



FIGHTING DISINFORMATION: Benchmarking Education Initiatives in Spain

JOSÉ JUAN VERÓN LASSA¹, BELÉN SANCHO-LIGORRED¹, BRENDA PÉREZ-ZAPATER¹

¹ Universidad San Jorge, España

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ABSTRACT

Disinformation is a significant problem affecting society on both individual and collective levels, impacting emotional, psychological, and national security aspects. Due to the lack of a standardised response from educational administrations, civil society initiatives have increased to highlight the issue's severity and equip young people with essential tools. This research identifies, analyses, and compares recent initiatives in Spain focused on educating children and young people using a qualitative case analysis methodology. The study emphasises the need for innovative, compulsory, and cross-cutting educational initiatives from an early age, addressing the uncoordinated responses of public and private institutions.

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1. Introduction

Disinformation is as old as humanity itself. Some authors point out how certain classical myths are, in fact, examples of disinformation that have gone down in history as universal legends. Although the concept did not exist as such, disinformation was used as a tool to gain power, strengthen the prestige of a king or generate fear among enemy forces. The term became popular in the 1950s to describe an intelligence technique used during the Cold War.

Throughout history, the means of dissemination have changed. The invention of the printing press meant that disinformation spread more quickly than ever before. It has become increasingly sophisticated and rapid, spreading depending on the technology available at any given time.

Why, then, does disinformation seem to be something new for which society is unprepared? In a way, it is because of the exponential progress of technology. Fire, the wheel, steel, the printing press, the internet... every technological milestone has led to a leap forward. This fulfils Moore's Law, according to which historical progress has followed a sustained upward curve since the first industrialisation, a curve that has steepened significantly since the computer revolution. New studies consider that this theory has been superseded by a higher scale in an intensive and expansive way, which could exceed the natural adaptive capacity of human beings.

Disinformation "is not in itself a new phenomenon" (Gelfert, 2018, p. 93). But its rapid circulation today makes it novel. Throughout history, disinformation has used favourable technologies, but in a context in which societies have evolved at the same pace. Today, societies are unable to keep up with its evolution, which is one reason (though not the only one) why it has become one of the main political, social and global security problems.

In this context, young people are considered a risk group due to their media inexperience, which makes it difficult for them to detect deception with certainty.

Media consumption has changed, and access to information is direct, without the intervention of sources with codes of ethics, which increases risk and vulnerability. However, no educational programmes are being implemented to prevent this. Meanwhile, disinformation generates polarisation and social erosion, as well as affecting the physical and mental health of young people.

2. Theoretical Framework

This research is based on the concept of disinformation, which encompasses any dissemination of false or inaccurate information that distorts the facts, regardless of the objectives pursued.

Some institutions, such as the European Commission, define disinformation as any false or misleading information intended to deceive, whether for financial or ideological gain, and which may cause public harm (Congress of Deputies, 2023). The concept of disinformation, in any case, includes other more specific terms such as hoaxes or fake news.

Another aspect that is of shared concern to authorities and researchers, although there is no consensus on the diagnosis, is the impact that disinformation has on people. Some scholars point out that "there is evidence of the negative effects of using social media to spread disinformation" and that this has "harmful consequences for global health and well-being" (Pulido et al., 2020, p. 2). "Disinformation has a negative impact on public health and safety. It erodes democracy and certain fundamental rights, which cannot be taken for granted and must be protected" (Congress of Deputies, 2023).

Others focus on social and political aspects (Benavides Vanegas, 2020; Blanco-Alfonso et al., 2022). Disinformation is particularly harmful in emergency situations such as COVID-19 or the jihadist attacks in Europe. The polarisation generated or fuelled by disinformation on social media causes tension and an increase in violence.

In this context, society has gone from being a recipient of disinformation to being its generator and essential vehicle. This is because it circulates on social media and messaging groups, which are relevant contexts because, depending on who sent the message, it can "reduce critical faculties and position the reader" (Pangrazio, 2018, p. 11).

Disinformation follows an incremental logic from anonymous websites that are first amplified in closed networks, then in organised groups, and finally in social media and the mainstream media. In fact, applications such as WhatsApp encourage "the exchange of content, which increases the

confirmation bias of the adolescents surveyed in an environment of trust that relaxes their judgement about the reliability of the content received" (Herrero-Diez et al., 2020, p. 11).

On networks such as X, false content is shared more than true content, and people are more likely to share false information, "despite individual and network factors that favour the truth" (Vosoughi et al., 2018, p. 1151).

In this context, the media has lost its influence as an intermediary between citizens and reality. It has been weakened, and various reports point to widespread mistrust of the media among the population. According to the May 2021 Eurobarometer, Spanish citizens distrust their media more than the average for EU countries (European Commission, 2021).

For UNESCO, journalism is "an essential element of our lives" and key to "strengthening the media" now and in the future (UNESCO, 2020). The role of the media in mitigating the effects of disinformation is indisputable, but it can also be observed how they help to spread it, even when their purpose is to correct it (Tsfati et al., 2020, p. 158).

On the other hand, some experts point out how we have moved from an informed society to a "society of infoxication or noise" (Tejedor Calvo et al., 2016, p.135). The overabundance of information requires citizens to have the ability to sift through content.

Ramírez Corzo argues that human beings are incapable of filtering the information they receive on a daily basis, leaving them exposed to platforms that have the power to organise content. He argues that it is necessary to protect fundamental rights and prevent false information from continuing to build "an unlimited post-truth culture" (Ramírez Corzo, 2019, p. 401). In this regard, technology industries should play a more active role in combating this phenomenon (Bustos & Ruiz, 2020).

The distancing of society from the media is greater among young people, who mainly access information through social networks. A Fad survey shows that these platforms are the "favourite means of following current affairs" among Spaniards under the age of 30 (Barral et al., 2021, p. 19).

Although young people are not the main transmitters of false information, they are the most exposed to it due to the time they spend on social media, one of its main channels of circulation (Figueira & Santos, 2019). This group is particularly vulnerable because, as they are in the process of education and socialisation, they lack basic tools and knowledge and, as a result, certain issues can affect their personal development. Some studies show how students have difficulties dealing with hate speech and are influenced by social media and the media (Izquierdo-Grau, 2019).

It is therefore worth asking how such a significant social group is prepared to deal with the phenomenon of disinformation with which it lives. How is the necessary media and information literacy of these new citizens produced?

Families should be active in media education. It is essential that the home environment promotes responsible and critical use of media and technology. However, issues such as work-life balance and daily routines, among other factors, prevent families from receiving continuous and ongoing training (González-Fernández et al., 2019).

Technology in the family environment is normalised. The new digital generations use technological devices on a regular basis. However, most family environments lack the necessary knowledge to ensure the responsible use of these devices. Nor is there any support from institutions to provide training in ICT skills from a multidisciplinary approach.

The focus is on the educational sphere. Concerns about the connection between the worlds of education and communication are not new, to the extent that there is a discipline called educommunication. Researchers such as Gil and Marzal-Felici (2023) identify pioneering studies from the 1960s and recently highlight those by Aguaded Gómez (2009), Aparici and García Matilla (1998), Ferrés (2007) and Pérez-Tornero (2004).

García Matilla (2003, p. 111) explains that educommunication is a discipline that allows us to "understand the social production of communication, to know how to assess how power structures work, what the techniques and expressive elements used by the media are, and to be able to appreciate messages with sufficient critical distance, minimising the risks of manipulation."

In recent decades, the concept of digital literacy has gained ground as an increasingly necessary element for active and effective learning about reality, which ties in with the media competence described by Ferrés and Pisticelli (2012) and whose objective is the development of citizens' personal autonomy, as well as their social and cultural commitment. Herrero-Curiel and La Rosa-Barrolleta

(2021) refer to media literacy as the set of critical skills, abilities and attitudes that a person uses when exposed to and interacting with the information that reaches them daily through the media, in any format and medium.

The aim is to train students in the correct use of a digital environment with growing and changing possibilities, where they can find the media, social networks, instant messaging services and a host of unclassified possibilities that share characteristics with all of them. Students must be able to become users and consumers of all the possibilities available to them, but also creators of content of interest that will enable them to develop better academically, socially and creatively.

This is an objective addressed by numerous scholars, as well as by international organisations such as the European Commission through studies and strategic plans, including The Digital Education Action Plan (2021-2027) and Europe's Digital Decade: digital targets for 2030 (The Digital Compass).

Schools around the world have introduced content to teach students about the risks and benefits of using technology. However, the results do not seem to match the seriousness of the analysis.

In the Spanish educational framework, the situation is not very advanced. Spain ranks 16th in the 2024 Media Literacy Index in Europe (Lessenski, 2023). And progress is slower when it comes to implementing an educational curriculum on media literacy.

In 2022, steps were taken in Spain, such as the publication of the General Law on Audiovisual Communication, which devoted an entire section to media and information literacy. Royal Decrees 95/2022 and 157/2022 were also published. The first refers to the minimum requirements for early childhood education and mentions communication skills. The second refers to minimum teaching requirements in primary education and mentions topics related to educommunication.

This gap has been filled in recent years by various initiatives launched by universities, the media and professional journalist groups, which have created workshops and talks to raise awareness of media literacy and have offered tools to make young people media and information literate, enabling them to make their own decisions.

Experts such as Gil and Marzal-Felici (2023, p. 212) highlight "the number of studies carried out in the field of education and educommunication at Spanish and international universities," as well as the "significant number of initiatives by research groups and national and European projects working in this field."

This research links these initiatives implemented in different social, educational and geographical contexts. The aim, in addition to generating a map of the actions carried out, is to promote awareness of these projects, encourage coordination between them and provide a sufficient basis for the incorporation of this content into the educational curriculum.

Thus, it can be observed that while a large part of the initiatives developed are aimed at secondary school students and even older people, who are another particularly vulnerable group. Specialists such as Herrero-Curiel (2021) and Neubauer-Esteban (2020) emphasise the need to work on the primary school curriculum, given that, according to data from the National Observatory of Technology and Society, in 2022, 98% of children and adolescents between the ages of 10 and 15 used the internet regularly, and 22% of children under the age of 10 had a mobile phone, a percentage that doubled at age 11 (44.7%) and reached 96% at age 15 (ONTSI, 2022).

The aim of the research is to carry out a diagnostic assessment of the Spanish educational landscape in relation to innovative initiatives and projects against disinformation. The study sets out the following objectives:

1. To identify educational initiatives and projects in Spain that work to combat disinformation.
2. To define the type of educational content published in the initiatives.
3. To qualitatively analyse the profile and objective of each initiative.
4. To reflect on educational innovation in the classroom in relation to disinformation and possible future directions.

3. Methodology

The research is based on a qualitative methodology using a case study approach. This study takes a descriptive, explanatory and exploratory approach based on a keyword search to identify educational initiatives against disinformation in Spain.

This keyword search was carried out using a combination of the terms: educational initiatives, disinformation, educational projects, Spain and educational innovation. Once the results had been sorted, 13 proposals were obtained.

The number of initiatives against disinformation in Spain is growing, so the choice of terms was precise and very exhaustive in order to be consistent with the object of study. In this regard, it should be noted that priority was given to initiatives that have been active in the last three years and are educational and informative in nature in the classroom. To this end, the study by Tejedor and Sancho-Ligorred (2023) from the IVERES project, which mapped initiatives against disinformation worldwide, was used as a reference for comparison.

With the results obtained, each initiative is analysed qualitatively based on the categories reflected in Table 1.

Table 1. Qualitative categories of analysis of the study.

Category	Subcategory
Name	
URL	
Entity that manages/imparts	
Entities involved in the project	
Autonomous Community (or national)	
Year of creation	
Editions	
Type	Educational materials for teachers. Educational materials for young people. Games. Training workshops. Research project. Others.
Topic	Disinformation. Media literacy. Digital literacy. Social media. Digital health. Others.
Project objectives	
Target audience	Senior citizens. Adults. Teachers. University students / Higher education. Secondary school / Intermediate levels. Secondary education. Primary school. Others.
Modality	Online. Hybrid. In-person.
Assessment	
Content structure	
Duration	
Supplementary materials	

Source: own elaboration, 2024.

The categories of analysis allow us to delve deeper into the selected sample and learn about each of the initiatives in greater detail.

4. Analysis and Discussion

After applying the analysis form to each project, the following results were obtained.

4.1. Organising Entities

The projects analysed have been launched by various entities or organisations. Thus, there are initiatives that originate from foundations (AulaCheck from the Ibercivis Foundation or Surfear la red from the Fad Juventud Foundation), professional associations and colleges (Desenreda, Mayores con wifi, Prensa sin edad, inFORMADOS); universities (University of Zaragoza or University of the Basque Country); media outlets (Desfake) and public institutions (the Audiovisual Council of Catalonia and the Government of Catalonia, and the Ministry of Education and Vocational Training).

All the proposals have received support from public and private organisations, ranging from universities, embassies and consulates, regional governments and local councils to foundations such as the Spanish Foundation for Science and Technology (FECYT) and even the EU.

4.2. Geographical Scope of the Proposals

Most of them have a regional scope, such as Desenreda or Mayores con wifi in Andalusia; Desfake or EduCAC in Catalonia; inFORMADOS in Castile and León; Qyourself in the Basque Country; or the APA – Unizar Media Literacy Unit in Aragon. There are also projects with a provincial scope, such as Prensa sin Edad in Málaga; and others such as Cazabulos, which are local (Madrid, Vigo or Vitoria-Gasteiz). Some projects such as Desenreda are in the process of being replicated, as in the case of Desenreda in Aragon.

Other initiatives such as AulaCheck, Learn to Check, Surfear la red and #NODESinformación have a national scope (Table 2).

Table 2. Geographical scope of the proposals

Educational project	Target audience
AulaCheck	Nationwide
Desenreda	Andalusia
Desfake	Catalonia
EduCAC	Catalonia
Learn to check	National
Media Literacy Unit Unizar - APA	Aragon
Surfear la red	National
inFORMADOS	Castile and León
Cazabulos	Madrid, Vigo and Vitoria-Gasteiz.
#NODESinformation	National
Qyourself	Basque Country
Mayores con wifi	Andalusia
Prensa sin edad	Malaga

Source: own elaboration, 2024.

4.3. Main Topics and Diversity of Approaches

Most fall within the context of media literacy and the fight against disinformation. Some of them are directly related to specific fields, such as journalism and fake news (Desenreda or inFORMADOS); science (AulaCheck, #NODESinformación or Cazabulos); digital verification of facts and data (Learn to check or Desfake); or cybersecurity and the dangers of the internet (Surfear la red or Mayores con wifi).

Networks, from a theoretical and practical perspective, are present in most of the projects studied. In AulaCheck and Cazabulos, for example, students must debunk scientific hoaxes found on these platforms, while others such as Desfake provide teachers with tools to identify disinformation on social media. Others also stand out, such as the Desenreda project, which addresses these tools in its thematic

block "Social media and committed journalism"; Learn to Check, which emphasises the importance of knowing how to filter, verify and use social media appropriately to avoid disinformation; inFORMADOS, which debunks prevalent stereotypes using these media; and Mayores con wifi, which explains the risks and advantages of social media.

4.4. Common Objectives of the Initiatives

Although the projects analysed are diverse in their approach and methodology, they all share a common objective: to improve the critical capacity of citizens to evaluate information and combat disinformation. Their aim is to promote media literacy and teach their target audience to identify and combat false information and hoaxes on the internet and social media. This is specified, for example, in proposals such as inFORMADOS, Surfear la red and Qyourself.

EduCAC seeks to promote media education in formal and informal educational settings, enhance knowledge of audiovisual language, and foster knowledge and skills for effective and safe use of the media. Initiatives such as Learn to Check, whose objective is to promote media education and digital verification, and Desfake, which aims to train students to be critical of the information they receive on a daily basis, pursue the same goals.

AulaCheck, for its part, links its objectives directly to the field of science and, among other things, seeks to increase scientific culture, encourage vocations in scientific dissemination, bring research closer to students, provide students with tools and methodologies to objectively analyse information on social networks, and analyse how young people face and combat fake news. Projects such as #NODESinformación and Cazabulos emphasise the importance of developing skills in searching for, evaluating and using reliable information and, therefore, teach how to identify reliable sources that help combat disinformation; while others, such as Desenreda, seek to foster a critical spirit in students by providing them with information about the media and social networks and delving into global development issues. The University of Zaragoza's research project seeks to create a teaching guide so that secondary schools in the region can include the issue in their subjects.

Finally, Mayores con wifi focuses specifically on media literacy for people at risk of socio-digital exclusion due to their age, as does Prensa sin edad. Both seek to reduce the digital divide and encourage critical thinking and autonomy among older people.

4.5. Target Audience

Media literacy and disinformation initiatives are aimed at a wide range of audiences, from students at various educational levels to teachers and older people. In this regard, it is important to highlight the nature of the projects, as many (#NODESinformación, EduCAC, Learn to Check, Cazabulos, AulaCheck and Surfear la red) host educational resources on their platforms, making them accessible to a wider audience without geographical restrictions. In contrast, other initiatives such as the Desenreda, Mayores con wifi, Prensa sin edad, inFORMADOS and Desfake projects stand out for their face-to-face approach.

Looking more specifically at the target audience, we can identify three main types of recipients: teachers, students and the elderly (Table 3). In the first group, there are projects such as AulaCheck, the University of Zaragoza project, #NODESinformación, Cazabulos, QYourself and Desfake.

Initiatives aimed directly at students are more closely related to physical presence: Desenreda, inFORMADOS and Desfake. In the field of adult education, there are EduCAC, Surfear la red or Learn to Check, Mayores con wifi and Prensa sin Edad.

As can be seen, some programmes have a more holistic approach, such as EduCAC, Surfear la red and Learn to Check.

Table 3. Target audience.

Educational project	Target audience
AulaCheck	Secondary school teachers (3 rd , 4 th & 5 th)
Desenreda	Secondary school students (3 rd & 4 th)
Desfake	Secondary school students (3 rd & 4 th) + Teachers in general (online) + In-person workshops for sixth form and vocational training students in the Barcelona metropolitan area
EduCAC	Families and schools
Learn to Check	Teachers, primary, secondary, sixth form and university students, and senior citizens
Media Literacy Unit Unizar - APA	Teachers of 3rd year secondary school students
Surfear la red	Primary and Secondary School Students, Teachers and Families
inFORMADOS	Secondary school students (3 rd & 4 th)
Cazabulos	Lower secondary school teachers (1 st & 2 nd)
#NODESinformation	Primary and secondary school teachers
Qyourself	Teachers in general
Mayores con wifi	Senior citizens
Prensa sin edad	Older people

Source: own elaboration, 2024.

4.6. Methodology, Content and Tools Used

Most projects use training workshops (face-to-face and/or online) as their main methodology. As mentioned above, the content of the educational proposals is stored on digital platforms, and some of the initiatives use digital resources such as videos, interactive games and infographics.

AulaCheck shares educational and teaching materials with teachers for use in the classroom. It also offers advice to teachers via Telegram and feedback on the content that schools upload to the platform (this initiative has a platform where the content of participating students is published). Desfake offers these educational resources for use in the classroom free of charge, but to access more materials, it is necessary to sign up for a subscription plan. These mainly include informative capsules that discuss disinformation from basic to more complex levels, explaining phenomena that occur in parallel, such as hate speech and conspiracy theories.

EduCAC, in addition to providing teaching tools for teachers on media and audiovisual language, also hosts content and proposals for families on audiovisual and internet consumption among children and adolescents. #NODESinformación, for its part, offers teaching materials created by the Ministry of Education and Vocational Training to combat disinformation related to COVID-19 and includes a complementary video available on the ministry's website.

Surfear la red has a virtual classroom and offers videos and games on its website, with content divided into sections for children under and over 12 years of age. Of particular note is the interactive game Interland, which helps children to use digital tools safely. Another noteworthy project is Learn to Check, which offers online training workshops, teaching guides and games such as "The Trivial Pursuit of Disinformation" and "Bad News", where participants must take on the role of fake news creators and gain followers.

The methodology of the face-to-face workshops, on the other hand, is based on student participation, both in projects aimed at students, such as inFORMADOS or Desenreda, and in those aimed at a senior audience, such as Prensa sin edad or Mayores con wifi. The latter consists of ten training sessions in which a teaching manual published by the Professional Association of Journalists of Andalusia (CPPA) is used, with specific content for the media and digital literacy of the elderly. In general, all these initiatives raise practical questions related to current affairs or game dynamics.

Finally, the aim of the research projects analysed is to generate open educational resources with a practical and reflective approach to combating disinformation (Qyourself) and to create a teaching unit for teachers to use in their subjects (University of Zaragoza).

4.7. Projects Taught by Journalists

One striking aspect is the participation of journalists in the delivery of workshops for various projects, the result of collaboration between entities and professional associations or journalists' associations. Their involvement is directly related to the topics covered in the training (disinformation, fake news, hoaxes, sources of information) and they provide a practical and up-to-date perspective on the handling of information in the digital age.

Noteworthy initiatives include *Desenreda*, where journalists work directly with students to teach them to discern between truthful information and disinformation; *inFORMADOS*, with workshops on data verification and critical analysis of news; and the teaching unit at the University of Zaragoza. The *Mayores con wifi* and *Prensa sin edad* projects are also taught by journalists who teach older participants how to surf the internet safely, identify fake news and protect themselves against disinformation.

4.8. Complementary Activities

Some projects include a competition in their programme before the end of the edition. This is the case with *AulaCheck*, *Cazabulos* and *EduCAC*. The first hosts the *AulaCheck Awards*, where students must create high-quality news stories and debunk a hoax or piece of disinformation using a rigorous scientific approach. In the *Cazabulos* competition, students must publish a video in TikTok format identifying and debunking a hoax; the best ones are presented at a final gala. Finally, the *EduCAC* competition rewards schools that integrate audiovisual communication education into the school curriculum.

5. Conclusions

The study offers a peripheral view of the phenomenon of disinformation based on the initiatives against disinformation analysed in the sample. It highlights the transformative power of education and emphasises the need to integrate media and information literacy across the board from an early age in the curricula of schools and colleges throughout Spain. The sample analysed in the study allows us to conclude that it would be interesting to implement educational and pedagogical content in the classroom, using innovative formats that allow teachers to treat disinformation not only as a cross-curricular topic.

Increasingly, public and private entities are developing initiatives to combat and mitigate the impact of disinformation through education. Although most of the sample analysed aims to provide media literacy training to young people, we observe the need to include training and workshops for older people, who are one of the groups most vulnerable to disinformation. However, these initiatives have been developed with the best of intentions, but with content that is always partial and disjointed, and also with problems of lack of continuity once the projects come to an end.

Another relevant factor is the inequality that exists in Spain in relation to these issues. Thus, most of the initiatives are concentrated in Andalusia, the Basque Country, Catalonia and Aragon, in addition to one experience in Castile and León and a few others that are already local in nature. None have been detected in the rest of the country.

The analysis also shows that these initiatives are nothing more than good intentions. In this regard, we agree with García Avilés (2024) when he points out that even current legislation is not sufficient without mandatory implementation in the curriculum.

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