluating Information: The Cornerstone of Civic Online Reasoning". *Stanford Digital Repository*. Available at: http://purl.stanford.edu/fv751yt5934

[17] Guess, Andrew M., et al. (2020). "A digital Media Literacy intervention increases discernment between mainstream and false news in the United States and India." *Proceedings of the National Academy of Sciences* 117.27: 15536-15545.

only been on young people, when the problem of information boosting would be relevant for all age groups and, above all, for adults and the elderly.

Chapter 2

The state of Media Literacy in Europe

The European Commission defines **Media Literacy** as “the ability to access media, to understand and critically evaluate different aspects of media, starting with their content, and to create communication in a variety of contexts. Media Literacy covers all media, including television and film, radio and recorded music, print media, the Internet and other new digital technologies used in communication” (Communication 833/2007).

This definition well describes the multi-dimensional nature of Media Literacy, as well as its importance in order to fully express citizenship rights. When we talk about Media Literacy, we are not simply referring to a specific skill, but more to a set of **knowledge**, skills and **practices** necessary for **lifelong learning** and a **critical approach** to the information we receive through different media.

Today's societies are often referred to as information societies, because, more or less consciously, we are constantly in contact with devices that provide us with news, updates, notifications, messages, posts, videos and other content, both informative and uninformative, as already described in Chapter 1.

Compared to the most common meaning, Media Literacy goes far beyond the problem of misinformation and infodemics: it is about conscious access to information, the ability to analyse and evaluate different types of content coming to us from different media, the ability to research sources, recognise useful content, be able to create new content and share it with other people, as also specified by **DigiComp 2.2**, the reference framework for digital competences in Europe. Media Literacy is about asserting one's rights of citizenship and democracy.

Main actors

Given the wide and transversal interest of the issues concerning Media Literacy, **collaboration and partnership between different public and private subjects**, have long been considered an essential element for the realisation of effective and long-lasting Media Literacy projects. For this reason, since the 2000s, the number of subjects involved in the promotion and support of Media Literacy has been increasing in most of the Member States of the European Community. The entities involved in these actions, both in defining policy, methodological criteria and frameworks and in disseminating practices, come from a variety of sectors, including media, education, the third sector, civil society and governments/public institutions.

The first actions of the European Union date back to 1999, when the **Safer Internet** permanent programme was first shared. Its main objective is the protection of minors through the provision of Internet safety tools for parents, teachers and children. In March 2000, the Lisbon European Council emphasised the socio-economic aspects, recognising that "the European Union is facing a quantum leap brought about by globalisation and the new knowledge economy". A strategy was then established, including the e-Learning Initiative, which, with the 2006 integration, began to set itself the goal of fighting the digital divide, starting with a definition of "digital literacy", in order to activate, identify models and disseminate good practices.

Already with the i2010 and e-Inclusion[18] initiatives in 2008, the European Commission started to set up groups of experts from both research and industry to share their experience and guide digital literacy policies to be adopted at European level.

All these efforts to make digital and Media Literacy a key element in the development of the information society in Europe converge in the

[18] On 8/11/2007 the Commission published the Communication *European i2010 initiative on e-Inclusion to be part of the information society*, https://joinup.ec.europa.eu/collection/einclusion/document/eu-communication-european-i2010-initiative-e-inclusion-be-part-information-society

promulgation of the European Audiovisual Media Services Directive[19], which was incorporated into the legislative systems of all EU member states in December 2009. This Directive for the first time defines the need to promote Media Literacy in the regulation of audiovisual systems through the establishment of the **European Media and Audiovisual Action Plan (MAAP)**.

Over the past decade, there have been numerous updates and a multiplication of actors involved in media literacy, as well as investments and networking that enable collaboration and dissemination of new policies. In 2014, the European Commission commissioned the **European Association of Viewers Interests (EAVI)** o study the media education paths taken by the Member States. This non-profit association is mainly concerned with stimulating the emergence of and supporting participation and learning initiatives for digital literacy.

Another objective that has recently become the subject of work by many practitioner networks is to create a single, officially recognised European Community certification for digital competences. Key among these is the work of **All digital** - an association representing communities of practice active at all levels in the development of digital competences - which itself develops projects aimed at the recognition and evaluation of digital competences.

The European Digital Media Observatory (EDMO) on the other hand, is the network established by the European Community in 2020 with the task of coordinating fact-checkers, media literacy experts and academic researchers for the study and analysis of disinformation. In addition to understanding this phenomenon, this network is charged with supporting the transdisciplinary work of different communities of practice and coordinating their intra- and extra-European cooperation.

[19] *Audiovisual Media Directive 2007/65/EC of the Parliament and of the Council*, 11 December 2007, http://ec.europa.eu/avpolicy/reg/avms/index_en.htm (This Directive replaces the Television without Frontiers Directive, DTVSF 89/552/EC).

A network of independent fact-checking organisations was also set up among those actively involved in practices to combat disinformation. Funded by the European Union as a pilot project in the field of "Communication networks, Content and Technology", the **European Fact-Checking Standards Network (EFCSN)** project aims to discuss and define the standards of independence, transparency and methodological and journalistic quality that should guide our efforts to combat disinformation. This discussion was translated into a Code of Professional Integrity for European fact-checkers approved by 44 European organisations.

Also in the wake of the Covid-19 pandemic and the UN declaration of infodemic status, the European institution responsible for regulating media and audiovisual content services, the **European Regulators Group for Audiovisual Media Services (ERGA)**, was mandated in 2021 to create an action group for the dissemination of Media Literacy. This reflects the growing recognition and role of national agencies for digital media literacy activities and their responsible and conscious use. The objectives the group has set itself are in fact mainly three:

- Supporting the European Commission in developing a set of tools to **assess, measure and organise initiatives around content sharing platforms** (VSPs), in accordance with the provisions of the European Media and Audiovisual Action Plan
- Developing a **set of criteria for regulators** to identify and qualify best practices in digital literacy;
  Finding examples of best practice in Media Literacy initiatives led or supported by regulators, to provide inspiration to others and disseminate models for action.

Policy Documents

Made even more urgent by the Covid-19 crisis, the goals required by the 2030 Agenda, and in particular the green and digital transformation, must be facilitated by media and platforms. This is why the **Media and Audiovisual**

Action Plan (MAAP)[20] is committed to fostering European cultural and technological autonomy by developing tools for citizenship. The actions carried out by MAAP are structured around three themes:

- the recovery from the economic crisis caused by the pandemic;
- the transformation of the media industry in view of the double transition (*green and digital*);
- the enabling of innovative and competitive sectors and the empowerment of citizens.

The Media Literacy Action Plan thus envisages the creation of a "media literacy toolbox" for the Member States, stemming from the media literacy provisions and obligations in the updated version of the Audiovisual and Media Services Directive (AVMS).

One of the main initiatives of the Commission's work programme for 2020 was the **European Democracy Action Plan (EDAP)**[21]. In addition to establishing measures to promote free and fair elections, it focuses on strengthening media freedom and countering disinformation. The Commission will gradually implement the EDAP until the end of 2023. Together with the new European Rule of Law Mechanism, the new strategy to strengthen the application of the Charter of Fundamental Rights, the MAAP and the package of measures taken to promote and protect equality throughout the EU, this Plan is a key element of the new impetus for European democracy to meet the challenges of the digital age.

The Code of Conduct (CdP) is a self-regulatory instrument signed by online platforms and advertisers in October 2018 (with further additions in 2019 and 2020) to tackle the spread of online disinformation. In September 2020, the Commission published a first assessment identifying shortcomings and gaps

[20] The latest version of the European Media and audiovisual Action Plan (MAAP) is available for download: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0784&from=EN
[21] The Commission published the European Democracy Action Plan (EDAP) on 3/02/202): https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0790&from=EN

in the implementation of the CdP commitments by the Member States. Furthermore, on 26 May 2021, it published a communication in which it provided guidance on how the Code could be strengthened to become a more effective tool to counter disinformation. The guidance builds on the direction set by EDAP for the creation of a more transparent, secure and trustworthy online environment. In addition, it lays the foundation for a solid framework for monitoring the implementation of the Code.

In June 2022, a specific version of the **Code of Conduct on Disinformation** was published, signed by 34 actors, including companies such as Google, Adobe, Microsoft, all major social networking platforms such as Meta, TikTok, Twitch, Twitter, Vimeo, and actors active on the front line against disinformation, such as NewsGuard, WhoTargetsMe e ScienceFeedback.

The new Code aims to achieve the objectives of the Commission's Guidance presented in May 2021 by defining a broader range of commitments and measures to counter online disinformation. It is up to the signatories to decide which commitments to enter into, and it is their responsibility to ensure the effective implementation of their commitments. The Code is not endorsed by the Commission, but the Commission has set out its expectations in the Guide and considers that, overall, the Code meets them. Key objectives of the code include **demonetisation**, to reduce financial incentives that end up promoting disinformation; **transparency** for policy content; and **empowering users and researchers**.

The Better Internet for Children Strategy[22] brings together the European Commission, Member States, mobile phone operators, mobile phone manufacturers and social networking service providers to provide concrete solutions for a better Internet for children. Among other objectives, it aims to increase awareness and empowerment, including teaching digital literacy and online safety. It also aims to unlock the market potential of interactive,

[22] 02/05/2012 version of the Better Internet for Children Strategy.

creative and educational online content. The Commission also co-funds Safer Internet Centres in the Member States (*coordinated by Insafe*), with the Better Internet for Kids portal as a single access point for resources and sharing of best practices across Europe. Their main task is to raise awareness and promote digital literacy among children, parents and teachers. They also fight against online child pornography through their network of hotlines (INHOPE).

With respect to the outlook for the coming years, the **Digital Education Action Plan (2021-2027)** was drafted, which supports the sustainable and effective adaptation of Member States' education and training systems to the digital age. Addressing the challenges and opportunities of the COVID-19 pandemic and offering a long-term strategic vision, it aims to develop high-quality, inclusive and accessible European digital education. The plan contributes to the Commission's priority 'A Europe fit for the digital age' and is a key element in realising the vision of a European Education Area by 2025. It contributes to the objectives of the European Skills Agenda, the European Social Pillar Action Plan and the **"Digital Compass 2030: Europe's way to the digital decade**".

Iniziatives

In addition to setting up subjects, funding partnerships, networking and policy-making, the European Commission has been active for years in launching and supporting numerous initiatives around the topic of Media Literacy. With the aim of stimulating media discourse, dissemination and dissemination, but, above all, to sensitise the social fabric and institutions to the importance of digital media literacy and education, several events and recurrences have been created.

These include the **MEDIA Programme**, which was launched in 2007 to reiterate the need for Media Literacy and in particular to create a bridge between educational institutions and national film and festival institutions in order to engage the younger generation. In 2008, the first **European Media**

Literacy Conference was convened. Promoted by EAVI *(European Association for Viewers Interests)* n collaboration with AIART (*Italian Association of Radio and Television Listeners*) and EURISPES, the conference is aimed at exploring European policies of active involvement and participation of citizenship in the media, whose theme in the last edition was in fact "Citizens and Media - The role of mass media in citizens' participation in democratic life".

The European Commission has also set up a calendar of anniversaries to stimulate communication and recognition of practitioners' activities, as well as to create appointments to take stock of the state of Media Literacy in Europe from year to year and to hear from leading experts, researchers and active members of the community of practice.

Among these, and in open dialogue with the UNESCO initiative of Global Media Information Literacy Week, **the European Media Literacy Week (EMLW)** was established in 2019. A week to activate the dissemination of active projects at the European level: each reality active in digital literacy is in fact incentivised to organise during the EMLW its own promotion and dissemination events, to celebrate and discuss Media Literacy involving citizenship. During the week, the European Commission in turn organises a series of meetings, discussion panels and conferences, which take place in a European capital and can be enjoyed online in blended mode. The first week was inaugurated in Brussels in March 2019. In April 2020, it took place in Zagrabia, Croatia, under the theme “Media Literacy in an ever-changing world: Integrate. Gather. Empower”. The 2021 edition, coordinated by the European Commission's Directorate-General for Communication Networks, Content and Technology, took place online on 27 and 28 October in the context of UNESCO's Global Media and Information Literacy Week. On this occasion, EDMO organised the workshop “United against Disinformation: EDMO's work on media literacy”. Also in 2022, EMLW was organised online under the theme 'Media Literacy in times of crisis - Promoting trust and cohesion'. Among the supporting initiatives to mark European Media Literacy Week 2022, the European Fact-checking Standards Network (EFCSN) highlighted a number

of educational initiatives developed by fact-checkers. From online games to podcasts and training courses for students, the diverse group of projects aims to help equip the public with the tools to recognise - and refute - false information.

Another initiative that actively involves all active Media Literacy projects every year in February is **Safer Internet Day (SID)**. This event has a long history: in February 2023 it saw its 20th edition. Initiated as an initiative of the EU's SafeBorders project in 2004 and taken over by the Insafe Network[23] as one of its first actions in 2005, Safer Internet Day has grown beyond its traditional geographical area and is now celebrated in some 180 countries and territories worldwide. From cyberbullying to social networking to digital identity, each year Safer Internet Day aims to raise awareness of emerging online issues and concerns around the world. The aim of the SID is also to create a platform for European communities where countries and international organisations can present their local, national and international Safer Internet Day events and actions. The multilingual platform enables young people, their teachers and families to make the best possible use of online technology. It is a space where experts from the Internet safety community can communicate with the public and exchange ideas, knowledge and experiences.

Data and research

Among the main mappings that can help us outline the state of Media Literacy in Europe, an excellent starting point is the report that the Council of Europe with the European Audiovisual Observatory (EAO) shared in 2016. The aim of this research was in fact to provide a mapping and description of the most significant projects for the promotion of media literacy in the EU-28 Member States, as of January 2010, with national or regional coverage.

[23] Insafe is a European network of Safer Internet Centres (SIC). Each national centre runs awareness-raising and educational campaigns, operates a helpline and works closely with young people to ensure an evidence-based, multi-part approach to creating a better Internet.

In line with the competences of the European Audiovisual Observatory, the report "**Mapping Media Literacy Practices and Actions in the EU-28**" focuses on projects concerning media services provided over electronic communication networks and information services. Projects promoted by print, radio and offline media were excluded from the scope of the report, unless these entities were only members of a partnership. Furthermore, considering the existence of specific studies on actions related to school programmes, the European Commission asked to include only media literacy actions that took place outside schools.

The main findings that can be highlighted from this report are:

- Almost a third (305) of the 939 main media literacy stakeholders identified in the 28 EU countries were classified as "**Civil Society**" and all countries recorded main stakeholders from 'Civil Society'. The next most common categories were 'Public Authorities' with 175 stakeholders and 'Academies' with 161 stakeholders assigned to these sectors.
- Providing frontline support to citizens is a priority for media literacy projects. The most common project type is in fact categorised as "**Resources**", with 173 out of 547 projects classified as such. The second most common project type is 'End User Involvement', with 107 projects. Combined, these two project categories account for more than half of the 547 media literacy projects highlighted for this study, which suggests that **providing frontline support to citizens is a priority for media literacy projects** (*outside the school system*) and this is also reflected in several countries. The category "resources" is also the most frequent among the 145 'case study' projects and accounts for almost a third (48) of the projects. The most common project type is 'Campaigns', with 26 projects classified as such.
- Skills related to "**critical thinking**" are the dominant ones in the projects in this study: addressed by 403 of the 547 projects; while

media literacy skills related to “media use” were addressed in 385 of the 547 projects. Perhaps somewhat reassuringly, skills related to 'critical thinking' categories, which are most closely associated with **content evaluation**, are all addressed in over 100 of the 145 'case study' projects, while skills related to online safety are present in over half of the projects (82).

The media literacy skill least present in the 145 “case study” projects is “intercultural dialogue”, present in 46 of the 145 “case study” projects. This includes skills related to challenging radicalisation and online hate speech. Therefore, future media literacy projects could explore the whole area of “intercultural dialogue”.

- **Collaboration** is a key aspect of a meaningful media literacy project. More than a third (228 out of 547) of the submitted projects were classified as 'cross-sectoral collaboration', with each individual country reporting some level of collaboration. In total, nine countries reported that all five of their “case study” projects were the result of cross-sectoral collaboration, and a further seven countries reported that four out of five of their “case study” projects were the result of collaboration. This clearly shows that there is a trend towards cross-sectoral collaboration in relation to significant media literacy projects.
- The vast majority of projects (409 out of 547) were classified as being of **national importance**, while 95 were classified as regional and half (43) as European/international. The relatively low level of European/international scope of the 547 projects submitted could indicate the possibility of increasing pan-European collaboration on media literacy projects.

Finally, the results of the **Media Literacy Index 2022** are worth mentioning. This report was born in 2017 in response to the emerging phenomena related to disinformation and post-truth, with the intention of measuring the level of resistance of different European countries and to help find solutions. The fifth edition, which came out in a context also characterised by the Covid-19 pandemic, assessed 35 European countries and, for the first time, 6 non-

European countries, based on the assumption that indicators relating to media freedom, quality of education, interpersonal trust and digital participation can act as predictors of a society's level of resistance to fake news, post-truth and related phenomena. These four indicators were used in the evaluation and ranking by taking different weights, according to the following table:

Methodology of the Media Literacy Index	
Indicators	**Weight**
Media Freedom indicators	
Freedom of the Press score by Freedom House	20%
Press Freedom Index by Reporters without Borders	20%
Education indicators	
PISA score in reading literacy (OECD)	30%
PISA score in scientific literacy (OECD)	5%
PISA score mathematical literacy (OECD)	5%
Tertiary Education enrolment (%) (World Bank)	5%
Trust	
Trust in others (World Values Survey)	10%
New forms of participation	
E-participation Index (UN)	5%
Table 1. *The table shows the methodology of the media literacy index with the groups of indicators, sources and their respective weight (importance). The data are converted into standardized scores (z-scores) from 100 to 0, highest to lowest.*	

Image 8 ***- Source: Media Literacy Index 2022***

Based on these indicators, the Media Literacy Index 2022 shows that Finland, with 76 points, continues to lead the ranking out of 41 countries. This is followed by Norway with 74 points, Denmark in third place with 73 points, Estonia with 72 points, Ireland and Sweden with similar scores of 71 points each, in fifth and sixth place respectively, where the differences are minimal. At the bottom of the ranking, Georgia with 20 points occupies 41st place, preceded by North Macedonia and Kosovo with similar scores of 23 points, in 40th and 39th place respectively. As can be seen from the following map, the indicators formed 4 clusters within which the states surveyed fall:

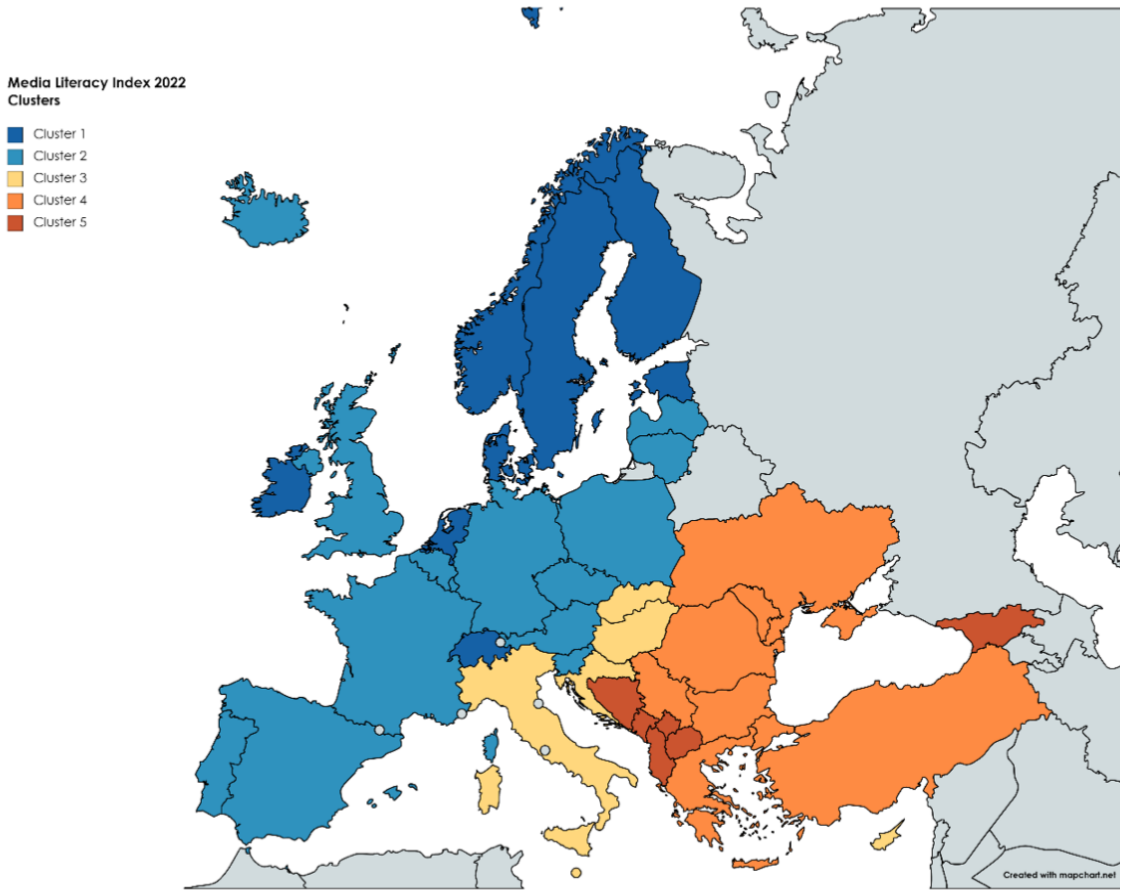


Image 9 ***- Source: Media Literacy Index 2022***

The results of the expansion of the Index in this latest edition show that most of the additional countries perform very well in the ranking. Canada (*7th place out of 47 countries with 68 points*) and Australia (*10th place with 63 points*) are the best performers in the additional group. South Korea (*17th place*) and the USA (*18th place*) have identical scores of 60 points and Japan is in 23rd place with 56 points. All three countries - South Korea, the United States and Japan - are in the 2nd group with most Western and Central European countries. Israel is in 32nd place with 41 points and in the 3rd cluster with the Central and Southern European countries.

Chapter 3

Case-study: Open the Box

In the previous chapters, we have tried to outline, starting with the concept of disinformation, what the **main strategies of information resilience** are and how these are translated into European initiatives, guidelines and policies. In recent years, many tools for combating disinformation such as toolkits, software and platforms have been launched, often thanks to the involvement of institutions, organisations and communities of practice that create media and information education pathways.

Among these, we would now like to focus our attention on the Italian media and data literacy project Open the Box, which came to life as the first online media education project for teachers, students and secondary school pupils in 2020, right on the cusp of the lockdown due to the Covid-19 pandemic.

In 2020, the Guidelines for the compulsory teaching of Civic Education in schools came into force in Italy, in accordance with the provisions of Law 92/2019, which establishes the teaching of 33 hours on topics relating to the Constitution, sustainable development and Digital Citizenship. The latter part provides precisely that “students will be given the tools to consciously and responsibly use the new media and digital tools. With a view to developing critical thinking, raising awareness of the possible risks associated with the use of social media and surfing the Net, and combating the language of hatred”.

Open the Box was thus born in 2020 from an idea of the team of Dataninja, a company dedicated to spreading the culture of data and structuring online training courses from the basics of data literacy to the more advanced disciplines of data visualisation and data analysis. The 2020-22 phase of the

project was co-funded by the Open Society Foundation, which enabled the realisation of the platform and free training courses for teachers and educators nationwide. The realisation of the content was directed and devised by Nicola Bruno, journalist and media and data literacy expert, together with a multidisciplinary team comprising, at the forefront: Federica Arenare, project manager, didactic project designer and media educator; Andrea Nelson Mauro, responsible for the creation of collaboration networks, partnerships and institutional relations; Stefano Moriggi, lecturer in didactics and special pedagogy and scientific advisor of the project; and a team of people who contributed to the creation of the didactic content, the digital platform and the graphic design.

The educational methodology

At the explicit wish of the funding body (Open Society Foundation), the courses designed during the period 2020-22 were made available online **completely free of charge**. The primary target group were teachers, educators and all those involved in training and education with girls and boys aged 11 to 18, both in formal and informal[24] contexts. The course is made up of 9 lessons and 6 thematic in-depth studies, based on innovative teaching methods and interactive formats in blended mode, thus combining synchronous and asynchronous online training with in-presence training.

During the design of the courses, an educational methodology was developed that focuses on innovative methods such as the inquiry based learning and the flipped classroom, the ecological approach and hacker culture.

Today's information landscape is immersed in the dimension that information philosopher Luciano Floridi calls **onlife** (2014), in which the distinction between analogue and digital is overcome. It is a true information

[24] Several experiments have already been initiated with primary school students, as well as in out-of-school contexts.

ecosystem, as defined by experts Whitney Phillips and Ryan M. Milner, according to whom disinformation should not be framed as an anomaly, but as a true "**system crisis**", both informational and environmental.

Just as when analysing problems related to the current climate crisis, when talking about information disorder it is necessary to focus on the different realities that operate in digital media environments as in a network system. One must also not overlook the interactions between the large and small nodes that inhabit this network and the impacts that these interdependent relationships have on the dissemination of information.

In addition to the ecological one, that of the hacker is another metaphor that allows us to change the perspective of observation and analysis, as much of the information ecosystem as of the practices useful to inhabit it. When talking about hackers, a premise is always necessary, due to the sometimes improper use of the term and, above all, the imaginary that has been created around this figure. That of hackers is an image associated with many prejudices, which often see them as isolated figures, computer experts engaged in theft and illegal acts. That there are hacking actions aimed at collecting money and swindling is beyond doubt. But hacker hacking is first and foremost - as Stefano Moriggi and Mario Pireddu[25] explain - "a cognitive and operational approach not limited to the development of a code', but based on principles such as 'problem solving, co-construction of artefacts and mutual help, confrontation and control, trust in one's own learning abilities and anti-authoritarianism based on respect for real skills". Moriggi and Pireddu emphasise how these values are "doubly linked to the development and dissemination of digital information" and thus "present themselves as effective antidotes to the human - too human - drifts of contemporary *misinformation*".

[25] Moriggi, S. and Pireddu, M. (2017), "Vivere e non sapere. Fenomenologia della post-truth tra educazione e comunicazione. / To live and not Know. The Phenomenology of Post-Truth between Education and Communication". *Future of Science and Ethics*, 2(1), 96-105.

The values of hacker culture also fit in perfectly with scholars Phillips and Milner's proposal to look at current infodemics from an ecological point of view. Such a view allows us to reposition the educational challenge of Media Literacy, not only as a scientific-technological issue (*learning the basics of statistics and the use of certain software*), but as a **primarily cultural issue** of awareness of contemporary information dynamics. Within this framework, students should be trained to interpret data and information critically, understanding which processes and tools enable us to be able to search, evaluate and manage digital content in a more conscious manner.

Based on these approaches, the teaching methodologies of Open the Box were mainly inspired by **inquiry-based learning** and the flipped classroom. The former, as its name suggests, starts from an inquiry-based learning model: starting with the creation of real-world connections, case studies and examples, it proceeds through exploration and the production of questions. It is a pedagogical approach, promoted and rated as one of the most effective by the European Commission, which encourages students to engage in problem-solving and experiential learning. Similarly, the flipped classroom, or **flipped classroom**, is a methodology that is based on overturning the roles and learning phases of traditional lessons, stimulating an initial phase of theoretical study developed individually by students, followed by a phase in which learning is tested together with teachers through exercises, applications and tests.

The intervention format

The Open the Box paths are articulated along two thematic lines: **media literacy** and **data literacy**.

The **Media Literacy** pathway starts with analysing the sources of the content we find online, presenting new languages and discovering practical tools to "open the black boxes of the web". Lessons in the Media Literacy track include the following topics: Sources, "Fake" news, Manipulated images, Meme culture, Deepfakes and synthetic media.

The **Data Literacy** course starts instead with what data are, what they can be used for, how to read them and how they can be represented. The Data Literacy course starts with lessons that aim to develop critical thinking in reading data (Start Here: The Data) and visualisations (Graphs and Dataviz), and then moves on to a more operational phase in which students are invited to build their own dataset (My First Dataset).

Image 10 - ***The topics covered by Open the Box.***

Source: Open the Box

From the very beginning, Open the Box was designed as a Media Literacy Education intervention that went beyond simply providing resources or toolkits. A solution, the latter, adopted by many, but which often comes up against a major problem: **teachers and educators are not adequately trained** to carry out Media Literacy activities on their own.

For this reason, Open the Box was built on three pillars:

1) Teacher training
2) Teaching materials for teachers and students
3) Challenge among students

Immagine 11 - ***The three pillars on which the Open the Box approach is based. Source: Open the Box***

The training part was crucial to achieving the project goals because it effectively empowered teachers and educators to independently organise Media Literacy activities in their own contexts.

In 2020-22, the training was offered free of charge in blended mode: partly **self-paced**, partly **live**. For each training course, an online course was created for self-paced use lasting about 5 hours. Each course contains video lectures, quizzes to measure acquired competences, insights and resources. After the asynchronous part, a practical activity is then proposed to be carried out during a **live workshop** under the guidance of Open the Box tutors. During these workshops, a classroom lesson is simulated with the roles reversed: the teachers play the role of the students, while the Open the Box tutors play that of the teachers. In this way, participants are not only able to put into practice the knowledge acquired during the self-paced training, but also learn the most effective methodology and modes of engagement for the students.

All stages of the training were monitored to measure its effectiveness with questionnaires testing the possession of specific skills **before and after the training**. The results of the monitoring show that at entry teachers have low or poor skills, while **at the end of the training they reach medium-high levels**,

as in the case of the ability to assess the reliability of a photo (+47%) and a meme (+35%).

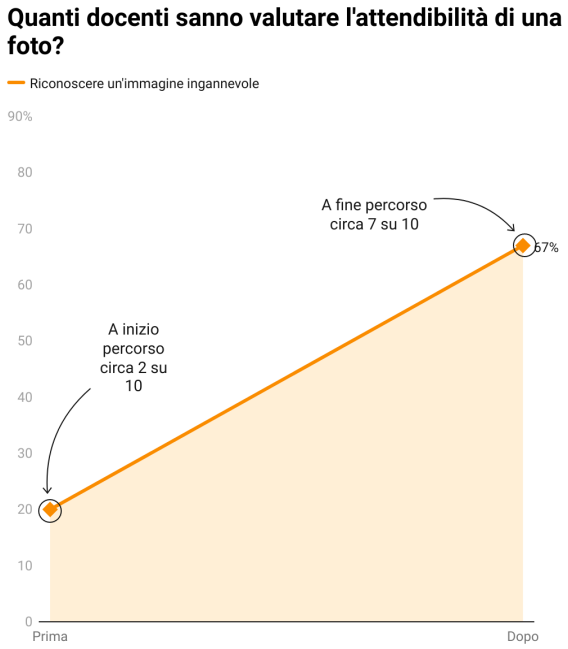


***Image 12* - Impact of Open the Box training on teachers. It greatly increases ability to be able to assess the reliability of a before-and-after photo and training. Source: Open the Box**

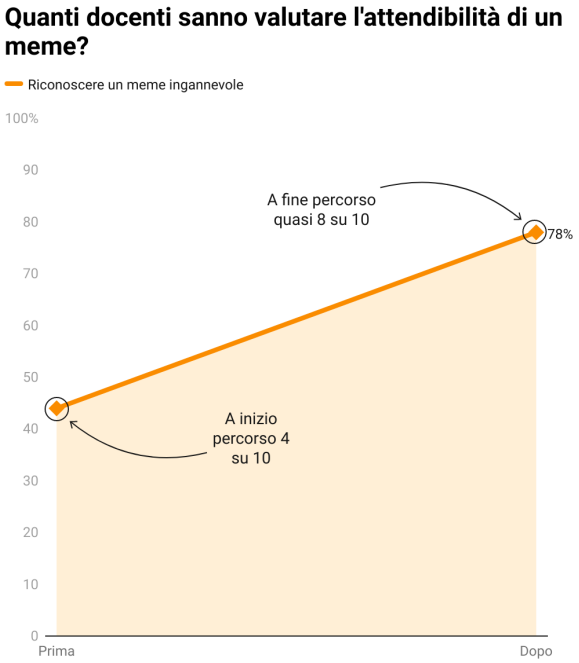


***Image 13* - Impact of Open the Box training on teachers. It greatly increases the ability to be able to assess the reliability of a meme before and after the training. Source: Open the Box**

Each course then offers a series of **teaching materials** that have been designed in an innovative way, with a strong **pre-bunking debunking** component. That is, on the one hand, students are given the tools to independently verify online content, just as a fact-checker would do. On the other hand, a large number of real-life examples of disinformation are proposed and 'inoculated' to students in both passive (*presentations*) and active (*quizzes, simulation activities*) modes. In this way, an attempt is made to make them 'immune' when they encounter similar phenomena of disinformation in the future.

The teaching materials were differentiated according to four different types of activities:

- **Engagement** - The lesson begins with a quiz created with the Kahoot! platform, which allows the students to create an initial engagement phase, to introduce the themes of the lesson and to trigger critical reflections on the ways in which we naturally approach the content we find when surfing online;
- **Context and tools** - This is followed by the more theoretical part, which argues the themes at the heart of the lesson, but also proposes the tools useful for analysing and searching for reliable online sources and exploring case studies, to be examined together;
- **Group activities** - Each lesson is then associated with 2 to 4 activities, to put into practice the content learnt and test understanding and use of the tools illustrated;
- **Evaluation** - A test and evaluation questionnaire, with 10 closed-ended questions, hosted on the Typeform platform. The results of the test are available and downloadable on the Open the Box platform, so that they can also be used as an assessment method in the classroom.

The third pillar of Open the Box are the **challenges**. Each route ends by actively involving all the teachers and students who took part in the previous activities. The challenges are designed to test, on the one hand, the possession of basic media and data literacy skills and, on the other hand, to

also test the students' creative skills. Students are presented with real-life cases of misinformation or manipulation to be analysed - also using the tools presented in the lesson - and then correctly evaluated. They are then asked to create content to counter misinformation, such as fact-checking articles, memes or manipulated images.

Immagine 14 ***- An Open the Box challenge of "meme generation". Source: Open the Box***

In the 2020-22 period, Open the Box reached:

- **21.326 students** between the ages of 11 and 18
- **4326 teachers and educators**

A total of 478 Media Literacy activities were completed in both formal (*schools*) and informal (*events, associations and other non-profits*) contexts. Data on students also confirm a significant improvement on entry and exit skills, both in terms of evaluating information sources and visual content.

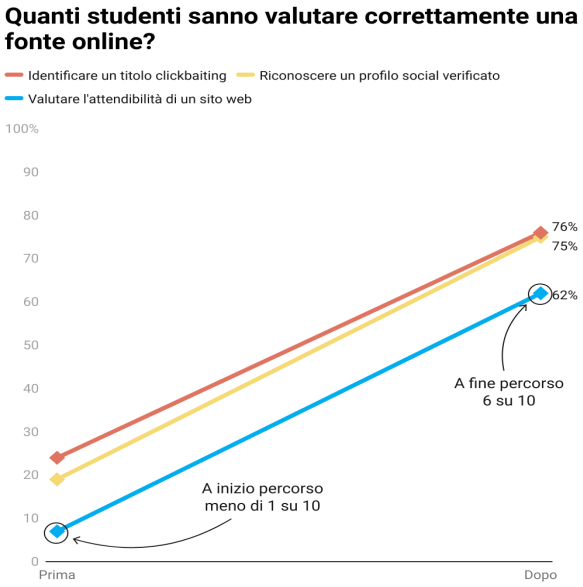


***Image 15** - Impact of Open the Box training on students. The ability to assess the reliability of an online source before and after the Open the Box materials is greatly increased. Source: Open the Box*

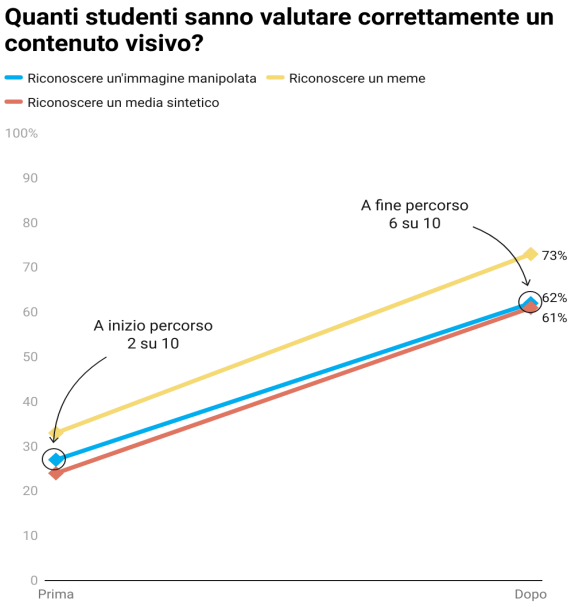


***Image 16** - Impact of Open the Box training on students. Increased ability to be able to assess the reliability of visual content before and after intervention with Open the Box materials. Source: Open the Box*

CHAPTER 4

Recommendations: How to design effective interventions to counter disinformation

The era of digital disinformation poses new challenges for media literacy interventions.

After 2016, the expressions “fake news” and “post-truth era” took centre stage in the public debate and, on the wave of the resulting “moral panic” many “fake news” interventions were launched to learn how to distinguish “true from false”.

However well-intentioned they may have been, these interventions did not take into account all the distinctive aspects of disinformation, whether communicative, cognitive, social or emotional.

Starting with recent literature, in this report we have attempted to reconstruct the most up-to-date picture of **how disinformation works, why it spreads and how it can be corrected** (*chapter 1*). Together with the **European mapping, evaluation and policy documents** (*chapter 2*), this research is crucial in order to point interventions against disinformation in the right direction.

Precisely on the basis of the latest scientific evidence and the most recent national and European guidelines, **Open the Box** (chapter 3) has built a model of educational intervention that brings together the fact-checking (*debunking*) approach with those of boosting, in particular *prebunking*, critical thinking and Media Literacy. After three years of experimentation, Open the Box represents a privileged observatory for the construction of effective interventions against disinformation.

From the lessons learnt in this three-year period, we share **five recommendations** and **good practices** that we hope will be of help to those who, in the future, will start designing interventions to counter misinformation.

1) **Adopt an ecological approach**. Always try to go beyond easy determinism ("*the internet makes fake news spread*") and promote an empowering attitude for all actors involved in the information process, including individual and collective actors, institutions, platforms and digital spaces.

2) **Consider the cognitive, emotional and social factors of disinformation.** Behind misinformation there is not only a lack of information or ignorance, but also cognitive, social, cultural and emotional factors that must be properly taken into account to avoid designing partial or ineffective interventions.

3) **Mix different strategies**. Disinformation cannot be combated with a single approach. You need multidimensional interventions that, at the educational level, work on knowledge (*debunking*), behaviour (*nudging*) and skills (*prebunking*).

4) **Reverses the lesson format**. Propose innovative activities according to the flipped-classroom model and inquiry-based learning, which are well suited to research and source-checking activities and the conscious use of online information. Promote a culture of cooperation and interaction, in line with the principles behind hacker culture and ecological thinking.

5) **Multiply your impact**. Identify what can be a multiplying factor in your area of intervention: in schools, create programmes for teachers; in out-of-school activities, invest in training educators; create formats that can be easily exported to informal contexts (*festivals, events*).

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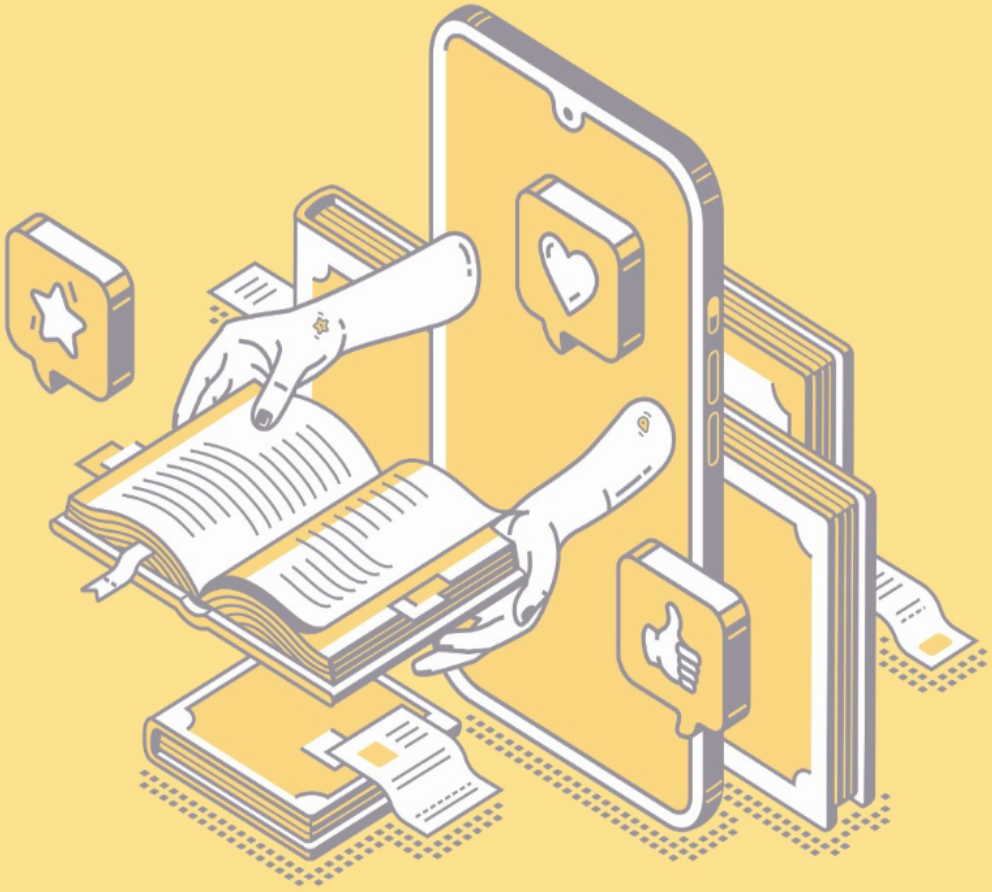

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The authors collaborated equally on the report. Nicola Bruno in particular drafted chapters 1 and 4. Federica Arenare wrote chapters 2 and 3.

Citizens, Equality, Rights and Values programme

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