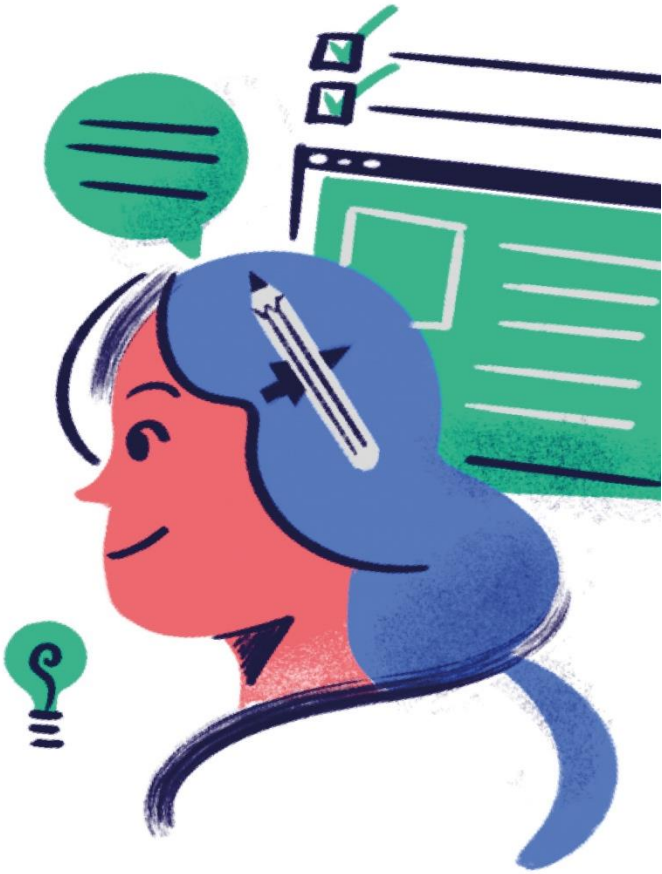
MIL and PRE-BUNKING approaches for Critical thinking in the education sector

Handbook



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Project Information

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1. INTRODUCTION

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1.1.About MILES:MIL and PRE-BUNKING approaches for critical thinking in the education sector

The MILES – MIL and PRE-BUNKING approaches for critical thinking in the education sector is a initiative funded by the ERASMUS+ program and comprising 11 partners from 10 European Union countries.
This initiative aims to promote digital literacy within the education sector by developing, testing and evaluating innovative approaches.

The objectives of MILES are:

- To empower teachers developing, testing and assessing innovative approaches through ITE (Initial Teacher Education) and CPD (Continuous Professional Development).
- To improve students' ability to critically and safely approach the online environment, bridging the intergenerational gap between students and teachers in the digital and media field.
- To promote innovative approaches and evidence-based policy in education and public awareness about disinformation and cognitive biases.

WP2 is directly related to the achievement of Specific Objective 1, with two main purposes: analysing data, needs and already existing resources to tackle disinformation through MIL, pre-bunking and data literacy in educational sector; and enhancing, mapping and valuing the existing material around best practice to improve MIL; preparing materials for training.

This is divided into 5 tasks:
T2.1 – Mapping of existing resources at National and EU level to be scaled up
T2.2 – Data and insights collection at local level
T2.3 – International workshop for the staff, for selection of the materials and structure of the training
T2.4 – Preparation of material for ITE/CPD training courses
T2.5 – Training of trainers

This Handbook (WP2.T2.4) is the result of all the activities carried out in the previous phases of the project, which consisted of the analysis and mapping of existing resources at the national and EU levels (T2.1), the collection of data and insights at the local level (T2.2), and the organisation of an international workshop for the selection of materials and the structure of the training (T2.3).
In T2.1, a detailed analysis and collection of best practices already present in various countries were conducted, which served as the basis for the development of T2.2. In this phase, interactive surveys were conducted to better understand the specific needs of local communities, involving a significant sample of 900 respondents, including young people, university students, secondary school teachers, academics, parents, and education professionals.
The T2.3 enabled the project partners to meet and discuss the results obtained, as well as how to address the identified needs and objectives, ensuring that the activities and materials would be of high quality.

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2. ABOUT THE TRAINING COURSE

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2.1. The Framework for Addressing Disinformation: Understanding the What, How, Why and With Whom

This course is structured to help teachers understand the logic behind disinformation and media literacy, following a clear progression from defining the issue, understanding the media environment, exploring how disinformation spreads, learning how to counter it, and identifying key stakeholders to collaborate with in addressing this challenge. The goal is for teachers to work on these competencies with their students, empowering them to navigate media critically and responsibly.

I. **Introducing Disinformation and Media Literacy (What)**

The starting point is to address *what* disinformation and media literacy are. This module aims to define the key concepts and provide context to the phenomenon, helping the trainees understand the significance of this issue in today's world.

II. **Media Environment and Challenges (What)**

Still under the "What" category, this module explores *what* characterises the current media environment and the key challenges that facilitate the spread of disinformation. It analyses the media ecosystem, including technological, economic, and social pressures that create fertile ground for the dissemination of false or misleading content.

III. **Mechanisms of Disinformation (Why)**

Moving on to *Why* disinformation operates, this module focuses on the strategies and mechanisms through which disinformation is created and spread. It uncovers the tactics and tools used to manipulate public opinion and distort the truth.

IV. **How to Enhance Media and Information Literacy (How)**

Continuing with the "How", this module addresses *how* we can combat disinformation by promoting greater media literacy. It presents tools and strategies to empower individuals to become more critical and informed consumers of information.

V. **Community and Policy Initiatives (With Whom)**

Finally, in the "With Whom", this module discusses *who* we need to collaborate *with* to tackle the challenge of disinformation. It explores the role of community and policy initiatives, emphasising the importance of partnerships with various stakeholders – from civil society organisations to policymakers and tech platforms.

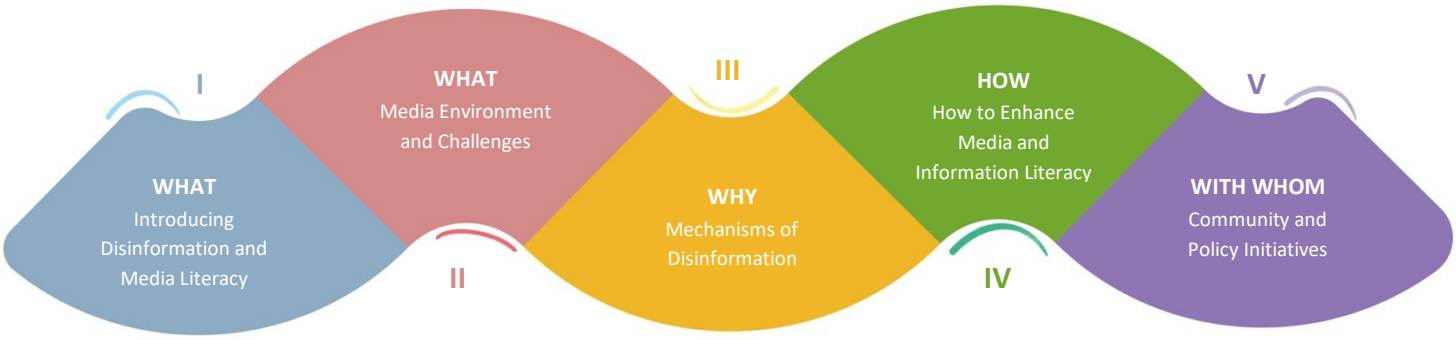

Figure 1 - Understanding the What, How, Why and With/Whom

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2.2. Workload

The training course has a total duration of 17 hours, divided into 5 modules.

Table 1 - Division of the modules

Logic	Hierarchy	Modules	Duration
What	I	Introducing disinformation and media literacy	1 h
	II	Media environment and challenges	4 h
Why	III	Mechanisms of disinformation	4 h
How	IV	How to enhance media and information literacy	4 h
With Whom	V	Community and policy initiatives	4 h
		TOTAL	17 h

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2.3. Modules and sub-modules and respective learning outcomes

Table 2 – Modules, sub-modules and respective learning outcomes

MODULES	SUB-MODULES	LEARNING OUTCOMES
I-Introducing disinformation and media literacy	Intro to the content of the training	By the end of this sub-module, learners will be able to outline the key topics covered in the training, understand their relevance.
	Why do you need the course	By the end of this sub-module, learners will be able to recognise the importance of the course content in their professional and personal lives
	Findings (challenges and needs in EU context)	By the end of this sub-module, learners will be able to identify the key challenges and needs related to information disorder in EU contexts.
	EU framework	By the end of this sub-module, learners will be aware of the main components of the EU framework for combating information disorder, including relevant policies, regulations, and initiatives.
II-Media Environment and Challenges	Information Disorder	By the end of this sub-module, learners will be able to identify and differentiate between the terms and concepts related to information disorder, including misinformation, disinformation, and disinformation, and analyse their characteristics to understand their implications in the digital age.
	Review of the media environment	By the end of this sub-module, learners will be aware of the different types of communication patterns that can appear on social media.
	Threats-Filter Bubbles & Echo Chambers	By the end of this sub-module, learners will be able to identify and evaluate the effects of filter bubbles and echo chambers on individual beliefs and behaviour.
	Conspiracy Theories	By the end of this sub-module, learners will be able to explain the psychological and

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MODULES	SUB-MODULES	LEARNING OUTCOMES
		sociopolitical factors that contribute to the spread of conspiracy theories.
III-Mechanisms of disinformation	Cognitive biases and logical fallacies	By the end of this sub-module, learners will be able to define the concepts cognitive bias and logical fallacy and exemplify how they affect human judgement and decision-making.
		By the end of this sub-module, learners will be able to spot logical fallacies in contemporary online media products.
	Populistic discourse and propaganda	By the end of this sub-module, learners will be able to recognise the mechanisms of populistic discourse and propaganda.
		By the end of this sub-module, learners will be able to reflect on their own cognitive biases in real-life situations.
IV-How to enhance media and information literacy	Critical thinking & Data Analysis in Media and Information	By the end of this sub-module, learners will be able to critically analyse and comprehend information presented across various media formats, including articles, data sets, statistical charts, headlines, and author perspectives.
	How pre-bunking works	By the end of this sub-module, learners will be able to critically evaluate and reflect on media products, considering factors such as bias, intent, and the broader context in which the content is produced and consumed.
		By the end of this sub-module, learners will be able to explain the concept of pre-bunking and use pre-bunking strategies.
V-Community and policy initiatives	Collaborative Efforts & Community Involvement	By the end of this sub-module, learners will be able to understand the basics of a community.
		By the end of this sub-module, learners will be able to enumerate ways of collaboration between stakeholders, community leaders and

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MODULES	SUB-MODULES	LEARNING OUTCOMES
		policymakers to support MIL initiatives.
		By the end of this sub-module, learners will be able to describe promising practices of community involvement in promoting MIL and combatting disinformation.
	Policies recommendations and Professional Development	By the end of this module, learners will be able to identify existing policies related to MIL and disinformation at local, national and international levels.

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3. MODULE I: INTRODUCING DISINFORMATION AND MEDIA LITERACY

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3.1. Module I – Objectives

MODULE SUMMARY/ MAIN CONTENTS	This module provides a comprehensive overview of the key challenges and needs related to disinformation and media literacy, in European contexts. It explores significant research and policy findings, drawing on the latest European Union directives and recommendations, to promote a deeper understanding of the importance of critical media literacy. The module also introduces the central themes of the training, emphasising the importance of continuous teacher training in combating disinformation and effectively using digital tools in education. By the end of the module, learners understand the value and necessity of deepening these skills to meet the educational challenges of today.
TIMETABLE & SCHEDULE	Asynchronous –30 minutes • Content Synchronous session – 30 minutes • Exercises
LEARNING OUTCOMES OF THE MODULE	At the end of this module, learners should be able to: • identify the key challenges and needs related to information disorder in EU contexts. • Be aware of the main components of the EU framework for combating information disorder, including relevant policies, regulations, and initiatives. • Outline the key topics covered in the training, understand their relevance, and set personal learning goals to maximise the benefits of the course. • To recognise the importance of the course content in their professional and personal lives.

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Teachers play a pivotal role in shaping the minds of future generations, especially in an era where digital information dominates everyday life. The ability to guide students through this vast and complex landscape is becoming increasingly critical. This course is designed to equip teachers with the tools and knowledge necessary to enhance their teaching practices in addressing misinformation effectively.

This course provides practical examples and pedagogical strategies that can be directly applied in the classroom, empowering teachers to foster a culture of critical analysis and informed decision-making in the digital age.

To begin, we will explore the current challenges and needs faced at both the European Union. Disinformation and media literacy are pressing issues, and understanding their impact is essential to fostering students' critical thinking abilities. The urgency of this topic is reflected in recent studies and policy directives that underline the growing threat of false information in both public and educational spaces.

Following this, we will delve into the political and legal framework established by the European Union. Far from being abstract guidelines, these policies provide practical tools for teachers, helping them to cultivate students who are not only critical thinkers but also informed and responsible digital citizens.

Additionally, the module will introduce the core content of the training, offering a clear overview of the learning path and the key competencies that will be developed throughout the course. This knowledge will enable learners to approach digital challenges with confidence and effectively implement media literacy strategies in their educational settings.

Finally, we will highlight the practical relevance of this course. In a world where information overload is the norm, teachers are essential in helping students differentiate between reliable and misleading content.

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3.4. Sub-module - Intro to the content of the training

SUB-MODULE SUMMARY/ MAIN CONTENTS	In this topic, learners will be introduced to the main objectives and structure of the training course, understanding the relevance of training in combating disinformation and developing media literacy, as well as the essential skills that will be worked on, such as critical thinking, evaluating information sources and identifying disinformation, enabling them to prepare to apply this knowledge in teaching practice.
LEARNING OUTCOMES OF THE SUB-MODULE	At the end of this sub-module, the learners should be able to: ● Outline the key topics covered in the training, understand their relevance.

This training was created with the primary objective of providing teachers with the essential skills and knowledge required to tackle the challenges they face in the digital environment and to develop media literacy within the educational context.

To respond to the growing need for media literacy and the ability to critically assess the information available in today's digital landscape, the main objectives of the training course are:

1) Empower professionals to identify, understand, and critique the main challenges and forms of misinformation within the context of the European Union, recognising their impacts and complexities.
2) Familiarise professionals with the regulatory and political framework of the European Union, including policies, initiatives, and approaches that help combat misinformation and promote media literacy.
3) Develop critical thinking skills, data analysis, and the identification of biases and logical fallacies, enabling learners to critically evaluate the information presented in the media and recognise manipulation techniques.
4) Introduce pre-bunking techniques and practical strategies to combat misinformation, providing tools and exercises that learners can apply in their professional practice.
5) Promote collaboration among communities, teachers, and political leaders to develop community initiatives that enhance media literacy, while also integrating policy recommendations and ensuring the continuous professional development of teachers.

Consequently, the training course has been divided into five distinct modules, starting with a basic understanding of the issues and progressing to practical application and community engagement.

In total, the duration of the training course is 17 hours, divided as follows:

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Module I: Introducing disinformation and media literacy (1 hour)

a) **Intro to the content of the training:** An overview of the topics covered in the course will be provided, allowing learners to understand the relevance of the content, and set personal learning goals.
b) **Why do you need the course:** Through practical examples, learners will reflect on the importance of this course in combating disinformation in their professional and personal lives.
c) **Findings (Challenges and needs in EU and national context):** Learners will identify the main challenges and needs related to disinformation, both within the European Union and national contexts.
d) **EU framework:** This submodule covers the key EU policies and regulations aimed at combating disinformation, ensuring that learners understand the relevant political framework.

Module II: Media Environment and Challenges (4 hours)

a) **Information Disorder:** This submodule explores the different forms of information disorder (misinformation, disinformation, and disinformation), helping learners to recognise and critically analyse these phenomena.
b) **Review of the media environment:** This submodule contains an introduction to the social media landscape, the internet landscape and how users of the online world interact internally and how these interactions can influence the 'live' world.
c) **Threats- Filter Bubbles & Echo Chambers:** Learners understand how filter bubbles and echo chambers affect beliefs and behaviours, particularly in the context of social media.
d) **Conspiracy Theories:** This submodule will discuss why conspiracy theories are appealing to certain audiences and how they spread through the media, enabling learners to develop techniques to critically analyse them.

Module III: Mechanisms of disinformation (4 hours)

a) **Cognitive Biases and Logical Fallacies:** Learners will learn to identify cognitive biases and logical fallacies, understanding how these mechanisms affect judgement and decision-making.
b) **Populistic Discourse and Propaganda:** In this submodule, the use of populist discourse and propaganda to manipulate public opinion and political agendas will be analysed, using both historical and contemporary examples.

Module IV: How to enhance media and information literacy (4 hours)

a) C**ritical Thinking & Data Analysis in Media and Information:** This submodule focuses on developing critical thinking skills and the ability to analyse data presented in the media, such as articles, statistics, and charts.
b) **How Pre-bunking Works:** Learners will learn the concept of pre-bunking, a technique that anticipates and counters disinformation before it spreads, through practical exercises.

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Module V: Community and policy initiatives (4 hours)

a) **Collaborative Efforts & Community Involvement:** This submodule emphasises the importance of collaboration between different stakeholders (communities, leaders, and policymakers) to support media literacy initiatives.
b) **Policy Recommendations and Professional Development:** Learners will explore policy recommendations for integrating media literacy into education systems and the importance of continuous professional development for teachers.

Throughout the training course, learners will develop a series of essential skills for promoting media literacy, which are:

- **Critical thinking:** The ability to analyse and evaluate information critically, identifying biases, logical fallacies, and manipulative techniques used in the media.
- **Evaluation of information sources:** The capacity to assess the reliability and credibility of information sources, distinguishing between trustworthy and misleading content.
- **Identification of misinformation**: A set of techniques for identifying and combating misinformation through practical examples and exercises.

To ensure effective learning, various teaching methodologies will be employed:

1) **Practical learning:** Learners will engage in practical activities and discussions that encourage critical reflection on the material covered.
2) **Practical exercises:** Real-life scenarios and exercises will be used to simulate the challenges faced in combating misinformation, allowing learners to apply concepts in a practical context.
3) **Case studies:** Relevant case studies will be analysed to provide concrete examples of misinformation in action, helping learners understand the real impact of misinformation and how it can be countered.

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3.5. Sub-module - Why do you need the course

SUB-MODULE SUMMARY/ MAIN CONTENTS	This submodule explores the importance of the training course in combating disinformation and promoting digital literacy. It will cover topics such as the main threats to information, including fake news and cyber harassment, and their implications for public opinion and student behaviour. This understanding is crucial for teachers to address current challenges and equip their students with the necessary skills to navigate the digital environment critically, thereby contributing to the development of more informed and aware citizens.
LEARNING OUTCOMES OF THE SUB-MODULE	At the end of this sub-module, the learners should be able to: ● To recognise the importance of the course content in their professional and personal lives.

In recent years, digital technologies have proliferated, consequently transforming how we consume and disseminate the information we have access to. However, this advancement has also led to a significant increase in disinformation through fake news, conspiracy theories, and cyber harassment.

According to UNESCO (2021), 65% of young people reported encountering false or misleading information online, highlighting the urgent need for critical skills to analyse and verify the accuracy of the information to which we are exposed. In addition, the growing “infodemic” that has been experienced during the COVID-19 pandemic has highlighted the gaps in the population's ability to verify information, which the World Health Organization has considered to be detrimental to public health responses, leading to risky behaviour (World Health Organization, 2020).

Disinformation is a phenomenon that extends across various fields, notably influencing public opinion, shaping behaviours, and affecting both individual and collective decisions. Bradshaw & Howard (2020) conducted a study which revealed that disinformation impacts trust in democratic institutions and affects civic engagement.

In the context of schools, this reality presents a significant challenge, making it crucial to develop skills that enable the identification, analysis, and critical reflection on information. Therefore, this training course emerges as a response to this need, offering strategies and tools to empower teachers to promote digital literacy in the educational environment. By addressing the threats associated with disinformation, this course will contribute to the professional development of teachers and prepare students to become more informed citizens with critical thinking skills.

In 2018, the European Commission launched an initiative called the “Code of Practice on Disinformation”, with the aim of promoting transparency in content moderation practices. However, UNESCO (2021) considers that combating disinformation requires an organised and structured approach, above all by promoting digital literacy in various sectors, with a special focus on education.

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In addition to the political destabilisation and conspiracy theories that have harmful effects on society, the psychological impact of disinformation is also quite significant, particularly on young people. Cases of anxiety and depression tend to increase due to cyber-harassment and online manipulation campaigns (UNESCO, 2021). Therefore, it is crucial to urgently train both teachers and students in critical thinking skills and digital literacy, so that they have the necessary tools to face these threats.

Another factor to consider is that most schools do not consistently integrate digital and media literacy into the school curriculum. This is compounded by the fact that teachers face a few challenges, such as a lack of adequate resources and ongoing training that is specific to this issue (UNESCO, 2021).

According to the Organization for Economic Co-operation and Development (2018), on average, only 54% of 15-year-old students can distinguish between fact and opinion in the information available online. This is yet another case that illustrates the need for training at all levels of education to promote a safer learning environment, for example through practical and engaging activities such as case study analysis, debates based on real news and the use of real-time fact-checking tools.

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Example of an Activity

- Objective: Demonstrate the importance of verifying information and how it can be applied in both personal and professional life, showing in a practical way how the course will provide the necessary tools for this.

Table 3 - Activity 3

Duration	Activities	Resources and materials:
(10 min)	Introduction to the activity 1.ª First ask the whole group the following question: Have you ever shared something without checking if it was true? What if it was wrong? Then quickly show some everyday situations where disinformation has an immediate impact. Example: 'A mum sees a post on social media saying that using X food can cure a disease. She passes this on to her children's school group.' 'A newspaper headline claims that a politician has made a statement, but when you check the source, you discover that it has been manipulated.'	
(20 min)	Case analysis: 1º-Show the trainees a real news headline that presents a statistic, that its purpose is to present alarming data. 2º Ask the trainees how they feel about the headline. Example of questions: do you doubt that it's real? Do you think it's fake news? 3.º Then present all the news for them to read, but it must have the source from which the statistical data was taken. 4.º Ask again: do you doubt that it's real? Do you think it's fake news?	internet, projector or screen, printed news for each trainee

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	5º Finish by presenting an analysis of the statistical data presented. For example, the headline reads: '80% of HR professionals have burnout', but when we analyse the source we see that this data was taken from a self-diagnosis of these professionals, so the headline should read '80% of professionals feel they are in burnout'.	
(10 min)	Conclusion and Connection to the Course Explain how the course will equip them with tools and techniques to deal with disinformation effectively. Say that trainees will learn, among other things: How to use real-time fact-checking tools. How to identify and analyse reliable sources of information. Strategies for teaching your students to be critical of what they consume digitally. Reinforce that fact-checking is not only an important skill for your work as an educator, but also a way to contribute to a more informed society that is resilient to disinformation. After this explanation, present the division of the course (what,why,how and with whom) and each module and its learning outcomes.	Internet, projector or screen,

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3.6. Sub-module – Findings (challenges and needs in EU and national context)

SUB-MODULE SUMMARY/ MAIN CONTENTS	This sub-module examines the growing threat of disinformation across Europe and its impact on democratic processes, social stability, and public health. It introduces key concepts such as misinformation, disinformation, and malinformation, using real-world examples such as the Brexit referendum and the COVID-19 pandemic to illustrate their effects. This sub-module also examines the disproportionate impact on vulnerable populations, including disinformation specifically targeting vulnerable groups. Additionally, it outlines the primary challenges faced by the EU, including the regulation of digital platforms, fostering cross-border collaboration, and promoting media literacy to combat the spread of false information.
LEARNING OUTCOMES OF THE SUB-MODULE	At the end of this sub-module, the learners should be able to: ● identify the key challenges and needs related to information disorder within both the EU and national contexts.

In recent years, the rise of information disorder has become one of the most pressing issues facing governments, institutions, and societies within the European Union (EU). From electoral interference to the widespread proliferation of false narratives during the COVID-19 pandemic, the EU has faced a significant challenge in managing the complex landscape of misinformation, disinformation, and malinformation (Durach et al., 2024).

Understanding the key challenges and needs in combating information disorder is essential for both the stability of democratic processes and the protection of citizens' well-being across diverse cultural and linguistic backgrounds (Durach et al., 2024).

This sub-module explores the current landscape of information disorder within the EU, identifying major challenges and highlighting the critical needs that must be addressed at both EU-wide and national levels.

The European Union has played a key role in coordinating actions across member states, promoting collaboration, and setting regulatory frameworks to combat disinformation at the European level. Researcher Wardle, an expert on misinformation and co-founder of First Draft, highlights that the spread of disinformation poses a serious threat to democratic systems. The autor argues that without properly informed citizens, the very core of democratic governance is at risk (Wardle, 2019). Wardle's work highlights the urgent need for comprehensive strategies to address the spread of false information in the digital age. The scale of fake news and disinformation in Europe has reached unprecedented levels in recent years. The phenomenon has been most visible during pivotal political

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events, such as elections and referendums, and during the COVID-19 pandemic (Ramdam, 2024), which the World Health Organization described as an “infodemic”.

Disinformation campaigns have targeted European elections, public health measures, and even the legitimacy of governments and institutions. These campaigns have used a variety of platforms—most notably social media, but also websites, blogs, and messaging services—to spread false information rapidly (Ramdam, 2024).

Vulnerable parts of the population are disproportionately targeted. It has been pointed out in many cases that disinformation is ‘gendered’. The German federal election in 2021, for example, revealed that female candidates were targeted more often by disinformation campaigns than were males (Monsees, 2023).

One of the most prominent examples of disinformation in Europe was the 2016 Brexit referendum in the United Kingdom. Disinformation played a significant role in shaping public opinion on both sides of the debate, with numerous false claims about the European Union and the consequences of leaving it. Misleading advertisements, social media posts, and websites disseminated false narratives that were amplified by algorithms designed to increase user engagement. The impact of this disinformation campaign was profound, as it contributed to the polarisation of British society and complicated the political discourse around Brexit (Monsees, 2023).

Facing the challenges that the digital era presents to democracy, new approaches to governance and public policy are essential. A balance between leveraging technology to increase political participation and preventing risks that undermine democratic processes must be achieved through a deep understanding of the dynamics between technology, politics, and society (Casero-Ripollés et al., 2023).

Key challenges

Here are some of the key challenges:

Disinformation

- Disinformation campaigns frequently exploit polarising issues—political, social, or cultural—to deepen societal divisions. The aim can vary from destabilising democracies, influencing elections, eroding trust in public institutions, or spreading fear and confusion during crises (such as public health emergencies like COVID-19) (Richter, 2019).

The challenge is that disinformation is:

- **Difficult to Detect**: It often mimics legitimate content and is spread across both major platforms and smaller niche or encrypted networks (Monsees, 2023).
- **Rapid Spread**: Social media algorithms often amplify sensational or emotionally charged content, increasing the viral spread of disinformation. False information typically spreads faster and more widely than corrections (Monsees, 2023).

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- **Persistent**: Even when false claims are debunked, the misinformation often continues to circulate and be believed by certain segments of the population, creating long-term damage (Monsees, 2023).

Impact on democracy

- Disinformation has become a direct threat to democracy by **polarising public opinion** and **manipulating electoral outcomes**. This is visible in how false information has been used to undermine democratic institutions by questioning the legitimacy of elections or spreading false narratives about political figures (Ramdan, 2024).
- **Elections under siege**: European elections have been prime targets, as seen in the 2019 EU Parliamentary elections, where false information circulated about parties, policies, and political leaders. This led to **misinformed voting behaviour** (Ramdan, 2024).
- **Erosion of public trust**: When citizens lose trust in the information they receive, faith in democratic institutions erodes. This includes trust in the media, governments, and even scientific expertise, which was severely tested during the pandemic (Ramdan, 2024).

Trust

- Distrust promotes the decline of faith in the traditional social order and strengthens the anti-system and various alternatives. Loss of trust affects institutions in general and is a concomitant of all crises and major transformations. Democracy as a culture means not only the functioning of democratic institutions, but also the trust of citizens that these institutions will truly be the guarantor of democracy, freedom, law and justice. Trust is a key element of the culture of democracy. Without trust, it is not possible to develop a society and seek a breakthrough for different opinions (Kuczerawy, 2020).

Regulation and policy

- **Complexity of Implementation:** Crafting effective regulations that can address disinformation while protecting freedom of expression is a significant challenge. The EU has made efforts through initiatives like the Digital Services Act, but balancing these regulations with individual rights and freedoms is complex (Corbu et al., 2024).
- **Diverse Legal Frameworks:** Member states have different legal systems and approaches to disinformation, making it difficult to establish a cohesive regulatory framework across the EU. This inconsistency can lead to loopholes that malicious actors exploit (Corbu et al., 2024).

Platform accountability

- **Responsibility of Tech Companies:** There is ongoing debate about the extent to which social media platforms should be held accountable for the content shared on their sites. Ensuring these platforms actively monitor and mitigate the spread of disinformation without infringing on users' rights is challenging.
- **Transparency Issues:** Many platforms lack transparency in their algorithms, which can promote false information. The EU is pushing for clearer guidelines on how these algorithms work, but getting platforms to comply with these regulations can be difficult.

Media literacy and digital media literacy

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- **Educational Gaps**: There's a pressing need to improve media literacy among citizens to help them critically evaluate the information they encounter online. However, implementing comprehensive media literacy programs across diverse educational systems poses logistical challenges (Richter, 2019).
- **Generational Differences**: Different generations consume media in varied ways, complicating efforts to create a one-size-fits-all educational strategy. Tailoring media literacy initiatives to address these differences is essential but also challenging (Richter, 2019).

Cross-border nature regulations besides national

- The cross-border nature of disinformation presents a significant challenge for the European Union because it complicates jurisdiction and regulatory enforcement. Disinformation can originate in one country but spread rapidly across multiple member states, making it difficult to determine which laws apply and which authorities should act (Durach et al., 2024).
- Additionally, varying national regulations create loopholes that can be exploited by those spreading false information, leading to inconsistencies in how disinformation is addressed across the EU. This necessitates increased cooperation among member states and the development of a cohesive regulatory framework to effectively combat misinformation in a unified manner (Cianci & Zecca, 2023).

Legal and ethical concerns related to privacy, freedom of expression

- **Balancing Act**: The EU must navigate the fine line between combating disinformation and upholding privacy rights and freedom of expression. Regulations aimed at reducing fake news could inadvertently infringe on these rights if not carefully crafted (Monsees, 2023).
- **Data Privacy Concerns**: Efforts to combat disinformation often involve data collection and analysis, raising concerns about user privacy. Striking a balance between the need for data to identify and counter misinformation and the protection of individual privacy rights is a significant legal and ethical challenge (Monsees, 2023).

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Who Is Most Likely to Be Affected by Fake News and Disinformation?

As stated before, vulnerable parts of the population are disproportionately targeted and the vulnerability to disinformation varies between different groups in society, and is influenced by factors such as age, access to education and digital literacy. Below, we explore the groups most susceptible to believing and spreading false information, as well as the reasons behind this predisposition, with the results of a survey from Seo et al. (2021)

1. Elderly

The elderly are often considered more susceptible to misinformation, especially online. This group often has less experience with digital technologies and social networks, making them more vulnerable to manipulative content. In addition, studies suggest that the ability to discern between true and false information can decrease with age, which makes it easier to accept fake news as truth. Another factor is the use of social networks as a way of connecting with friends and family, which can expose them to a variety of unverified content (Cove et al.,2022)

2. Young people and teenagers

Although they are considered 'digital natives', young people and teenagers are also prone to misinformation, especially when exposed to sensationalist content on social networks. The search for social validation and the high use of visual platforms such as TikTok and Instagram mean that many share information quickly, without checking the source. In addition, many young people lack media literacy skills, which hinders their ability to critically assess the veracity of the information they consume and share (Seo et al., 2021).

3. Individuals with Low Digital Literacy

People with low digital literacy, regardless of age, tend to be more vulnerable to disinformation. Lack of familiarity with digital tools and lack of understanding of how information is generated and distributed online are factors that increase susceptibility to misleading content. These individuals may have difficulty identifying reliable sources, leaving them more exposed to manipulative content (Seo et al., 2021)

4. Vulnerable Groups and Minorities

Minority and vulnerable groups can also be more susceptible to fake news, especially when it exploits stereotypes and prejudices. These groups are often targeted by specific campaigns that use disinformation to reinforce stigmas, which increases polarisation and social exclusion. Disinformation aimed at minorities can provoke mutual distrust between these groups and the rest of the population, creating a cycle of prejudice and isolation (Monsees, 2023).

5. People with Strong Partisan Beliefs

Individuals with very firm political convictions, especially as the survey results show us (Seo et al., 2021), respondents labelling themselves as leaning to the rightward political spectrum are the most vulnerable toward information disorders and consequently, more likely to consume and share information that confirms their views. This is due to the phenomenon of 'confirmation bias', where

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people tend to believe content that supports their pre-existing beliefs more easily. Thus, these individuals are more susceptible to disinformation that validates their opinions, regardless of their veracity.

6. People in Crisis Situations

During crises, such as pandemics or periods of political instability, people tend to look for quick answers and guidance. This state of uncertainty and fear makes the general population more likely to believe and share fake news, especially when it seems to offer simple solutions or explanations to complex problems

Disinformation and Minorities: Challenges and Needs in the European Context

Disinformation targeting minorities often takes advantage of old stereotypes and fear narratives to influence public opinion. This manipulation strategy aims to create mistrust and hostility towards these groups, using distorted or false information to reinforce prejudiced views (Thakur & Hankerson, 2021).

An example of this was the disinformation campaigns during the recent migration crises in Europe. Fake news circulated associating immigrants with an increase in crime, terrorism and overburdened health systems, creating an atmosphere of mistrust and fear. By portraying minorities as a threat, these campaigns fuel racism and xenophobia, contributing to their social exclusion (Monsees, 2023).

Among the nascent literature on the effects of disinformation, three trends emerge. First and foremost, disinformation is likely to increase polarisation, in particular along politically partisan lines, by spreading harmful conspiracy theories, radical and supremacist thoughts, Islamophobia, cynicism, racism, distrust or misogyny. Second, disinformation contributes to lowering trust in mainstream media and institutions, although these two variables appear to be mutually reinforcing. Finally, disinformation poses a threat to democratic political processes by corrupting the integrity of electoral processes and under- mining the democratic values which shape public policies, including in the health and science sectors (Vériter et al., 2020).

The effects of disinformation on minorities go beyond issues of image and perceptions. In many cases, disinformation campaigns have a direct impact on people's lives, increasing the risk of violence, discrimination and exclusion. The main effects observed include:

- **Stigmatisation and Marginalisation**: Disinformation helps perpetuate myths and misconceptions about certain groups, making it difficult for them to integrate and be accepted into society. The repetition of prejudiced narratives leads to the marginalisation of minorities, who come to be seen as ‘the other’, a group separate from society in general (Thakur & Hankerson, 2021).
- **Risks to physical safety**: Misinformation can contribute to an increase in verbal and physical attacks against minorities. By promoting a negative image of certain groups, disinformation campaigns can encourage hostile attitudes and even violence against these individuals, who come to be seen as ‘threats’ by the population (Thakur & Hankerson, 2021).
- **Psychological and social impacts**: Continuous exposure to hate speech and stigmatisation affects the mental health of individuals in minorities. As well as damaging self-esteem and

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increasing stress, the feeling of insecurity and rejection can lead to isolation and social withdrawal (Thakur & Hankerson, 2021).

Women in Politics

- Gendered disinformation campaigns promote the narrative that women are not good political leaders and often aim to undermine women political leaders by spreading false information about their qualifications, experience, and intelligence, sometimes using sexualised imagery as part of their tactics (da Gama, 2021).

Disinformation aimed at minorities is a particularly complex challenge due to its ability to exploit stereotypes and fears that are deeply rooted in society. This disinformation is often presented indirectly, using disguised language and images that make it difficult for social media platforms and regulators to detect. In addition, the lack of specific monitoring structures to protect these groups makes the response slower and less effective. The balance between combating disinformation and protecting freedom of expression is another important challenge, as a lot of harmful content circulates under the guise of opinion, leaving minorities vulnerable to manipulation and hate speech disguised as information (Seo et al., 2021).

What could be done?

Protecting minorities from the negative effects of disinformation requires an integrated approach that combines regulation, education and collaboration. Firstly, it is essential to invest in digital literacy programmes that help both minorities and the public to identify and avoid manipulative content. On the regulatory front, the European Union and digital platforms can work together to remove harmful content more proactively, encouraging transparency and accountability on social networks. In addition, promoting diversity in the media and including perspectives from different ethnic and cultural groups helps to combat stereotypes, creating a fairer and more inclusive representation. These measures strengthen the resilience of minorities and society, promoting coexistence based on respect and truthful information (Monsees, 2023).

Combating Fake News and Misinformation: Media Literacy

Even when there is evidence of misinformation and it is debunked, fake news holds the potential to continue to shape people's attitudes (Dame Adjin-Tettey, 2022)

One useful resource for dealing with the inaccurate information encountered in daily life is prior knowledge, which is digital literacy or media and information literacy (MIL). When information consumers and users are digitally literate or are given media and information literacy training, they are expected to have and exhibit the requisite knowledge, skills, and attitudes that position them to know-how to obtain authentic and credible information; how to critically evaluate and verify the authenticity of information or news; when to use information; and how to ethically use it (Dame Adjin-Tettey, 2022)

With the proliferation of digital technologies and the democratisation of media ownership and content creation, fake news, misinformation, and disinformation undeniably permeate every fibre of society.

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It is therefore expected that media and information literacy will provide the needed skills for information users to be able to sift between which information is false and which is credible and reliable (Dame Adjin-Tettey, 2022)

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Example of an activity

- Objective: Learners will analyse a recent disinformation campaign—either real or fictional—that occurred within the EU, identifying the challenges it presents and proposing strategies to counteract it.

Table 4 - Activity 1

Duration	Activities	Resources and materials:
(15 min)	Group Formation: Divide the class into small groups	
(10 min)	Campaign Selection: Each group chooses a recent disinformation campaign to analyse. This can either be a real campaign or a fictional one created for the purpose of the activity.	Internet access; Paper and pens; Electronic devices (computers, tablets or smartphones)
(30 min)	Research and Analysis: Groups will research their chosen campaign, focusing on the following aspects: 1. The nature of the disinformation (e.g., content, format, channels used). 2. The target audience and the impact on public perception. 3. The challenges posed by the campaign to democratic processes and public trust.	Internet access; Electronic devices (computers, tablets or smartphones); Notebooks, pens or digital applications; Media resources
(30 min)	Developing Solutions: Based on their analysis, groups will brainstorm and develop strategies to counteract the disinformation identified in their campaign. This could include: 1. Public awareness campaigns. 2. Regulatory measures. 3. Collaborative efforts among stakeholders.	Flipchart paper or whiteboard; Markers; Supporting materials; Electronic devices (optional)

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(30 min)	Group Presentations: Each group will present its findings and proposed solutions to the class. Presentations should include: 1. An overview of the campaign. 2. Key challenges identified. 3. Suggested countermeasures.	Project and computer for presentations; Flipchart or whiteboard; Note cards
(20 min)	Reflection Session: After all presentations, hold a reflection session where students can discuss: 1. What they learned from the different campaigns. 2. The effectiveness of the proposed strategies. 3. How disinformation can be addressed collectively in society.	Flipchart or whiteboard; Markers and post its; Feedback forms

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3.7. Sub-module - EU framework

SUB-MODULE SUMMARY/ MAIN CONTENTS	The growing proliferation of disinformation in the digital age has challenged social cohesion and the integrity of democratic processes in the European Union (EU). Foreign interference in elections, the spread of false information during crises, such as the COVID-19 pandemic, and the strategic use of disinformation at critical moments, have made the issue central to the political agenda of member states. Faced with this reality, the EU has promoted a comprehensive framework of strategies and policies that combine regulation, cooperation and education to combat disinformation effectively. This sub-module explores the policies and measures developed by the EU, such as the European Democracy Action Plan, the Digital Services Act and the Code of Practice on Disinformation. It also discusses the role of the European Digital Observatory and the action plan for digital education, which aim to promote a coordinated response among member states, strengthen transparency on digital platforms and foster media literacy. These initiatives are essential for creating a resilient European society, capable of identifying and dealing with misleading content and guaranteeing social and democratic cohesion in a complex digital environment.
LEARNING OUTCOMES OF THE SUB-MODULE	At the end of this sub-module, the learners should be able to: ● Recognise the EU legal and policy framework that addresses disinformation and media literacy, understanding its guidelines and recommendations.

Disinformation causes significant disruptions in society, especially in the context of elections and emergencies. Past experiences of foreign interference during electoral periods, the COVID-19 pandemic, and most recently, Russia's war in Ukraine highlight the urgency of measures to address this issue, which is now high on the agenda of many member state governments (Bleyer-Simon, 2021).

Disinformation is defined as verifiably false or misleading information that is created, presented, and disseminated for economic gain or to intentionally deceive the public, potentially causing public harm (as defined in the European Commission's Communication on tackling disinformation) (Bleyer-Simon, 2021).

The European Union has recognised the critical need to address the challenge of information disorder, which threatens the integrity of its democratic processes and the cohesion of its society. To combat disinformation, the EU has developed a comprehensive framework that includes regulatory, collaborative, and educational strategies aimed at curbing the spread of false information (Corbu et al., 2024).

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On that note, the European Union has devised a multifaceted plan comprising pillars and actions to address the growing challenge of disinformation. This plan includes initiatives such as the European Democracy Action Plan (EDAP), the Digital Services Act (DSA), the Code of Practice on Disinformation, the European Digital Media Observatory (EDMO), the Action Plan against Disinformation, and the Digital Education Action Plan, along with collaborations with social media platforms.

To foster a pan-European response to disinformation, in January 2018, the European Commission established the High-Level Expert Group on Fake News (later renamed the High-Level Expert Group on Fake News and Online Disinformation, hereafter referred to as the Expert Group). This group consists of industry representatives, civil society members, policymakers, and scholars, and aims to provide advice on policy initiatives to tackle the issues of online disinformation at the European level. In March of the same year, it produced a report that recommended a multidimensional approach to increasing the transparency of online news, promoting media literacy, developing tools to empower users, safeguarding the diversity and sustainability of the news ecosystem in Europe, and promoting research on the issue of disinformation (Bleyer-Simon, 2021).

Ahead of the 2019 European elections, the EU sponsored a 'European approach' to tackle disinformation. This initiative led to the signing of the Code of Practice on Disinformation (CoP), the first major initiative developed at the EU level to combat disinformation. The CoP followed the recommendations of the Expert Group and encouraged online platforms, among others, to ensure the transparency of political advertising and to restrict the automated spread of disinformation within the EU (ECA, 2021).

The 2018 Code of Practice (CoP) represented a significant step in defining a policy against disinformation, as its signatories committed to obligations that are not currently required by law. However, its impact was limited. Problems can be traced back, first, to the fact that the CoP did not provide detailed practical guidance for its signatories. The terms used in the commitments can be misinterpreted or may provide grounds for online platforms to selectively comply with their obligations (ECA, 2021).

These shortcomings were well-known at the European level. With the 2020 Democracy Action Plan, the European Commission began steering efforts to transform the Code of Practice on Disinformation into a co-regulatory framework, introducing obligations and requirements for accountability for online platforms. While the CoP focuses on disinformation, the Commission's guidance on strengthening the CoP emphasises the need to address certain forms of misinformation as well, particularly when they risk causing public harm. This extension of the CoP's approach has been criticised for posing threats to freedom of expression and information pluralism.

On 16 June 2022, the new Code of Practice on Disinformation was published (European Commission, 2022) with the aim of addressing some of the previously identified issues. In addition to online platforms and trade associations, the 34 signatories included fact-checkers, civil society organisations, research institutions, and companies providing services to identify disinformation. The new Code encompassed 44 commitments across nine areas. To mitigate some of the weaknesses of the earlier Code, the 2022 Code of Practice places a greater emphasis on key performance indicators (referred to as qualitative reporting elements and service level indicators) and monitoring mechanisms (Bleyer-Simon, 2021).

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European Democracy Action Plan (EDAP)

The European Democracy Action Plan (EDAP) was launched in December 2020 to safeguard democratic processes and promote media freedom. The plan seeks to address disinformation through a combination of regulatory measures, coordination between member states, and collaboration with the private sector. The key pillars of EDAP include:

1. **Enhancing Detection of Disinformation**: EDAP strengthens the EU's ability to detect disinformation in real time, enabling a more rapid response to emerging threats. The plan encourages member states to work closely with digital platforms to identify and take down disinformation campaigns before they can spread widely.
2. **Collaboration Between Member States**: The cross-border nature of disinformation requires a coordinated response across the EU. EDAP promotes collaboration between member states and ensures that actions taken in one country are supported and amplified across the entire region. This unified approach is critical to preventing the spread of disinformation across borders.
3. **Private Sector Involvement**: EDAP encourages collaboration with social media platforms and other private-sector actors. Platforms such as Facebook, Google, and Twitter are expected to take a more active role in preventing the spread of disinformation on their platforms. This includes increased transparency around political advertising and algorithmic content recommendation.

Digital Services Act (DSA)

The Digital Services Act (DSA), adopted in 2022, provides a legal framework that imposes stricter obligations on digital platforms to monitor and remove disinformation. (CMU, n.d.) Under the DSA, platforms must:

1. **Disclose Algorithms**: Platforms are required to be transparent about the algorithms they use to recommend content. This is a critical step in addressing the role that engagement-driven algorithms play in amplifying sensational or false content. By making these algorithms more transparent, the DSA aims to limit the reach of disinformation.
2. **Moderate Harmful Content**: The DSA places a stronger emphasis on content moderation, requiring platforms to take proactive steps to remove illegal content, including disinformation. This ensures that harmful false information does not proliferate.
3. **Enforce Accountability**: The DSA includes robust enforcement mechanisms, imposing fines of up to 6% of a company's global revenue for non-compliance. This ensures that platforms take their obligations seriously and implement effective strategies to combat disinformation.

European Digital Media Observatory (EDMO)

The European Digital Media Observatory (EDMO) is a collaborative initiative launched in 2020 that brings together fact-checkers, researchers, and media literacy experts across the EU. EDMO plays a

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critical role in monitoring disinformation trends and promoting best practices for identifying and countering false information. The observatory supports cross-border cooperation and provides a platform for sharing data and research on disinformation.

1. **Monitoring Disinformation Trends**: EDMO tracks the spread of disinformation across digital platforms, identifying emerging trends and sources of false information. This enables EU member states to respond more effectively to disinformation campaigns.
2. **Fact-Checking Initiatives**: EDMO collaborates with fact-checking organisations across the EU to ensure that disinformation is identified and countered with accurate information. By fostering collaboration among fact-checkers, EDMO enhances the EU's capacity to respond to disinformation in a coordinated manner.
3. **Media Literacy Promotion**: EDMO supports media literacy initiatives aimed at educating the public about the dangers of disinformation. By promoting critical thinking and digital literacy, EDMO helps build societal resilience against disinformation.

Code of Practice on Disinformation

The Code of Practice on Disinformation, introduced in 2018, is a voluntary agreement between online platforms and the EU to prevent the spread of false information. While the code has had limited success due to its non-binding nature, it remains a significant step in establishing guidelines for platform accountability.

1. **Transparency in Political Advertising**: Platforms that sign the Code of Practice are required to disclose the sources of political advertisements and ensure that these ads are not used to spread disinformation. This promotes greater transparency and accountability in online political campaigning.
2. **Limits on Automated Bots**: The code encourages platforms to restrict the use of automated bots, which are often employed to amplify disinformation campaigns. By limiting the reach of these bots, the EU hopes to reduce the spread of false information.
3. **Key Performance Indicators**: The 2022 update to the Code of Practice introduced key performance indicators (KPIs) to measure the effectiveness of platforms' efforts to combat disinformation. These indicators help ensure that platforms are held accountable for their actions and provide a clear framework for assessing their performance.

Digital Education Action Plan (2021-2027)

The Digital Education Action Plan emphasises the need for digital literacy and media literacy education across all EU member states. This plan aims to build long-term resilience against disinformation by equipping citizens with the skills they need to critically evaluate digital content. Key components of the plan include:

1. **Integration of Media Literacy into School Curricula**: The Digital Education Action Plan promotes the integration of media literacy into school curricula, ensuring that students are taught how to identify and critically evaluate disinformation from an early age.

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2. **Teacher Training and Professional Development**: The plan supports the ongoing professional development of teachers, providing them with the tools and knowledge needed to teach media literacy effectively. This includes training on the latest digital tools and strategies for combating disinformation in the classroom.
3. **Lifelong Learning Initiatives**: The plan recognises that media literacy education must be a lifelong endeavour, particularly in the face of rapidly evolving digital platforms. As such, it promotes ongoing learning opportunities for citizens of all ages, ensuring that they are equipped to navigate the digital world safely and responsibly.

Public Awareness Campaigns

In addition to regulatory and educational strategies, the EU has launched several public awareness campaigns to combat the spread of disinformation. Campaigns such as **#ThinkBeforeSharing** encourage citizens to verify information before sharing it online, promoting responsible digital behaviour and helping to curb the viral spread of false information (Casero-Ripollés et al., 2023).

In conclusion, the EU's comprehensive strategy to combat disinformation reflects a recognition of the multifaceted nature of the problem. Through regulatory frameworks, collaboration with digital platforms, and educational initiatives, the EU aims to create a resilient society capable of navigating the complexities of the digital information landscape. By addressing disinformation proactively, the EU seeks to protect the integrity of its democratic processes and promote a well-informed citizenry, ultimately strengthening social cohesion in an increasingly fragmented information environment.

Despite the challenges, several European countries have implemented effective strategies to combat fake news, providing valuable lessons for others. These best practices include collaborative efforts, technological innovations, and comprehensive media literacy programs.

Collaboration between governments, media organisations, and civil society

- This collaboration is essential for effectively combating disinformation.
- The European Digital Media Observatory (EDMO) plays a key role in fostering such collaboration by bringing together stakeholders from across Europe to share best practices and develop innovative solutions.
- Dr. Frau-Meigs has praised these collaborative efforts, noting, "The strength of EDMO lies in its ability to bring together a diverse group of experts and stakeholders, creating a network that can respond quickly and effectively to emerging disinformation threats" (Frau-Meigs, 2020).

Media Literacy Curricula

- Countries like Finland and Sweden have led the way in integrating media literacy into their national curricula, ensuring that citizens are equipped with the skills needed to navigate the digital landscape. Professor Livingstone has underscored the importance of these programs: "Media literacy is not just about teaching people to identify fake news; it’s about empowering them to engage critically with all forms of media. This is essential for maintaining a healthy democracy" (Livingstone, 2020).

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Example of an activity

- Objective: Learners will analyse a recent EU policy or initiative to combat disinformation. Learners will identify and analyse its strengths and weakness and propose different solutions.

Table 5 - Activity 2

Duration	Activities	Resources and materials:
(5 min)	Group Formation: Divide the class into small groups	
(15 min)	Campaign Selection: Each group chooses an EU policy or initiative	Internet access; Paper and pens; Electronic devices (computers, tablets or smartphones)
(45 min)	Research and Analysis: Groups will research their chosen policy or initiave,, focusing on the following aspects: 1. Identify its strengths and weakness 2. The target audience and the impact on public perception. 3. The challenges posed by the campaign to democratic processes and public trust.	Internet access; Electronic devices (computers, tablets or smartphones); Notebooks, pens or digital applications; Media resources
(30 min)	Developing Solutions: Based on their analysis, groups will brainstorm and develop recommendations for improvement:	Flipchart paper or whiteboard; Markers; Supporting materials; Electronic devices (optional)
(30 min)	Group Presentations: Each group will present its findings and proposed solutions to the class. Presentations should include:	Project and computer for presentations; Flipchart or

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	1. An overview of the initiative or framework. 2. Key challenges identified. 3. Suggested countermeasures.	whiteboard; Note cards
(20 min)	Reflection Session: After all presentations, hold a reflection session where students can discuss:	Flipchart or whiteboard; Markers and post its; Feedback forms

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4. MODULE II: MEDIA ENVIRONMENT AND CHALLENGES

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4.1. Module II – Objectives

MODULE SUMMARY/ MAIN CONTENTS	In this module, learners will explore the identification of key terms and concepts related to misinformation, disinformation, malinformation, filter bubbles, echo chambers, and conspiracy theories. They will examine the characteristics of these phenomena and reflect on their impact at both individual and community levels. This understanding will empower them to critically analyse how social media contributes to these issues and to recognise the broader implications for society.
TIMETABLE & SCHEDULE	Synchronous session - 2 hours • Content Asynchronous session – 2 hours • Exercises
LEARNING OUTCOMES OF THE MODULE	At the end of this module, learners should be able to: • Identify and differentiate between the terms and concepts related to information disorder, including misinformation, disinformation, and malinformation, and analyse their characteristics to understand their implications in the digital age. • Identify and evaluate the effects of filter bubbles and echo chambers on individual beliefs and behaviour. • Reflect on the current media environment by examining the roles of filter bubbles and echo chambers and assess their impact on individual perceptions and community discourse regarding information dissemination. • Explain the psychological and sociopolitical factors that contribute to the spread of conspiracy theories.

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The importance of teachers being familiar with the terminology of fake news, conspiracy theories, and the workings of social media is essential today. In the digital world, children and youth have constant access to a vast amount of information through social media, and unfortunately, much of this information is unreliable or misleading. This poses significant risks to their development, critical thinking skills, and worldview.

First, it is crucial for the teachers to understand the terminology associated with fake news and conspiracy theories. Fake news refers to intentionally fabricated or distorted information presented as fact, while conspiracy theories are often unsubstantiated claims that secret, malicious groups are responsible for significant social events. Understanding these concepts enables teachers to help students recognise reliable information and guard against deception (EU Science Hub).

Secondly, social media platforms play a central role in the dissemination of conspiracy theories and misinformation. Dubious ideas about electoral fraud, COVID-19 vaccine safety, and claims of Satanic paedophiles controlling the government, for example, swiftly navigate social media platforms, often avoiding censors while feeding algorithms that further promote them (Marwick & Lewis, 2017; Vosoughi et al., 2018). The adoption of such ideas can have tangible consequences for political discourse and behaviour (Jolley et al., 2020), prompting serious concern about the impact of social media on individuals' beliefs in dangerous falsehoods (Lazer et al., 2018). The online spread of AI-generated, disguised hateful content has recently been linked to actions in the real world. Awareness of these hidden messages is key for teachers and parents to prevent their influence and the further spread of these cryptic narratives (Caubergs, 2023).

Algorithms on platforms such as Facebook and YouTube often prioritise content that evokes strong emotions, meaning that sensational fake news spreads faster and further than factual information. Teachers need to understand not only how these algorithms work but also how to guide young people in thinking critically about the information they encounter online (European Commission; Reuters Institute).

Moreover, the greatest danger of fake news and conspiracy theories is their ability to distort the truth and sow distrust in established institutions and science. This can lead to radicalisation, distrust of government, and even dangerous behaviour in the 'real' world, as evidenced by the spread of misinformation about COVID-19. Young people are especially susceptible to these influences because their critical thinking skills are still developing (EU Science Hub).

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4.3. Sub-module - Information disorder

SUB-MODULE SUMMARY/ MAIN CONTENTS	This sub-module explores the topic of information disorder, discussing its mechanism and the roles of the agent, message, and interpreter, as well as the phases of creation, production, and distribution. It introduces its three main types misinformation, disinformation, and disinformation, explaining how each type differs in intent and effect. It also covers the seven sub-types: satire or parody, false connection, misleading content, false context, imposter content, manipulated content, and fabricated content. The goal of this sub-module is to equip teachers with the tools to foster media literacy and critical thinking in students.
LEARNING OUTCOMES OF THE SUB-MODULE	At the end of this sub-module, the learners should be able to: ● critically analyse different types of information disorder, including misinformation, disinformation and malinformation.

In the 21st century, the internet and social media have revolutionised how we communicate and access information. However, this shift has also led to an alarming rise in "information disorder." This term encompasses various forms of false or misleading information that spread quickly and easily, confusing audiences and damaging trust in reliable sources. As teachers, it is essential to help students navigate this new landscape by equipping them with the tools to recognise and critically evaluate the information they encounter.

This module aims to provide teachers with a comprehensive understanding of the concept of information disorder, enabling them to teach students media literacy and encourage critical thinking.

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The Term "Fake News"

While the term "fake news" has become widely used, it does not fully capture the complexity of information disorder. Most of the content shared today is not entirely fake; rather, it involves genuine information taken out of context or manipulated to deceive. Furthermore, the phrase has been politically weaponised, often used to discredit legitimate journalism. In fact, many people now associate "fake news" with respected outlets like CNN or the BBC, thereby undermining the role of professional journalism in society.

Therefore, instead of focusing solely on "fake news," it is important to adopt the term "information disorder" to encompass a broader range of deceptive practices. This approach allows for a more nuanced understanding of the issue and fosters a more responsible dialogue about the sources of information that students encounter.

Mechanism of Information Disorder

Understanding how information disorder functions require examining its mechanism through three key elements:

- **Agent**: The individual or group responsible for creating or spreading false information. Agents can be motivated by financial gain, political power, or a desire to create chaos.
- **Message**: The form that the false information takes, such as a meme, video, or news article. The message is crafted to appeal to the target audience, often using emotionally charged language or imagery.
- **Interpreter**: The person or group receiving the message. How they interpret it and what actions they take can amplify the spread of false information. For instance, a person might unknowingly share a misleading news story, helping it reach more people.

Additionally, information disorder typically follows three phases:

- **Creation**: The initial development of the misleading or false content.
- **Production**: Turning the message into media, whether it be a video, article, or image.
- **Distribution**: Sharing the content across various platforms, like social media, where it can go viral quickly.

Types of Information Disorder

Information disorder can be broken down into three primary categories, each with distinct characteristics:

- **Misinformation**: This occurs when false information is shared without harmful intent. Often, individuals spread misinformation without realising it is inaccurate. For example, someone might share an outdated news article that they believe is still relevant, inadvertently spreading misleading information.
- **Disinformation**: This refers to intentionally false information created to cause harm. Disinformation is often driven by financial gain, political motives, or the desire to cause

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disruption. For instance, during political campaigns, false stories may be circulated to sway public opinion or discredit opponents**.**

- **Malinformation**: This involves the use of genuine information with harmful intent. In some cases, private information is made public to damage someone's reputation. Alternatively, true information is presented out of context to create a misleading narrative.

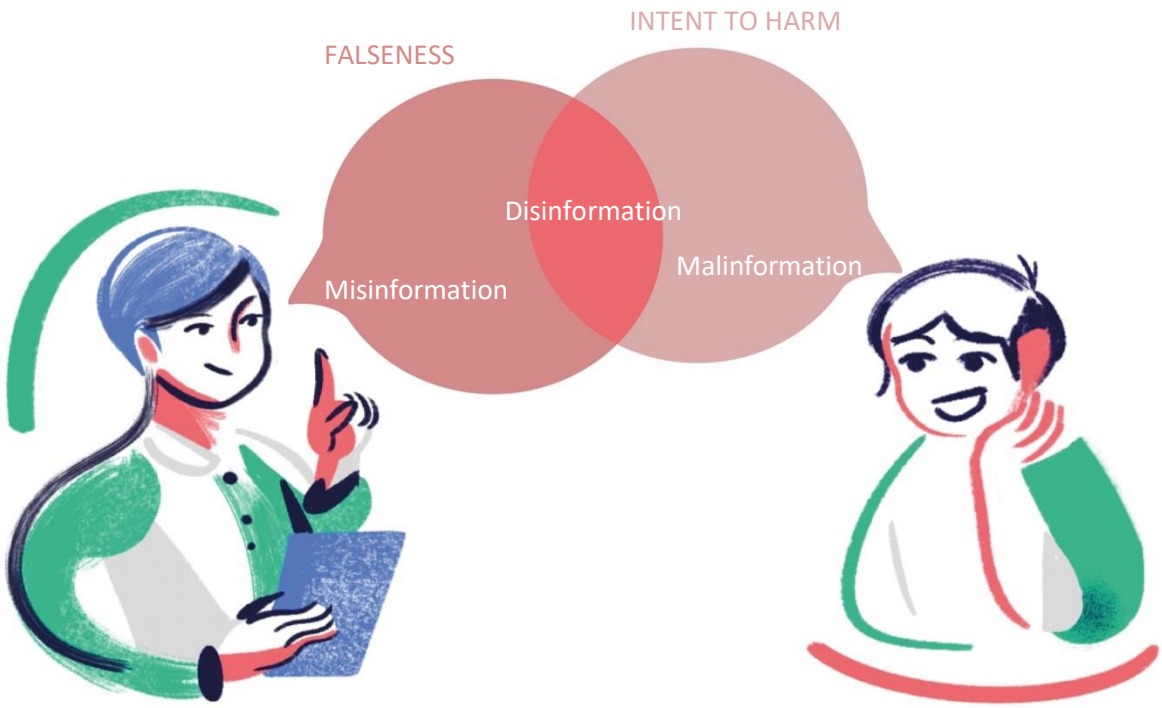

Figure 2 - The three main types of information disorder

Sub-types of Information Disorder

Understanding the sub-types of information disorder helps to better classify the different ways misleading content can spread:

- **Satire or parody**: No intention to cause harm but has potential to fool.

Satire and parody, while valuable art forms, can be weaponised in the context of information disorder. Satire is often used strategically to spread rumours or conspiracy theories while evading fact-checkers, as its creators can dismiss any challenges by claiming it was not meant to be taken seriously. The issue arises as satire gets reshared, losing its original context. Unlike traditional media, social media lacks visual cues (such as opinion sections in newspapers), making it harder for audiences to recognise satire, leading to potential misinterpretation.

- **False connection**: When headlines, visuals or captions do not support the content.

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False connection, often seen in clickbait, happens when headlines are sensationalised to grab attention but do not match the actual content of the article. This practice can confuse readers and lower trust in news sources. While some may argue the impact is small because many are familiar with clickbait, it still adds to the spread of misinformation. In a time when newsrooms are competing for attention, strong headlines can boost readership, but when they mislead, it becomes part of the problem of information disorder.

- **Misleading content**: Misleading use of information to frame an issue or individual.

Misleading content happens when information is presented in a way that distorts reality. This can include changing a headline to make it seem more dramatic, quoting only parts of a statement, using statistics out of context, or leaving out facts that do not support the main point. Everyone tends to highlight things that back up their argument, but when done intentionally, it tricks the audience into seeing a biased version of the truth. This can lead to misunderstanding or a distorted view of the topic.

- **False context**: When genuine content is shared with false contextual information.

False context refers to the misuse of genuine content by presenting it in a misleading or distorted way. While the content itself is real, it is often framed to provoke emotions or support a specific narrative that may not be accurate. This is particularly dangerous because people may recognise the content as legitimate but fail to realise it has been taken out of context.

- **Imposter content**: When genuine sources are impersonated.

Imposter content refers to false or misleading information that uses the logos, branding, or names of well-known organisations or trusted figures to deceive people. Since our brains rely on mental shortcuts, seeing familiar brands often makes us believe the content is credible without questioning it. Imposter content manipulates this trust by imitating reputable sources, such as news outlets or international organisations, to make the false information seem legitimate.

- **Manipulated content**: When genuine information or imagery is manipulated to deceive.

Manipulated content involves altering genuine media, such as photos or videos, to create a false or misleading impression. This often includes editing or combining images to change their context or meaning. By doing so, the altered content is presented as real, which can confuse or deceive viewers. Manipulated media can be especially dangerous because the original elements may be recognisable, leading people to trust the modified version without realising it has been altered to mislead them.

- **Fabricated content**: New content that is 100% false, made to deceive and do harm.

Fabricated content refers to completely false information that is made up with the intent to deceive. This type of content is entirely fictional, with no basis in reality, and is often created to generate attention, manipulate public opinion, or cause harm. Fabricated stories can go viral, especially when they tap into emotional or controversial topics. These false narratives can be particularly convincing when they mimic the style of legitimate news or use realistic imagery, further blurring the lines between fact and fiction.

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Example of an Activity

- Objective: To help teachers identify different forms of information disorder and understand their impact on media literacy.

Table 6 - Activity 4

Duration	Activities	Resources and materials:
(10 min)	Group Formation: Divide the class into small groups	
(15 min)	Introduction: 1. Briefly explain the concept of information disorder and its types: misinformation, disinformation, and disinformation. 2. Clarify the sub-types such as manipulated content, false context, and imposter content.	
(45 min)	Group Work: 1. Ask each group to analyse the printed examples they have been given. 2. Each group must: Identify which type of information disorder is present in the example. Explain why they categorised it as such. Discuss the potential impact this content might have if shared widely. • Groups record their analysis on flip charts for later discussion. They can use sticky notes to mark key terms, examples, or doubts they come across during their analysis.	Printed examples of various types of information disorder (misinformation, disinformation, disinformation, and sub-types like satire, false context, etc.).
(15 min)	Discussion:	Flip charts and markers; Sticky notes

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	1. Groups will present their findings to the larger group using their flip charts and explaining their reasoning. 2. Encourage the other groups to ask questions or challenge the conclusions.	
(20 min)	Wrap-up: 1. As a group, reflect on how these types of content can affect public perception and media trust. 2. Discuss strategies teachers can use in their classrooms to help students recognise and critically analyse such content. 3. During the wrap-up, use sticky notes to create a "mind map" on a flip chart, highlighting recurring themes or concepts from the groups' presentations.	Flip charts and markers; Sticky notes

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4.4. Sub-module - Review of the media environment

SUB-MODULE SUMMARY/ MAIN CONTENTS	This submodule contains an introduction to the social media landscape, the internet landscape and how users of the online world interact internally and how these interactions can influence the 'live' world.
LEARNING OUTCOMES OF THE SUB-MODULE	By the end of this sub-module, learners should be able to: ● recognise different types of communication patterns that can appear on social media.

The internet has revolutionised communication, offering unprecedented opportunities to connect with others in diverse ways. In this sub-module, you will explore various social media platforms, their functionalities, and the types of content they offer. You will also gain insights into the different methods of creating, conveying, concealing, and interpreting messages online.

Vocabulary (Content Moderation, Emoticons, Algorithms, Conspiracy Theory)

- Content Moderation

Content moderation involves monitoring, reviewing, and managing user-generated content on platforms such as social media, forums, and websites to ensure compliance with established guidelines, standards, and legal requirements. This process may include removing or altering inappropriate, harmful, or illegal content and acting against users who violate platform rules. The goal is to maintain a safe, respectful, and lawful online environment.

- Emoticons

Emoticons are visual representations of emotions through images, symbols, or combinations of characters.

- Algorithms (see also submodule: Threat- Filter Bubbles & Echo Chambers)

An algorithm is a mathematical formula, or a set of instructions designed to solve a specific problem. In the context of programming, algorithms are used to dictate how systems behave in given scenarios. For example, the Dutch mathematician Edsger Dijkstra developed an algorithm to calculate the shortest distance between two points, which is now commonly applied in navigation systems. Algorithms also power recommendation engines, such as YouTube's, which suggest content based on user preferences.

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- Conspiracy Theory (see also submodule: Conspiracy Theories)

A conspiracy theory is the belief or assumption that significant events or conditions, particularly in social, political, or economic spheres, are the result of secret plots orchestrated by powerful, often malevolent groups. Those who adhere to conspiracy theories are referred to as conspiracy theorists.

My Social Media Landscape versus The Social Media Landscape

The term "my social media" is more accurate than "the social media," as the understanding and use of platforms vary significantly depending on factors such as age, language, and interests. The classification of social media here presented is based on three primary criteria: content analysis, user demographics, and the extent of content moderation.

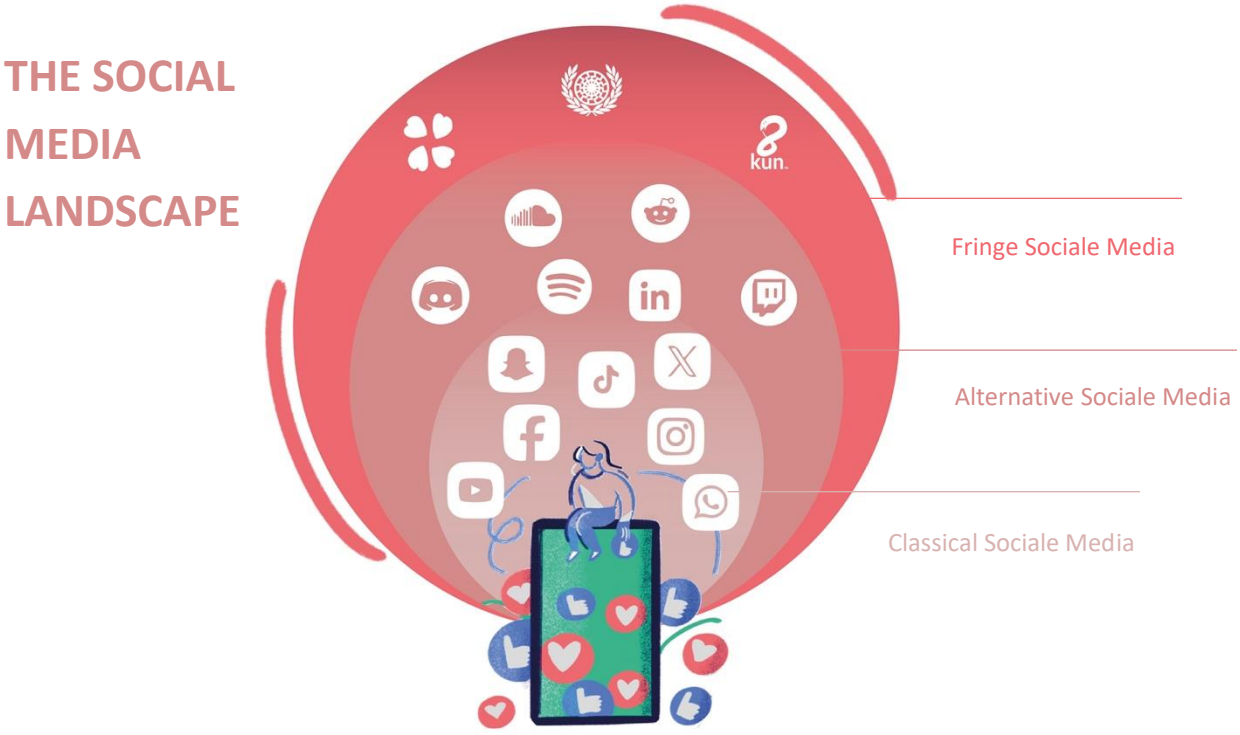

Figure 3 - The social media landscape

Mainstream Platforms

These include widely recognised platforms such as YouTube, Facebook, and WhatsApp.

- Substantial User Base

Facebook, for example, boasts approximately 3.3 billion MAU (monthly active users), whereas X (Twitter) has about 400 million MAU, TikTok; 1.1 billion MAU and Instagram counts 2.35 billion MAU. These platforms cater to a diverse audience in terms of age and background.

- Content

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Mainstream platforms host a wide range of content, including text, images, videos, and audio in various languages, such as Arabic, Chinese, and Japanese.

- Proactive Content Moderation

Content deemed inappropriate—such as offensive language or harmful symbols like the swastika—is automatically flagged or blocked. Users can also report content that bypasses these moderation filters for further review.

Alternative Platforms

These platforms, while smaller in scale, still attract a significant user base ranging from tens to hundreds of millions.

- Niche Audiences

Users on these platforms often share common interests, such as digital photography or ancient history, and are sometimes grouped by language or cultural background. An example is Vkontakte, a Russian equivalent of Facebook.

- Content

Like mainstream platforms, these alternative spaces offer text, video, and image-sharing capabilities.

- Limited Content Moderation

Content moderation is typically less stringent, and platforms may permit content that would be prohibited on mainstream sites. For example, some may allow neo-Nazi rhetoric while blocking content with religious undertones.

Fringe Platforms

These platforms cater to smaller, more ideologically homogeneous groups.

- Limited User Base

Although fringe platforms may have fewer users, typically numbering in the hundreds of thousands, their communities tend to be highly selective and protective of their ideological purity.

- Content

Content on these platforms can be extreme and troubling, often focusing on political or ideological issues that appeal to niche groups such as neo-Nazis or anti-religious extremists.

- Minimal Content Moderation

Due to the homogeneous nature of these groups, content moderation is rare, and users are unlikely to report inappropriate content. As a result, harmful material often goes unchecked.

The Structure of the Internet

The internet is divided into several layers, with the surface web being the most accessible. The deep web and dark web, however, operate outside the scope of traditional search engines and serve different functions.

Deep Web

Includes all web pages not indexed by search engines, such as private databases, email accounts, and online banking systems. Access to this content requires proper credentials and is generally used for legitimate purposes.

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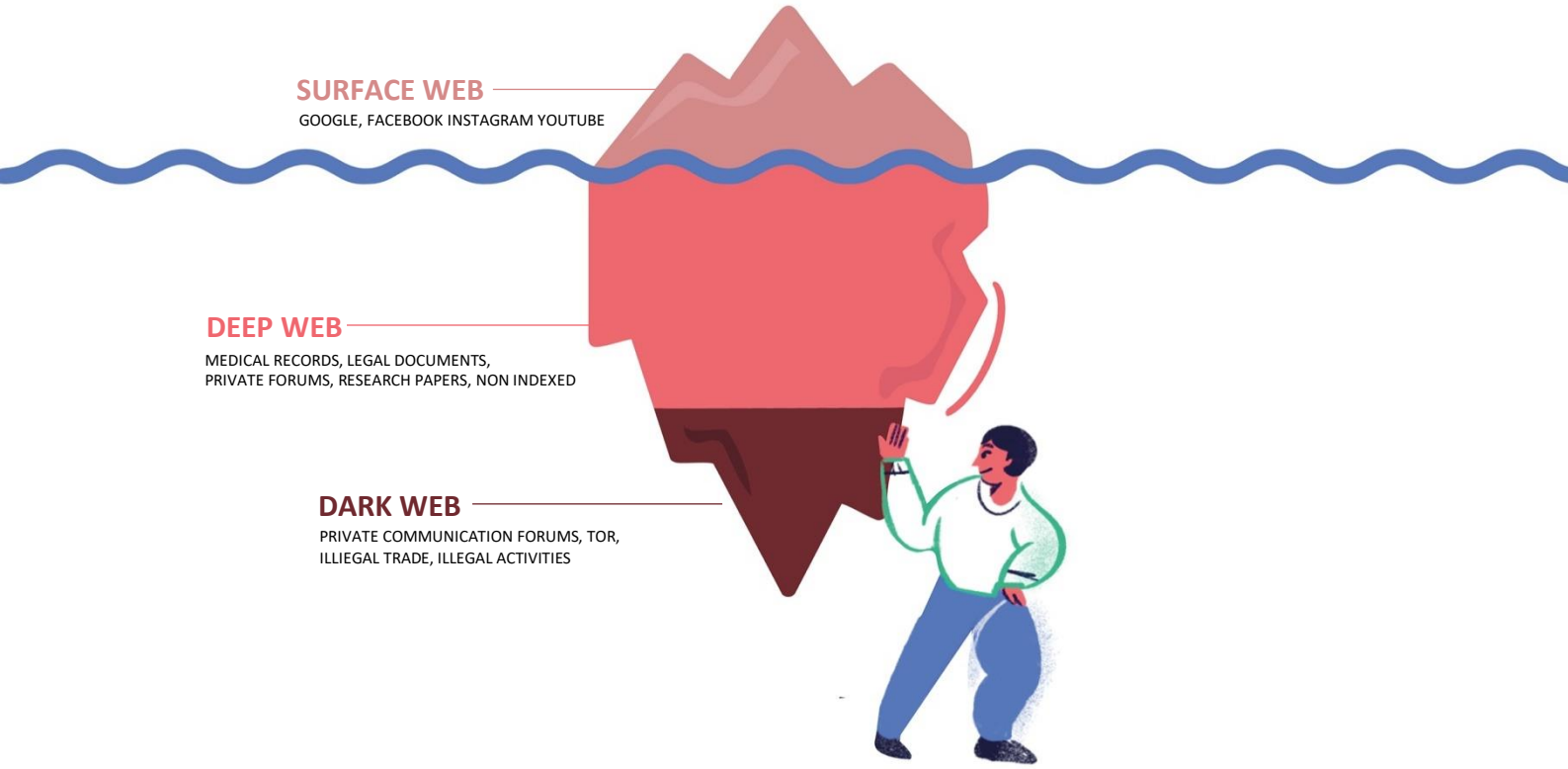
Dark Web

A smaller subset of the deep web, accessible only through special software like the Tor browser. It provides anonymity to users and is often associated with illegal activities, though it is also used by journalists, activists, and whistleblowers for secure communication.



Communication Analysis: Creativity and Risk

Various online platforms allow users to transmit coded or cryptic messages, including racist or extremist content, using symbols, memes, and AI-generated material. These communications can have real-world implications, potentially encouraging harmful behaviour.

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Example of an Activity

- Objective: To equip students with the tools to recognise, interpret, and address different types of communication within social media.

Table 7 - Activity 5

Duration	Activities	Resources and materials:
(10 min)	Group Formation: Divide the class into small groups	
(15 min)	Introduction: 1. Provide a brief overview of the activity, focusing on the analysis of hidden messages in online communication.	Images with hidden messages
(45 min)	Group Work: Each group will: 1. Identify hidden messages in the provided materials. 2. Explain their reasoning for categorising the content as they did. 3. Discuss the potential impact of widely sharing such content.	Printed examples of memes, emoticon combinations, etc. (5 types); Sticky notes or notepads
(15 min)	Discussion: 1. Groups will present their findings to the larger groups, encouraging dialogue and critical thinking.	Flip charts and markers
(20 min)	Wrap-up: 1. The trainer will clarify different types of online communication and provide additional insights where necessary. Conclude the activity with a discussion on the importance of social media literacy for teachers and strategies for integrating similar activities into the classroom to help students navigate and critically assess online information.	

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	This exercise promotes critical thinking and collaboration, enabling teachers to better understand and address information disorder within social media.	

Examples of hidden messages for the Activity

Figure 5 - Examples of hidden messages

AI generated in collaboration with [textgain]

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4.5. Sub-module - Threat- Filter Bubbles & Echo Chambers

SUB-MODULE SUMMARY/ MAIN CONTENTS	This sub-module will explore the threats posed by modern digital technologies, particularly the algorithms, AI, filter bubbles and echo chambers that shape the way information is consumed online. These mechanisms can create isolated information environments. Teachers will examine how these technologies affect students' media consumption and develop strategies to help them critically navigate these challenges.
LEARNING OUTCOMES OF THE SUB-MODULE	By the end of this sub-module, learners will be able to: ● identify and evaluate the effects of filter bubbles and echo chambers on individual beliefs and behaviour.

In today's media environment, digital technologies such as algorithms and artificial intelligence (AI) play a central role in shaping the information you encounter. These technologies influence the content you see, often without you even realising it. For example, think about the videos recommended to you on YouTube or the posts that appear on your Facebook feed. These suggestions are not random - they are driven by algorithms that track your online activity. Understanding how these systems work is crucial to recognising how they can subtly influence the way you perceive information.

Let's break down the key concepts you need to be aware of:

- **Algorithms** are the digital processes that platforms like Facebook, YouTube and Google use to decide what content to show you. For example, if you often like or share posts about a particular topic, such as environmental issues, the algorithm will prioritise content related to that topic and show you more of it. While this can be helpful, it can also limit your exposure to other viewpoints, creating what's known as a filter bubble. In a **filter bubble**, you tend to see content that reinforces your existing beliefs and interests. For example, if you have strong opinions about climate change, you may only see articles or videos that support your views, while opposing perspectives are filtered out. This can make it harder for you to get the full picture or to see the issue from different angles.

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- Similarly, you may find yourself in an **echo chamber**. Echo chambers occur in spaces where like-minded people gather, such as certain online forums or social media groups. In these spaces, similar views are repeated and reinforced, while opposing views are often dismissed or ridiculed. For example, a person who frequently visits conspiracy theory groups may be exposed to a constant stream of content that supports these theories, with little or no exposure to content that debunks them. This reinforces their beliefs and makes them more resistant to new or contradictory information.

- **AI technologies** power many of these algorithms, learning from your interactions and predicting what you might want to see next. Take TikTok, for example: the app's AI is constantly learning what types of videos you finish watching or interacting with, and it uses this information to recommend more content that it anticipates will keep you engaged. However, this becomes problematic when AI systems prioritise content that grabs your attention - such as sensational or emotionally charged posts - over content that is factual or balanced. For example, during the 2016 US election, Facebook's algorithm was found to prioritise controversial political posts, many of which spread misinformation, because they were more likely to engage users. This means that false or misleading information, such as fake news, can quickly go viral because it triggers emotional responses and fits into the narratives that users are already inclined to believe.

Filter bubbles, echo chambers, algorithms and AI - are shaping the media consumed. For example, if we often watch videos about one political party on YouTube, we will notice how the platform suggests more videos from the same point of view? Or how certain types of news articles are more likely to appear in your social media feeds? Think about how often you come across content that confirms rather than challenges your beliefs. By recognising these patterns, we can take steps to seek out different perspectives, actively research and avoid being trapped in narrow, curated information bubbles.

Here are some concrete steps we can take:

- Diversify your sources of information:
    - Make a conscious effort to follow a wide range of news sources, especially those with different political or ideological perspectives. For example, if you typically read one type of newspaper or website, try reading others that offer contrasting viewpoints.
    - Subscribe to independent news outlets or global media that offer more balanced coverage to broaden your perspective.
- Customise your social media feeds:
    - Many social media platforms allow you to follow different topics or mute certain content. Use these settings to diversify the types of information that appear in your feed.
    - Actively follow experts, academics or people from different backgrounds to expose yourself to different viewpoints. For example, follow public figures or Pages from different political sides.

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- Use fact-checking websites:
    - Before you accept or share information, check it using reputable fact-checking sites such as Snopes, FactCheck.org or BBC Reality Check. This will help ensure that you're dealing with accurate information rather than sensationalist or biased reporting.
- Seek out opposing views:
    - Challenge yourself by looking for content that presents the other side of an issue you're interested in. For example, if you're reading an article that supports one side of an argument, find another article that argues the opposite side to compare the reasoning and evidence.
- Join discussions outside your usual circles:
    - Join forums, debates or groups that encourage constructive conversations about different points of view. Engaging with people who think differently can provide fresh insights and reduce your exposure to echo chambers.
- Search for information using neutral keywords:
    - When researching a topic, try using neutral, less emotionally charged keywords. This can help you find more balanced information and avoid content that reinforces existing biases.
- Be critical of algorithms:
    - Understand that the content you see is often curated by algorithms designed to keep you engaged. Take an active role by asking why you are being shown certain information. Use browser extensions or tools that help you track how platforms customise your feed.
- Check information with multiple sources:
    - Don't rely on one source for news or information. Always cross-check facts across multiple platforms, including traditional media, social media and academic resources.
- Limit engagement with sensational content:
    - Be wary of engaging with emotionally charged or sensational content, as algorithms prioritise such content for visibility. Limiting your clicks and shares on these posts will reduce their influence on what you're shown in the future.

Additional Resources / Further Reading:

- The Filter Bubble: What the Internet is Hiding from You by Eli Pariser. New. York: Penguin Press, 2011. 294 pp. ISBN: 978-0-670-92038-9 (book)
- Algorithms of Oppression: How Search Engines Reinforce Racism" by Safiya Umoja Noble Safiya Umoja Noble, published by: NYU Press (book)
- How AI is Shaping the News You See, Goethe institut, retrieved on 29.09.2024: https://www.goethe.de/prj/k40/en/lan/aij.html
- Ranalli, C., & Malcom, F. (2023). What's so bad about echo chambers? Inquiry, 1–43. https://doi.org/10.1080/0020174X.2023.2174590
- "Why is it so hard to escape from the echo chamber" Article retrieved on 29.09.2024: https://aeon.co/essays/why-its-as-hard-to-escape-an-echo-chamber-as-it-is-to-flee-a-cult

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Example of an Activity

- Objective: To help students understand the concept of echo chambers and their impact on perspectives and beliefs.

Table 8 - Activity 6

Duration	Activities	Resources and materials:
(10 min)	Group Formation: Divide the class into small groups	
(10 min)	Introduction: 1. Begin by briefly introducing the concept of echo chambers. Explain that an echo chamber is an environment where a person only encounters information or opinions that reflect and reinforce their own, often leading to a distorted understanding of reality.	
(20 min)	Media exploration: 1. Provide each group with a variety of media sources, including articles with different perspectives on a single issue (e.g. climate change, immigration, technology). 2. Ask the groups to analyse the sources and sort them into two columns: - Agree: Sources that agree with their existing beliefs. - Disagree: Sources that challenge their beliefs.	Access to various media sources (news articles, social media posts, videos, etc.)
(15 min)	Discussion: 1. Have each group discuss the sources they have categorised. Encourage them to think: - How many sources did they find that agreed with their views compared to those that disagreed? - Did they feel comfortable or uncomfortable reading the sources that disagreed with them? Why?	

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	- How might this reflect their media consumption habits outside the classroom?	
(15 min)	Reflection and debrief: 1. Bring the class back together and ask each group to share their findings. Write key points on the whiteboard, highlighting patterns in their experiences. 2. Discuss questions such as: - How do echo chambers affect our understanding of complex issues? - What are the potential consequences of living in an echo chamber for individuals and society? - How can we consciously seek out different perspectives to break out of echo chambers?	A large whiteboard or flip chart; Markers
(10 min)	Personal reflection: 1. Ask students to write a short reflection in their journals using the following prompts: - What is a new insight you have gained about echo chambers? - How can you make sure you're exposed to a variety of viewpoints in your own life?	Reflection journals or paper

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4.6. Sub-module - Conspiracy theories

SUB-MODULE SUMMARY/ MAIN CONTENTS	This sub-module explores the subject of conspiracy theories – what they are, who do people believe in them, who is contributing to their spread, and what the consequences on the individual and societal level are. It then proposed some steps on what can be done about the problem
LEARNING OUTCOMES OF THE SUB-MODULE	By the end of this module, learners should be able to: ● Explain the psychological and sociopolitical factors that contribute to the spread of conspiracy theories.

What is a conspiracy theory?

There are many definitions of what conspiracy theories are. This one has been prepared by the European Commission and UNESCO (European Commission 2020):

A conspiracy theory is the belief that certain events or situations are secretly manipulated behind the scenes by powerful forces with negative intent.

Conspiracy theories usually share 6 common elements (European Commission 2020):

1. *An alleged, secret **plot**.*
2. *A group of **conspirators**.*
3. *'**Evidence**' that seems to support the conspiracy theory.*
4. *They falsely suggest that **nothing happens by accident** and that there are no coincidences; nothing is as it appears, and everything is connected.*
5. *They divide the world into **good or bad**.*
6. *They **scapegoat** people and groups.*

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Let us look at an example: The spread of COVID-19, which disrupted people's lives to an unprecedented scale, surely was not just a coincidence (*point 4*). On the contrary, there is every reason to believe that the virus was created in a laboratory (*point 1*). This was done by the global elite (*point 2*) in order to limit people's freedom and impose mandatory vaccinations, which would cause infertility and would kill off a large portion of the population. One only needs to see the videos of all the people who fall ill after being vaccinated to be convinced (*point 3*). The people are being sold out by a corrupt scientific community who support the measures (*point 5*). Ultimately, the blame lies with the government, who needs to be disobeyed (*point 6*).

Not all conspiracy theories share all 6 common elements, but most ones do. They are hardly a new phenomenon – they have been a part of human society at least as long as recorded history.

Who do people believe in conspiracy theories?

One of the main causes of belief in conspiracy theories is the fact that people rarely logically examine all their own beliefs. Instead, they usually adopt them from other people they trust. Researchers Sunstein and Vermeule explain this phenomenon (Sunstein; Vermeule 2008, p.9):

*"For most of what they believe that they know, human beings lack personal or direct information; they must rely on what other people think. In some domains, people suffer from a "**crippled epistemology**," in the sense that they know very few things, and what they know is wrong."*

Another widespread explanation has been proposed by David Dunning – when dealing with complex phenomena, people often lack the very ability to understand the complexity they are facing, and consequently vastly overestimate their own ability to understand them and produce coherent explanations. This is the so-called Dunning-Kruger effect (Dunning, 2011, p.248):

*"The scope of people's ignorance is often invisible to them. This meta-ignorance (or ignorance of ignorance) arises because lack of expertise and knowledge often hides in the realm of the 'unknown unknowns' or is disguised by erroneous beliefs and background knowledge that only appear to be sufficient to conclude a right answer. **Poor performers in many social and intellectual domains seem largely unaware of just how deficient their expertise is.** Their deficits leave them with a double burden – not only does their incomplete and misguided knowledge lead them to make mistakes but those exact same deficits also prevent them from recognizing when they are making mistakes and other people choosing more wisely."*

Autor Michael Shermerm however, claims that focusing on the cognitive limitations of people (what they get wrong) misses the real reasons people adopt conspiratorial beliefs. Very often these are not just about simply producing a coherent explanation of existing facts. Other powerful motives, such as deeply held beliefs, belonging to a group, and coping mechanisms created long ago are at play (Shaermer 2022 p.X):

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1. **"Proxy conspiracism**. Many conspiracy theories are proxies for a different type of conspiracist truth – a deeper mystic, psychological, or lived-experience truth. As such, the details and verisimilitude of particular conspiracy theories are less important than the richer truths represented therein, which often **contain self-identifying, existential, and moral meanings**, frequently involving power – both for the conspiracist and the perceived conspirators.

2. **Tribal conspiracism:** Many conspiracy theories harbour elements of other beliefs, dogmas, and ancient or preceding conspiracy theories long believed or held as core elements of political, religious, social, or tribal identity. As such, current conspiracy theories, like proxy truths, may serve as stand-ins for earlier ones having deep roots in history. This accounts for the cross-pollination of conspiracy theories and the propensity of people who believe in one to believe in many. An endorsement of these theories serves as a **social sign of loyalty to the tribe** that embraces them as a part of that group's identity.

3. **Constructive conspiracism.** The assumption by most researchers and commentators of conspiracy theories is that they represent false beliefs, which is why the term has become a pejorative descriptor. This is a mistake, because, historically speaking, enough of these theories represent actual conspiracies. Therefore, it pays to err on the side of belief, rather than disbelief, just in case. With a lot at stake, especially one's identity, livelihood, or even life – which was the case during the Palaeolithic environment in which we evolved our conspiratorial cognition – **it is often better to assume that a conspiracy theory is real when it is not (a false positive), instead of believing it is not real when it is (a false negative)**. The former just makes you paranoid, whereas the latter can make you dead."

The last point is one often brought up by adherents of conspiracy theories themselves. Why criticise conspiracy theorists, if actual conspiracies do happen? According to Karl Popper (Popper 1963), one the most famous theorists that have dealt with the subject of conspiracies, there is a fundamental misunderstanding here. It is not that conspiracies don't exist – they happen all the time. Governments, corporations, secret societies, even individuals all have hidden agendas that they try to put into action available, both fair and nefarious. But how often do these conspiracies manage to achieve all their aims? Conspiracies must compete with other conspiracies, unforeseen events, incompetence, stupidity, blind luck. It is one thing to claim that people conspire to achieve certain goals, and another thing altogether to look at results and try to interpret them as the outcome of someone's design.

Real conspiracies often involve single, self-contained events or an individual – elements that can be conceivably under the control of a group of people (European Commission 2020). These might include assassinations, covered operations, withholding crucial information from the public. Conspiracy theories, on the other hand, often focus on the world was a whole, society at large. Their main benefit appears to be to provide a logical explanation of events or situations which are difficult to understand, and thus bring a false sense of control and agency.

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Who is contributing to the spread of conspiracy theories?

While people do tend to produce conspiracy theories on their own, there are at least 2 factors which tend to intensify this process in our current time. One of these are the algorithms used by social media, which are described in more detail in another unit. The other one involves actors attempting to disrupt the societies of countries they perceive as hostile to themselves. The process goes at least back to the Cold war, as ex-KGB Major General Oleg Kalinin testifies (Abrams 2016, p.4):

"I would describe it as the heart and soul of Soviet Intelligence - subversion. Not intelligence collection, but subversion: active measures to weaken the West. To ***drive wedges*** *in the Western community alliances of all sorts, particularly NATO,* ***to sow discord*** *among allies, to weaken the United States in the eyes of the people of Europe, Asia, Africa, Latin America, and thus to prepare the ground in case the war really occurs. To make America* ***more vulnerable to the anger and distrust*** *of other peoples."*

While the KGB-era activities produced some effect, they were largely limited by the technology of their time and were brought to a complete stop in the 1990ies. With the coming to power of Vladimir Putin, the old Soviet measures were given a new spin, making use of media platforms such as Russia Today, internet sites, supporting politicians and thinkers on the fringe, and, of course, the infamous troll factories.

In the words of the EU East Stratcom Task Force (EUvsDisinfo):

"Foreign states, particularly Russia and China, have systematically used disinformation and information manipulation to sow division within our societies and to undermine our democracies, by eroding trust in the rule of law, elected institutions, democratic values and media. Disinformation as part of foreign information manipulation and interference poses a security threat affecting the safety of the European Union and its Member States."

Russia is not the only actor involved in the active promotion of conspiracy theories with the explicit aim of disrupting a set of societies (the 'collective West') perceived as a threat. Other state and non-state actors are also at play – both at the extreme left and right, as well as those driven by religious beliefs – but none on a scale so large and well-organised.

It is important to distinguish the facts – disinformation campaigns are not the cause of conspiratorial beliefs. People do form them on their own, without foreign interference. However, campaigns focused on eroding trust do make it increasingly more likely that more people will end up with strong beliefs about conspiracies.

What are the consequences of believing in conspiracy theories?

When considering the consequences of believing in conspiracy theories, a distinction must be made between the personal and societal level. On a personal level, conspiratorial beliefs lead a person to a deepened isolation from others, the so-called "rabbit hole". In the words of author Mick West (West 2018, p.12)):

"The phrase comes from Lewis Carroll's "Alice's Adventures in Wonderland". Alice enters the bizarre Wonderland by following a white rabbit down a hole.

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In recent times a more specific usage has arisen, derived from the 1999 film The Matrix, where at a crucial point Morpheus offers Neo a choice. He can either take the blue pill and return to a normal life, or take the red pill and "see how deep the rabbit hole goes."

Neo, of course, "takes the red pill," and the "rabbit hole" leads him to discover the true nature of the world. He "wakes up" from his programmed illusion of comfortable, bland monotony into a brutal yet genuine struggle for existence, a messianic battle against evil, manipulating overlords.

This terminology has been directly adopted by various conspiracy communities. The rabbit hole is seen as a good place to be, a place where the true nature of the world is revealed."

People who find themselves in the 'rabbit hole' are increasingly unable to communicate or act together with those on the surface. This leads to the adverse societal effects of these beliefs. The European Commission and UNESCO define 3 ways in which conspiracy theories can be dangerous (European Commission 2020):

1. *They **identify an enemy** and a secret plot that threatens peoples' lives or beliefs and spark a defence mechanism, which can fuel discrimination, justify hate crimes and can be exploited by violent extremist groups.*

2. *They spread **mistrust in public institutions**, which can lead to political apathy or radicalization.*

3. *They spread **mistrust in scientific and medical information**, which can have serious consequences.*

That means that a person who believes in conspiracy theories is less likely to be able to make sense of the world around them (for rejecting the scientific consensus), more likely to become isolated from other people (because of lack of trust), and, ultimately, more likely to act in a disruptive, even violent manner (in order to defend themselves from the perceived enemy).

What can be done?

Conspiratorial thinking is all about mistrust – distrust in authorities, in mainstream media, in what "most people" think. Any attempt to help people relinquish their conspiratorial beliefs must involve **building trust** (Critical Balance 2023, p.45). This means that one must be prepared to engage on open and respectful discussion with the conspiracy theorist, where both sides are allowed to make their claims and support them with evidence. People are unlikely to listen to prepared statements and factsheets, if they are not given a chance to express themselves and their beliefs. Building trust is not a quick process. It requires repeated interactions and a considerable degree of patience. Interaction allows for the **establishment of common ground** – it brings people together and makes information exchange possible (Critical Balance 2023, p.46).

Another useful step is **establishing the limits for belief** (Critical Balance 2023, p.47). There are all kinds of conspiracy theories – from mild to extreme ones. Very few people believe in all possible conspiracy theories. Even hard core conspiracists have limits to what they believe, and would consider certain, more extreme versions of their argument as unreasonable. Establishing where that limit lies can be

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useful in many ways. By demonstrating that some of the supporters of an argument go way too far, having a rational discussion becomes worth it.

Spotlight debunking is a technique that is intended for conspiracies based on a single fact (Critical Balance 2023, p.46). If that fact can be disproven, the whole building will crumble. In many cases conspiracy theorists are immune to a 'magic bullet' – a single fact that will make them reconsider their beliefs. They might subscribe to several theories, each of which based on several facts. In that case, the only solution is to address all of them (the so-called **floodlight debunking**) (Critical Balance 2023, p.47). Even if a single argument remains valid, they may retain their beliefs, which is much easier psychologically than changing them. The role of the teacher becomes one of a learning curator – gathering information, sharing it, and allowing the other side to make their own conclusions.

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Example of an Activity

- Objective: To develop the' ability to investigate and analyse conspiracy theories, using a variety of information sources, with a focus on practising research skills and enhancing critical thinking. The trainees should be able to construct convincing arguments and confront misleading claims, promoting a deeper understanding of the social and psychological dynamics involved in conspiracy theories.

Table 9 - Activity 7

Duration	Activities	Resources and materials:
(10 min)	Introduction: Present learners with the handouts containing different claims related to the Covid-19 pandemic - including the extra ones shared during the introduction if relevant. One claim per participant (or per pair, if you decide that working in cooperation would be more effective).	1 set of printouts of conspiracy claims
(1 hour)	Research and preparation of presentation: Learners get to research their own sources on the claim and explain to the group what they consider to be the truth on the matter. They can use any resources they wish. The result should be a short presentation aimed at their peers. 60 min.	A computer or laptop for each participant (or a pair of learners if there are more than 8)
(30 min)	Presentation: Learners present their findings to the group and other learners are encouraged to ask questions and to put the sources used in doubt.	Projector; Whiteboard
(10 min)	Debriefing: Learners can vote on which presentation they found more convincing, and why they think it was the most effective. They can share tips for discovering interesting resources and how to present them in an engaging fashion.	

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5. **MODULE III:** MECHANISMS OF DISINFORMATION

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5.1. Module III – Objectives

SUB-MODULE SUMMARY/ MAIN CONTENTS	This sub-module provides the theoretical foundations for understanding and managing cognitive biases and logical fallacies. It is divided into four sections: the first covers the definitions of these two concepts; the second presents a non-exhaustive list of the various types of cognitive biases and logical fallacies; the third explores the psychological mechanisms underlying these two broad concepts, and finally, the fourth section reviews how they influence our lives, both in the real world and the digital life.
LEARNING OUTCOMES OF THE SUB-MODULE	At the end of this sub-module, learners should be able to: ● Define the concepts cognitive bias and logical fallacy and exemplify how they affect human judgement and decision-making.

Cognitive bias

Cognitive bias refers to a systematic error in human decision-making due to personal attributes. For example, imagine someone who believes that a low-carb diet is the only way to lose weight. When this person searches for information, they will focus on opinions that confirm their beliefs, while ignoring scientific evidence. This is a kind of cognitive bias, specifically called *confirmation bias*, a cognitive error where we select information that confirms what we already believe. We will see later on all the different kinds of biases that exist. On the other hand, a **logical fallacy** is a flawed argument that leads to an unsupported conclusion (Oschinsky, 2021).
For instance, if a friend tells you, "We can either go to the pizzeria or stay home and be bored all evening." This is a false dilemma. It presents the situation as if there are only two choices, while in reality, there are many other options. These two concepts, cognitive bias and logical fallacies, are similar but not identical. Both pertain to faulty reasoning, but, while cognitive bias refers to a pre-existing, fixed pattern of thinking in the human mind, logical fallacies represent errors in reasoning that occur in the moment and can be disproven through logical analysis.

For example, let's imagine that Maria is shopping for a new car. She has heard from her friend Luca that brand X cars are terrible because Luca had a bad experience with one. Despite having researched and found several reviews suggesting that the brand X is good, Maria decides not to buy a car from the brand. Maria places greater weight on Luca's negative experience rather than on the positive data found online, as it aligns with her pre-existing belief that the brand X is a bad choice. There is an error in Maria's decision-making, *confirmation bias*, that leads her, through a logical fallacy, *hasty generalisation*, to the wrong conclusion that all brand X cars must be bad. Although connected to cognitive biases, logical fallacies do not have a one-to-one relationship with them. A bias can

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contribute to one or more logical fallacies, but not all fallacies derive from bias (Hidayat, 2021). Both concepts highlight the human tendency to process information in ways that are not entirely rational. Understanding these interconnected dynamics helps us recognise the limitations of our thinking and encourages us to engage in more critical reflection (Gigerenzer, 2018; Maynes, 2025). Only by consistently identifying and questioning such mechanisms can we be more aware of reality and more sympathetic towards people.

Types and examples of cognitive biases

There are over a hundred recognised cognitive biases, which evolve as the human brain adapts to different situations (Haselton, 2015). Here are a few examples:

- **Confirmation bias**: seeking evidence that confirms our beliefs while ignoring opposing information. This is common during political elections when individuals support their preferred candidate regardless of negative information.
- **Representativeness bias**: it occurs when we estimate the probability of an event based on its similarity to familiar situations. For example, seeing someone in a suit might lead us to assume they are a lawyer.
- **Wishful thinking bias**: our desires influence our judgement. For instance, even if only 10% of applicants are accepted for a job, we might believe we will be among that 10%.
- **Framing bias**: decisions are influenced by how options are presented. For example, a label saying "fat-free meat" is more appealing than "lean meat", even though both describe the same product.
- **Anchoring bias**: the tendency to rely on the first piece of information we receive. For example, when buying a computer, a discounted price may seem attractive, making us overlook other options.
- **Availability heuristic**: placing greater importance on easily accessible information. For instance, we might consider flying more dangerous than driving because plane accidents are more widely reported.
- **Baader-Meinhof phenomenon:** also known as frequency illusion; this occurs when new information seems to appear everywhere after it is brought to our attention. For example, if you learn about a rare car model for the first time and then start noticing it on the streets more often, you're experiencing the Baader-Meinhof bias.
- **Belief bias**: judging an argument by the plausibility of the conclusion rather than by the evidence supporting it. Person A: "All politicians are liars. John is a politician. Therefore, John must be a liar."
- **Affect heuristic**: letting emotions guide decisions, such as keeping an old car out of sentimentality despite needing a new one.
- **Halo effect**: allowing one positive trait to overshadow negative traits in others, such as assuming someone is a good employee because they are punctual (Nikolopoilou, 2013).

Examples of logical fallacies

Here are a few common logical fallacies and corresponding examples (Jin, Lalwani, Vaidhya, Shen, Ding, Lyu, Sachan, Mihalcea, Schölkopf, 2022):

- **Hasty generalisation fallacy**: making a claim based on insufficient evidence. Person A: "I met two rude French tourists in Italy. All French people must be rude."

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- **Red herring fallacy**: introducing irrelevant information to divert attention from the main argument. Journalist: "What do you have to say about the corruption scandal involving your office?" Politician: "Instead of focusing on that, we should be talking about the critical issue of climate change that affects us all."
- **Bandwagon fallacy**: basing a decision on the fact that many people agree with it. Person A: "You should really start doing Pilates to stay healthy; everyone I know is doing it now."
- **Straw man fallacy**: misrepresenting an opposing argument to make it easier to attack. Person A: "We should invest more in renewable energy." Person B: "So you think we should just shut down all oil companies and leave thousands of people jobless?"
- **Ad hominem fallacy**: attacking a person's character instead of their argument. Person A: "Why should we listen to your opinion on environmental policies? You don't even recycle!"
- **Anecdotal evidence fallacy**: using personal experience as proof instead of valid evidence. Person A: "I've never worn a seatbelt and I've never been hurt in a car accident. Seatbelts are unnecessary."
- **False dilemma**: presenting only two options when there are more. Person A: "Either we ban all cars to reduce pollution, or we do nothing and let the planet die."
- **Middle ground fallacy**: suggesting that the truth is always a compromise between two opposing positions. Person A: "Vaccines are safe and effective." Person B: "Vaccines are dangerous and should be banned." Person C: "The truth must be somewhere in the middle: maybe vaccines are only safe for some people."
- **Post hoc fallacy**: claiming that one event caused another simply because it happened afterward. Person A: "I wore my lucky socks and then I won the game. My lucky socks led me to victory."
- **Burden of proof fallacy**: shifting the burden of proof onto someone else to disprove a claim. Person A: "I believe in ghosts. Can you prove they don't exist?"

The science behind human brain

The concept of cognitive bias was first introduced in the 1970s by Amos Tversky and Daniel Kahneman, who studied how individuals make decisions under conditions of difficulty or uncertainty. Several factors contribute to our tendency towards cognitive bias (Cannito, 2017), the most significant of which are:

- **Heuristics**: the term heuristic comes from the Greek verb heurískein, meaning to find. Our minds use shortcuts to arrive at solutions that minimise mental effort. As the human brain has a limited capacity for storing information, we focus on available information when processing content and forming reasoning.
- **Emotions**: we perceive the same situation differently depending on whether it affects people, objects or values that matter to us.
- **Motivation**: our judgments are often influenced by our pre-existing beliefs. If we already believe something, we tend to draw conclusions aligned with our beliefs.
- **Age**: as we age, we tend to have less cognitive flexibility, making us more susceptible to cognitive biases.
- **Social influence**: individuals are inclined to act in ways that align with the majority's views to gain acceptance.

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Kahneman argues that human thinking works through two mental systems, system 1 and system 2, each with its own individual functions: system 1 works without voluntary control, while system 2 is responsible for more demanding mental activities that require significant focus. This description helps us explain the contradictions that emerge in an individual's decision-making. System 1 allows individuals to quickly perform automatic tasks; some of these activities are carried out so spontaneously because they come from longer practice. System 2 requires concentration. Both systems always interact with each other to minimise the effort: system 1 sends intuitions to system 2 which transforms these inputs into beliefs. However, system 1 is susceptible to systematic errors which it commits under specific conditions. Preventing cognitive biases requires great focus from system 2, which sometimes fails to even detect errors.

Moreover, constantly doubting the workings of system 1 would not be practical. The only way to solve it is to develop the ability to identify the situations where errors are common and the contexts where the consequences would be significant. For example, imagine you are typing a text on your computer. You do this every day, so you know how to open the necessary application, how to use the keyboard and how to put the letters together to form the text. This is a typical example of system 1: your actions are fast and automatic because you have memorised the steps through practice. Now, imagine that while you are typing, the computer suddenly freezes, and the screen goes dark. You cannot continue writing and need to figure out how to turn the screen back on. At that point, you need more effort to solve the issue and get back to what you were doing. This is where system 2 comes into play (Compare, 2023).

The study of logical fallacies, or flawed arguments that lead to unsupported conclusions, on the other hand, dates back to Aristotle's work “On Sophistical Refutations” in the 3rd century BC. In classical logic, logical fallacies are divided into two main types: fallacies of language and fallacies of thought. Fallacies of language arise from improper use of language, while fallacies of thought are logical errors that do not come from language itself. These fallacies can be further categorised as formal or material. A formal fallacy occurs when there is a structural error in reasoning, whereas a material fallacy arises when there is an error in the content of the argument (Yenisoy Şahin, 2016).

- **Fallacies of language**: these usually result from ambiguity or imprecision in expression, often caused by improper use of a language's semantic or grammatical features. Each language has its own specific types of fallacies of language. For example: in English, the phrase “I saw the man with the telescope” can lead to confusion; is the man holding the telescope or did the speaker use the telescope to see him? This kind of ambiguity leads to a fallacy of language.
- **Fallacies of thought**:
    - **Formal fallacies** -> they occur purely due to flaws in the argument’s structure. For example, in a syllogism, if the premises are structured as: "All birds can fly. Penguins are birds. Therefore, penguins can fly." This is a formal fallacy because the conclusion does not logically follow from the premises.
    - **Material fallacies** -> a material fallacy arises when the premises are insufficient or irrelevant to support the conclusion. This type of fallacy relates to the content rather than the form of the argument. For example: "Millions of people believe in astrology, so it must be true." This argument commits a material fallacy because the number of believers is irrelevant to the truth of astrology.

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How they affect our lives:

The previous examples demonstrate how logical fallacies, and cognitive biases deeply impact decision-making, limiting our ability to process new information, engage with others and manage anxiety in daily life. These effects are particularly evident in the way we interact with information online. For instance, in cyberspace, algorithms on social media and search engines reinforce *confirmation bias* by consistently presenting content that aligns with our pre-existing beliefs. This often leads to increased polarisation and resistance to considering alternative perspectives. Moreover, complex issues discussed online are frequently simplified or distorted to "win" arguments. Consider the case of a discussion on climate change: person A: "We should reduce carbon emissions." Person B: "so, you're saying we should stop using all electricity?" This exchange exemplifies the *straw man fallacy*, where an argument is misrepresented to make it easier to attack, a common tactic in digital debates.

In the digital age, these biases and fallacies are amplified by the volume of information and the design of platforms that prioritise engagement over accuracy. Digital platforms often favour content that provokes emotional reactions, making users more vulnerable to these cognitive distortions. However, the impact of cognitive biases extends beyond personal life, affecting entire groups and even states, potentially escalating into cognitive warfare (Trinchero, 2023). The rise of digital spaces has exacerbated the effects of cognitive warfare. In cyberspace, once information is spread, it quickly reaches a vast audience. Unlike past conflicts, cognitive warfare today lacks physical violence and can be initiated by anyone with access to digital platforms (Trinchero, 2018).

Various actors may engage in cognitive warfare, including states, non-state actors and private companies. States, more specifically intelligence agencies, often employ cognitive warfare as part of broader hybrid warfare or information warfare strategies to shape public opinion, destabilise adversaries or influence political outcomes. A notable example is Russia's use of disinformation campaigns during foreign elections and conflicts, such as the annexation of Crimea in 2014. These efforts aimed to weaken opponents by fostering confusion, distrust and polarisation. Non-state actors like terrorist organisations, political movements or extremist factions also utilise cognitive warfare to promote their agendas, often by spreading propaganda or misinformation to manipulate public perceptions and recruit followers. Private companies can be involved as well. Firms in marketing, social media or data analytics sometimes engage in cognitive warfare by manipulating consumer behaviour or influencing political campaigns. A key example is the Cambridge Analytica scandal, where social media data was harvested and used to create psychologically targeted political ads that shaped voter behaviour.

In conclusion, cognitive biases and fallacies, when amplified by the digital landscape, can have far-reaching consequences, making cognitive warfare a powerful and pervasive tool in modern conflicts. Addressing these challenges requires increased awareness and a critical approach to the information we consume online.

How cognitive bias and logical fallacies give benefits to propaganda and populistic discourse:

Cognitive biases and logical fallacies play a crucial role in the effectiveness of both propaganda and populistic discourse. These mental shortcuts and errors in reasoning allow propagandists and populist

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leaders to manipulate public opinion, often bypassing critical thinking. For teachers, understanding these mechanisms is essential for recognizing and countering such influences in everyday life.
In school settings, students and teachers alike can fall victim to these biases and fallacies, especially in an era where social media algorithms reinforce confirmation bias. Propaganda that appeals to these biases can influence students' understanding of complex issues, leading to polarised viewpoints and a lack of critical thinking.

- **Case Study**: In a politically charged classroom, students may form strong opinions based on biased social media content, leading to difficult classroom dynamics. Teachers need to be aware of these influences to guide students towards critical engagement with information.

Cognitive biases such as **confirmation bias** and the **availability heuristic** play pivotal roles in making propaganda effective. Confirmation bias, the tendency to seek out and favour information that aligns with one's preexisting beliefs, is a significant driver behind the success of populists on social media. Populist leaders and their supporters feed their audience content that affirms their fears, especially around issues like immigration, national security, and economic uncertainty.

Counteracting Biases and Fallacies

Teachers can foster critical thinking skills to help students recognise and counter cognitive biases and logical fallacies. Techniques include:

- **Media literacy**: Teaching students to critically evaluate sources of information, recognizing bias, and identifying logical fallacies in arguments.
- **Socratic questioning**: Encouraging students to ask deep, reflective questions about the information they consume.
- **Classroom discussions**: Facilitating open-ended discussions where multiple perspectives are considered, helping students move beyond binary thinking.

Effects on Education

One of the key implications for education is the way social media platforms promote simplistic and emotionally charged political content. Online environment often encourages users to share and believe in content that confirms their biases, rather than promoting critical thinking or fact-checking. In a school context, this can translate into a student body that is less willing to engage in thoughtful debate or consider multiple perspectives.
Teachers face a significant challenge in addressing this issue. To counteract the influence of populistic propaganda, schools must emphasise media literacy, teaching students how to identify biased sources and think critically about the information they consume. This is especially important in an era where populists leverage the unfiltered communication channels of social media to bypass traditional gatekeepers of information, such as academic institutions and established news outlets. Without strong media literacy skills, students are at risk of being swept up in the emotional rhetoric of populist movements, rather than forming their own informed opinions.
The effects of populism and propaganda on education and personal development are profound, particularly in the digital age, where social media amplifies divisive political rhetoric and distorts public discourse. The prominence of cognitive biases, such as confirmation bias, in online interactions reinforces polarised views and undermines critical thinking, a crucial skill for both personal growth and

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academic success. For teachers, the challenge is not only to foster critical thinking but also to create learning environments that help students navigate the complexities of modern political communication. By prioritising media literacy and encouraging open-minded discussion, teachers can help students develop the resilience needed to resist the influence of manipulative populistic narratives.

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Example of an Activity

- Objective: To foster critical reading skills for both digital and non-digital content.

Table 10 - Activity 8

Duration	Activities	Resources and materials:
(10 min)	Group Formation: Divide the class into small groups	
(50 min)	Group Work: Each group will collaborate to write a one-page text. The topics will be provided by the group leaders and the text should include elements that trigger cognitive biases and logical fallacies. Given the digital context, the text should be written in the form of an online post or article, either realistic or fictional.	Papers and pens
(15 min)	Exchange texts and analyse: After finishing, the groups will exchange texts and each group will analyse the text of another group, identifying any problematic points.	Papers with the activity
(30 min)	Discussion: Once the analysis is complete, there will be a group discussion to compare the identified issues with the actual elements present in the text. The discussion will be facilitated by 1 or 2 moderators, who will guide the conversation with the following questions: - What were your thoughts while reading the text? Does it provide all the necessary information to understand the topic? - What features should the text have but currently lacks? - How would you rewrite the text? As learners share the features they believe an informative text should include, the moderator	

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	will gather keywords. These keywords will eventually highlight the essential characteristics that people should look for to trust and share a text.	

Example of the text the group can write:

The Disrespect at the Paris 2024 Olympics: An Affront to Our Faith and Values!

As many of you witnessed, the so-called “celebration” at the opening ceremony of the Paris 2024 Olympics turned into nothing but a shameless display of anti-religious propaganda! The "Feast of Dionysus" scene, masked as entertainment, mocked the sacred values held dear by millions of believers across the world.

Why did the organisers choose a symbol of pagan rituals for such an important global event?

Why were the religious sensitivities of our communities ignored?

This was not just an oversight — it was a deliberate insult to our faith, to those of us who believe in upholding decency and respect for religion in public spaces. While they hide behind “artistic freedom,” we know this was an attack on traditional values, our values!

Our families deserve better than this disrespect!

Let’s be clear: the elites don’t care about our beliefs — they want to undermine our identity and erode the moral fabric of our society! This is more than an Olympic ceremony; it’s a strategic attempt to divide us and destroy our faith, bit by bit.

We must stand united and defend our faith and values against these cultural assaults!

Join me in calling out the hypocrisy and demanding an apology from the organizers of the Paris 2024 Olympics!

#FaithFirst #CulturalInvasion #StopTheDisrespect #Paris2024Fail

The text uses: emotional manipulation, exploiting cultural divides, framing and misinformation, call to action. “

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5.4. Sub-module - Populist discourse and Propaganda

SUB-MODULE SUMMARY/ MAIN CONTENTS

The sub-module explains propaganda and populism, showing how they manipulate public opinion. Propaganda spreads selective information to influence people emotionally, while populism simplifies issues with an "us vs. them" narrative.
Historical examples like Nazi Germany and World War I show how propaganda has shaped public perception. In education, propaganda hinders critical thinking and promotes one-sided views. The document stresses the need for media literacy and critical thinking to resist these influences.

LEARNING OUTCOMES OF THE SUB-MODULE

By the end of this sub-module, learners should be able to:

- Recognise the mechanisms of populistic discourse and propaganda.
- Reflect on their own cognitive biases in real-life situations.

Definition of propaganda and populistic discourse

There are numerous "official" definitions of **propaganda**; however, many of these definitions have subtle nuances. Propaganda can be defined as the deliberate spread of ideas, facts, or allegations to either advance one's cause or undermine an opposing cause. Propaganda is often presented in a selective manner to highlight certain facts and omit others that may offer a different perspective on a certain issue.
Propaganda can be categorised into three types: white, grey, and black.

- **White propaganda** is openly linked to its true source and typically conveys factual information, though it often presents these facts in a biased or selective way to influence the audience.
- **Grey propaganda** obscures the identity of its origin, leaving the source unidentified or unclear.
- **Black propaganda** deliberately misattributes the message to a false source and may involve spreading disinformation to deceive the audience, making them unaware they are being manipulated.

Propaganda is a pervasive force that seeks to shape people's perceptions, beliefs, and behaviours by manipulating information to evoke specific responses. It is often used to appeal to emotions rather than reason, making it a potent tool for influencing large groups of people. The challenge with propaganda is that it frequently disguises itself as objective truth, making it difficult for individuals to distinguish between factual information and emotional manipulation. This creates a scenario where people may support causes or beliefs without fully understanding the broader implications or motivations behind them.

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When propaganda is used to control or direct large populations, the impact becomes especially concerning. It has the power to fuel mass movements, sometimes leading to dangerous social or political outcomes. In such cases, propaganda not only influences individual beliefs but also turns groups into crowds that may act irrationally, often with devastating consequences. By creating an environment where emotional responses overshadow rational discourse, propaganda can distort reality and lead to actions that individuals, acting alone, might never consider. This emphasises the importance of being aware of the subtle ways in which information can be manipulated, as well as the need for critical thinking in navigating a world where propaganda is ever-present.

Populistic discourse is a communication style that is frequently employed by political figures or movements to appeal directly to the general population. This style is characterised by presenting oneself as the representative of "the people" in opposition to an elite or establishment. This discourse frequently simplifies complex issues, polarises social groups, and advocates for a "us versus them" narrative in which "the people' are depicted as virtuous and in opposition to corrupt elites or outsiders. It is a powerful tool in today's politics because it effectively taps into people's emotions, often using cognitive biases, logical fallacies, and propaganda to influence how people think and make decisions. One of the main ways this works is through cognitive biases like confirmation bias, where people tend to seek out information that supports what they already believe. This makes it easier for populist leaders to gain support by offering simple solutions to complicated issues. For instance, a populist leader might use emotional arguments to convince people that all their problems are caused by a corrupt elite, positioning themselves as the only person who can fix things. This kind of messaging often appeals to emotions and avoids deeper critical thinking, making people feel united against a common enemy.

Propaganda is critical in promoting populistic ideas because it uses the media to spread simple, emotional messages that support their views. In the digital age, social media boosts these messages through algorithms that favour sensational or divisive content, creating echo chambers where people rarely see different opinions. This weakens critical thinking and makes political discussions more polarised and reactive.

Over time, populistic rhetoric can erode trust in democratic institutions, portraying them as corrupt or disconnected from the public. It may lead to the rejection of experts, media, and checks on power, weakening democracy. While populism claims to empower the people, it often divides society and reduces informed decision-making.

History: Famous Examples

Propaganda and populistic discourse have been tools used throughout history by various political regimes, movements, and leaders to manipulate public opinion, influence the masses, and consolidate power. These techniques evolved as communication technologies advanced, from printed pamphlets to radio broadcasts and now social media. Understanding famous examples of propaganda and populism provides insight into how these mechanisms work, offering valuable lessons for today.

1. Nazi Germany (1933-1945)

One of the most infamous examples of propaganda in modern history is Nazi Germany under Adolf Hitler and Joseph Goebbels. Hitler, through his publication *Mein Kampf*, emphasised the power of propaganda to shape public perception. Goebbels, as the Minister of Propaganda, orchestrated a large-scale campaign using newspapers, films, radio, and public rallies to propagate Nazi ideology. Key

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themes included the superiority of the Aryan race, the demonization of Jews, and the promotion of Hitler as a messianic figure.

- **Media Use**: The *Volksempfänger* (people's radio) ensured that Nazi speeches and messages reached the general population. Films such as *Triumph of the Will* glorified Nazi rallies, using grandiose imagery to strengthen loyalty to the regime.

- **Effects**: This relentless propaganda helped consolidate Hitler's power, justified aggressive expansionism, and dehumanised enemies, particularly Jews, preparing the way for atrocities like the Holocaust.

2. World War I (1914-1918)

During World War I, propaganda became a central tool for governments to rally public support, recruit soldiers, and demonise the enemy. Both sides used posters, films, and news reports to glorify their own efforts while dehumanising the opposition.

- **British Atrocity Propaganda**: The British excelled in creating atrocity propaganda, such as the infamous Bryce Report, which detailed alleged German war crimes in Belgium, including accounts of rape, murder, and mutilation of civilians. Although some of the stories were exaggerated or fabricated, they effectively stirred public opinion in favour of the Allies and helped justify Britain's war efforts.

- **Effects**: This propaganda influenced American entry into the war, swaying public opinion towards the Allies and creating a perception of moral superiority over the Germans.

3. The American Revolution (1775-1783)

The American Revolution provides an early example of populistic discourse. Leaders like Thomas Paine and Patrick Henry used pamphlets and speeches to appeal to the common man's sense of injustice, rallying support for independence from Britain.

- **Thomas Paine's *Common Sense***: This pamphlet simplified the complex issues surrounding independence, framing the conflict as a fight against tyranny and appealing to the identity of colonists as free men oppressed by a distant monarchy.

- **Effects**: The use of identity-based appeals in these messages helped unite diverse colonial populations and solidified the movement for independence, emphasising the populistic element of "power to the people."

4. The Rise of Digital Propaganda (21st Century)

The digital age has ushered in new forms of populistic discourse and propaganda, particularly through social media platforms. Political campaigns and extremist groups have exploited cognitive biases and emotional appeals to sway public opinion.

- **Examples**: The 2016 U.S. presidential election saw the use of targeted ads, bots, and fake news on platforms like Facebook and Twitter to spread populist and nationalist messages. Similarly, populist rhetoric in Brexit campaigns used simplistic slogans such as "Take Back Control" to appeal to voters' fears and biases.

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Main impacts and effects:

The influence of propaganda and populistic discourse can be profound, affecting various aspects of society, including **education**. These communication methods frequently rely on emotive appeals, oversimplification of complex issues, and diverse rhetoric, all of which can have a specific impact on the personal development of students, teachers, and school life.

Polarisation and **division** are among the primary consequences of propaganda and populistic discourse. This is exemplified in schools by a „us vs. them" mentality, in which students, teachers, and even parents may assume opposing viewpoints based on political or ideological beliefs.

- **Example:** A populist government might push a curriculum that emphasises nationalism and loyalty to the state. This can cause tension among teachers, some of whom may support critical thinking and exploration of diverse viewpoints, while others may feel compelled to conform to the state-endorsed narrative. In such an environment, dialogue and constructive debate among students are discouraged, ultimately fostering division within the school community.

The suppression of critical thinking is another substantial consequence. Populistic discourse frequently emphasises emotional reasoning over logical, evidence-based reasoning, which serves to discourage individuals from challenging the dominant narratives. This results in a shift in the educational system, where schools prioritise rote learning and memorization over the cultivation of critical thinking skills among students. In such an environment, students are less likely to be instructed on the examination of alternative perspectives or the independent analysis of information.

- **Example:** A government might promote a single version of national history, downplaying controversial or uncomfortable aspects. As a result, students grow up with a one-sided view of historical events, hindering their ability to understand the complexities of the world around them.

Censorship and **self-censorship** are also prevalent in environments where propaganda is the dominant force. Teachers may begin to refrain from discussing sensitive or controversial subjects in schools due to concerns regarding potential consequences. The apprehension may be due to the potential for retaliation from the government, administrators, or parents.

- **Example:** Teachers might steer clear of discussing topics such as immigration, climate change, or political corruption, even if these are relevant to their students' education, because they worry about being criticised or even punished for challenging the prevailing narrative. Over time, this leads to a reduction in the quality of education, as teachers feel constrained and unable to provide a well-rounded view of important social and political issues.

The **manipulation of emotions**, particularly through fear-based messaging, is another consequence of populistic discourse. Populism frequently capitalises on the fuelling of concerns about the "other," including immigrants, minorities, and foreign influences. This can result in a rise in intolerance as well as an increase in anxiety and tension among students and teachers in schools.

- Example: A populist campaign might focus on fear mongering about immigrants, portraying them as a threat to national security or cultural identity. In response, students from immigrant backgrounds may face bullying, discrimination, or exclusion from their peers, creating an unwelcoming and hostile school environment. This undermines not only the personal

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development of the affected students but also the broader school community's ability to cultivate tolerance and inclusivity.

In summary, propaganda and populistic discourse have a strong impact, especially when it comes to shaping how people think and behave. This is particularly concerning in schools, where these influences can block the growth of critical thinking, fuel divisions, and limit open discussions. By pushing emotional manipulation and simplified messages, these strategies create an environment where questioning and exploration are discouraged while conformity is rewarded. As a result, students may struggle to tackle complex issues and instead rely on biased or incomplete information. To create schools that promote independent thinking, open conversations, and a better understanding of different perspectives, it's important for teachers, policymakers, and society to recognise and push back against these harmful forces. Doing so will help ensure that education empowers students rather than controls them.

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Example of an Activity

- Objective: Create and analyse propaganda to better understand how it manipulates public opinion and appeals to emotions. This hands-on, debate-oriented activity encourages critical thinking, creativity, and collaboration.

Table 11 - Activity 9

Duration	Activities	Resources and materials:
(10 min)	Group formation: Divide the class into small groups	
(10 min)	Introduction: 1. Teacher briefly reminds the concepts of propaganda and populistic discourse.	
(30 min)	Creating Your Own Propaganda: 1. Each team is tasked with creating a propaganda campaign to convince the public of one of the following: - "Save the Trees!" – A campaign to support environmental conservation. - "Technology is Evil!" – A movement against the use of technology in everyday life. - "Trust in the Leader!" – A campaign promoting a populist leader. Teams must create a propaganda poster or slogan that uses emotional appeals, exaggerations, or selective facts to persuade people. They should consider: -What emotions do they want to trigger (fear, pride, anger)? - Which facts or ideas will they emphasise? What will they leave out? - Will they show the source clearly or hide it?	Paper, markers, and art supplies (for creating posters)
(30 min)	Propaganda Pitch and Vote: 1. Presentation: Each group has 2 minutes to present their poster and explain how their propaganda works (what emotions it taps into, what facts are used/ignored, etc.).	Presentations

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	2. Audience Voting: After all teams have presented, the learners (audience) will vote on which propaganda was the most convincing. They'll vote based on: Emotional impact Clarity of message Creativity	
(20 min)	Debate and Discussion: Facilitate a discussion based on the following: -How did each team use emotions or exaggeration to persuade? - Why do these techniques work so well in real life? - How can we guard ourselves against such emotional manipulation? Optional: If time allows, ask the group to redesign one of the posters to be *less manipulative* and more focused on facts and balanced arguments. This will help highlight the difference between objective information and propaganda.	

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6.MODULE IV: HOW TO ENHANCE MEDIA AND INFORMATION LITERACY

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6.1. Module IV – Objectives

MODULE SUMMARY/ MAIN CONTENTS	This module aims to equip learners with the essential skills to critically evaluate and analyse media content and support their students to do the same. By understanding and applying critical thinking principles, analysing media messages, and developing data literacy, learners will be able to discern credible information, identify biases, and resist misinformation, as well as guide their students in doing so. Additionally, the module explores the impact of media on mental health and civic engagement, promoting digital well-being and fostering critical citizenship. Furthermore, the module introduces the concept of pre-bunking, which involves proactively addressing misinformation before it spreads. Learners will develop strategies to build their own and their students' immunity to misinformation, create effective pre-bunking content, and evaluate the impact of pre-bunking campaigns. Through this module, learners will become more informed and discerning consumers of media, capable of navigating the complex information landscape with confidence, as well as reliable guides for their students in enhancing media and information literacy.
TIMETABLE & SCHEDULE	(Effective division of the module activities/ didactic methodology/ Activities duration) Asynchronous – 2 hours • Content Synchronous session – 2 hours • Exercises
LEARNING OUTCOMES OF THE MODULE	By the end of this module, learners should be able to: • Comprehend information from various media products, including articles, data, statistical charts, headlines, and authors. • Critically reflect on the quality and reliability of different media products. • Understand and articulate how pre-bunking works to mitigate the spread of misinformation.

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In today's digital age, media and information are pervasive in our lives. Imagine a world where your students can:

- **Spot fake news** before it goes viral.
- **Analyse media messages** for hidden agendas.
- **Use data** to tell compelling stories.
- **Create engaging content** that informs and inspires.

This module is designed to equip the learners with the tools and strategies to make this a reality. By enhancing the teachers and the students' media literacy, they become more empowered to become critical thinkers, responsible citizens, and successful learners.

From social media to news outlets, students are constantly bombarded with messages that can be misleading, biased, or outright false. With a strong foundation in media literacy, the teachers can guide the students to:

- **Evaluate the credibility** of a source, its author, and publisher.
- **Identify biases** in the language and framing of different media.
- **Research a topic** from multiple sources to get a more balanced perspective.
- **Create a well-supported argument** based on credible evidence.

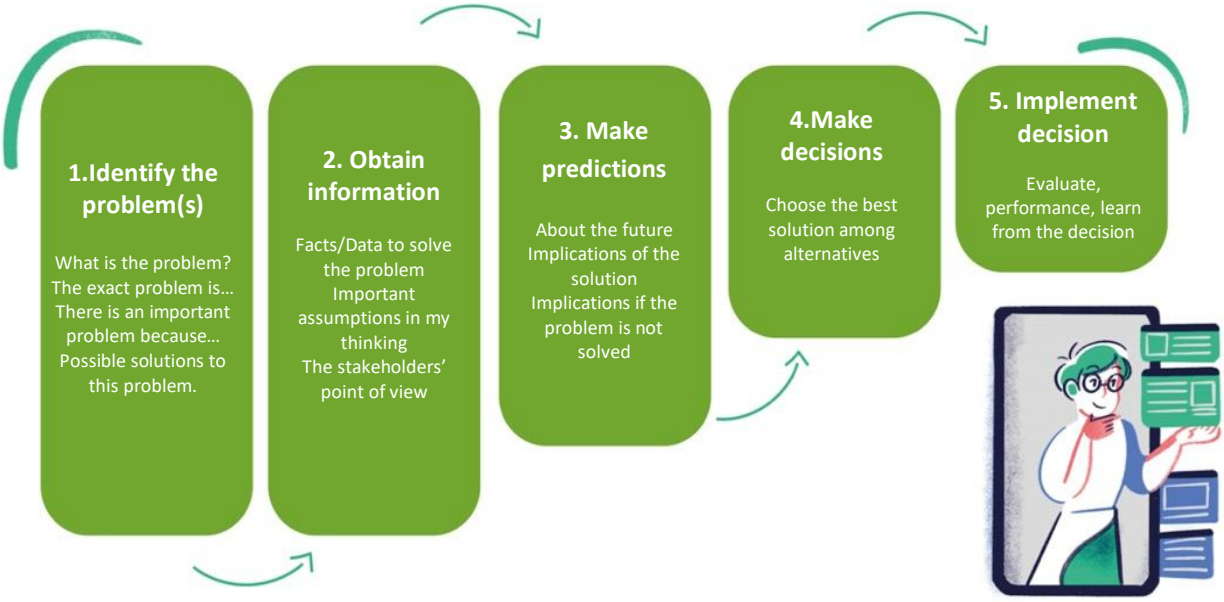
And in the future students will:

- **Become critical thinkers** who can evaluate information independently.
- **Develop a healthy scepticism** towards media messages.
- **Make informed decisions** in their personal and academic lives.
- **Contribute meaningfully to society** as informed and engaged citizens.

Developing strong media literacy skills is essential both for teachers and students to navigate this complex landscape and become informed, critical thinkers and contribute positively to society.

By developing such skills, they will be able to:

- Comprehend the information from different media products (articles, data, statistical charts, headlines, author)
- Critically reflect on media products, evaluating their credibility, identifying biases and detecting misinformation
- Be aware of how pre-bunking works and develop strategies to build immunity



6.3. Sub – module - Critical thinking & Data Analysis in Media and Information Literacy

SUB-MODULE SUMMARY/ MAIN CONTENTS	In this submodule, critical thinking will be explored as an essential skill for the objective and rational analysis of information. It will begin with an introduction to the concept of critical thinking, discussing its role in solving complex problems and making informed decisions in both professional and personal contexts. This will be followed by an examination of the key characteristics of critical thinking, including analytical thinking, open-mindedness, problem-solving, reasoned judgement, reflection, effective communication, research, and decision-making abilities.
LEARNING OUTCOMES OF THE SUB-MODULE	At the end of this sub-module, learners should be able to: • critically analyse and comprehend information presented across various media formats, including articles, data sets, statistical charts, headlines, and author perspectives

Critical thinking

Critical thinking is a cornerstone cognitive skill that allows you to analyse information objectively and rationally. It goes beyond surface-level understanding, encouraging individuals to question assumptions, explore different perspectives, and draw informed conclusions (Baker, 2023).
Critical thinkers are more than just curious; they connect logical ideas to understand the big picture. Building critical thinking skills enables you to effectively advocate for your ideas, present them logically, and make decisions that lead to improvement (Coursera, 2023). This skill is highly valued in various areas, including education, business, and personal life.

A **skilled critical thinker** (Foundation for Critical Thinking, 2019):

- Poses important questions and clearly defines problems.
- Gathers and analyses relevant information, using abstract ideas to interpret it effectively.
- Develops well-reasoned conclusions and solutions, testing them against relevant criteria.
- Consider alternative perspectives, recognizing their assumptions, implications, and practical consequences.
- Communicates effectively with others to solve complex problems.

The main common characteristics of critical thinking are (Martins, 2024):
Analytical thinking involves examining data from various sources to draw the most accurate conclusions. By being aware of cognitive biases and resisting them, while focusing on gathering and analysing intricate information, analytical thinkers can effectively solve complex problems. Those who excel at analytical thinking can:

- Spot patterns and trends in data.
- Break down complex issues into smaller, manageable parts.
- Identify the relationships between actions and their consequences.
- Assess the persuasiveness of arguments and the quality of the supporting evidence.

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Open-mindedness is the ability to embrace new ideas, arguments, and information objectively. This skill helps you analyse and process information with no prejudice, leading to impartial conclusions. To think critically, it's important to set aside personal biases, take information at face value, and consider multiple viewpoints. Those who excel at open-mindedness can:

- Easily think of alternative perspectives.
- Wait for more information before forming an opinion.
- Be more open to receive helpful feedback (positive or negative) and suggestions.
- Adjust to new beliefs and positions based on new information

Effective problem-solving is a key component of critical thinking. It involves identifying issues, brainstorming solutions, evaluating options, and choosing the best course of action. This skill is especially valuable in areas like project management and entrepreneurship. Those who excel at problem solving can:

- Clearly define the problem.
- Bring together relevant data and information.
- Think of possible solutions.
- Assess the benefits and drawbacks of each option.
- Implement and track the results of the selected solution.
- Reflect, evaluate and adjust the outcome.

Reasoned judgement

Reasoned judgement is a fundamental component of higher-order thinking, comprising making well-thought decisions built on logical analysis of evidence and careful evaluation of possible solutions. This skill is valuable in both educational and professional environments. Those who excel at reasoned judgement can:

- Gather, evaluate and analyse information without any bias.
- Assess the relevance and credibility of the gathered data.
- Think of various alternatives and viewpoints before coming up to conclusions.
- Make decisions based on well-constructed reasoning and logical assumptions.

Reflective thinking

Reflective thinking is the method to examine one's own thoughts, behaviours, and outcomes to have a better understanding and enhance future performance. Effective critical thinking entails analysing and combining data and information to formulate a clearer understanding of a problem. This skill is valuable for continuous improvement and life-long learning. Those who excel at reflective thinking can:

- Critically scrutinise their own assumptions and examine their cognitive biases.
- Think of alternatives and take into consideration different viewpoints.
- Gather and combine information from different sources.
- Gather and apply feedback to optimise future actions and decision-making.
- Constantly assess and adjust their thinking process.

Communication

Effective communication skills enable critical thinkers to express their ideas precisely and convincingly. Communication is essential for successful teamwork, leadership and knowledge exchange in any working environment, including school classes. Those who excel at communication can:

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- Explain hard-to-understand ideas in a clear and straightforward manner.
- Listen attentively in a conversation and understand the message being conveyed.
- Use different communication styles based on the targeted audience.
- Build and demonstrate convincing arguments.

Research

Skilled critical thinkers with increased research skills are those who collect, assess and combine information from different sources. This skill is valuable in educational environments and professional settings that demand ongoing learning. Those who excel at research skills can:

- Find trustworthy and pertinent information sources
- Assess preconceptions of a source and its credibility
- Combining information from different sources
- Identifying gaps in current knowledge

Decision-making

Constructive decision-making is the result of different critical thinking skills enabling individuals to come up to logical conclusions and conceptions. This comprises evaluating options, considering all anticipated consequences and selecting the best possible solution. Those who excel at decision-making can:

- Define precise evaluation criteria
- Gather and examine relevant data
- Review and reflect on possible short-term and long-term outcomes
- Handle potential risks and uncertainties
- Match up logic and beliefs

The Role of Critical Thinking in Media and Information Literacy

Critical thinking is widely regarded as a fundamental aspect of media and information literacy (MIL) (Andersson, 2021). On the other hand, MIL is a crucial factor contributing to the development of knowledge for critical thinking, as well as independent learning and good governance (Singh, Kerr, & Hamburger, 2016).

However, according to Boyd, critical thinking is as much of the problem as of a solution (Boyd, 2017). One approach to understanding this uncertainty of critical thinking is to acknowledge its gnostic* aspect and tackle the restrictions of this viewpoint (Andersson, 2021).

Critical thinking is essential to media literacy, empowering individuals to (Outsource Decisions, 2024):

- **Evaluate the credibility of information sources:** Critical thinking allows people to assess the reliability and objectivity of news articles, websites, and other media content.
- **Identify biases and propaganda:** By critically analysing media messages, individuals can recognise biases, propaganda techniques, and manipulative tactics used to influence public opinion.
- **Distinguish between fact and opinion:** Critical thinkers can separate objective information from subjective opinions and personal beliefs.

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- **Make informed decisions:** Critical thinking enables individuals to analyse information from multiple perspectives, evaluate evidence, and make informed judgments based on facts rather than emotions.
- **Resist misinformation:** Critical thinking can help in identifying and debunking false or misleading information, protecting ourselves from being manipulated or misled.
- **Become active and engaged citizens:** Critical thinking empowers people to participate meaningfully in democratic societies by making informed decisions, engaging in critical dialogue, and advocating for social change.

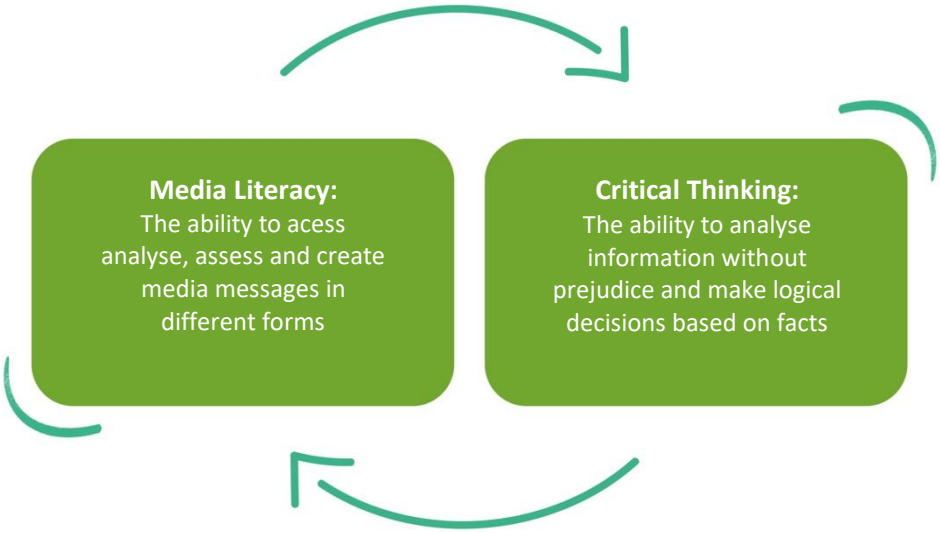

Figure 7 - Definition of Media Literacy and Critical Thinking

Identifying different media types and analysing media messages

- **Print Media**

Print media refers to the media that use paper or other materials as the medium for printing and displaying information or content. Some examples of print media are newspapers, magazines, books, flyers, brochures, etc. Print media is one of the oldest and most traditional forms of media and has the advantages of durability, credibility, and accessibility. Print media is important for providing information, education, and entertainment to the readers and for influencing their opinions and behaviours.

- **Electronic media**

Electronic media refers to the media that use electronic devices and signals as the medium for transmitting and receiving information or content. Some examples of electronic media are radio, television, cinema, etc. Electronic media is one of the most popular and widespread forms of media and has the advantages of speed, diversity, and interactivity. Electronic media is important for providing information, education, and entertainment to the listeners and viewers and for creating a global media culture.

- **Digital media**

Digital media refers to the media that use digital technology and networks as the medium for creating, storing, accessing, and sharing information or content. Some examples of digital media are internet,

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social media, mobile phones, etc. Digital media is one of the most recent and advanced forms of media and has the advantages of connectivity, personalization, and participation. Digital media is important for providing information, education, and entertainment to the users and for empowering them as producers and consumers of media.
(source: https://jgu.edu.in/blog/2024/02/22/what-are-the-different-types-of-media/)

Traditional Media

- Print Media: Newspapers, magazines, and journals have long been primary sources of information. While they have been criticised for their potential biases, traditional print media often adheres to journalistic standards that lend credibility to their reporting.

- Broadcast Media: Television and radio have played a significant role in disseminating information to the masses. Despite the rise of new media, many people still rely on broadcast media for news updates, entertainment, and educational content.

Social Media

- Social media: Platforms like Facebook, Twitter, Instagram, and TikTok have transformed how information is shared and consumed. Social media allows users to engage with content and contribute their own perspectives. However, the immediacy of social media can lead to the rapid spread of misinformation.

- Websites and Blogs: The internet has made it possible for anyone to publish content, which has both democratised information and complicated the landscape. While many blogs offer insightful commentary and expertise, others may spread false information or lack journalistic integrity.

- Podcasts and Webinars: Increasingly popular, podcasts and webinars provide in-depth discussions, interviews, and educational content. They democratize knowledge and allow for diverse voices and perspectives, although their credibility can vary widely.

- Streaming Services: Platforms like Netflix, Hulu, and YouTube have fundamentally changed how we consume television and film. They provide a diverse array of content but also challenge traditional media consumption patterns.

In media literacy, **ANALYSING** media content is the process of asking questions about a piece of media in order to identify authorship, credibility, purpose, technique, context, and economics. This includes (but is not limited to):

- Understanding who created a piece of media/information by identifying:
- The author(s),
- Whether the author(s) are credible/knowledgeable about the topic,
- What their intent might be by creating this piece of media–what they want people to think, know, or do in response to this media,
- What biases the author(s) has and how that bias is reflected in the content they created.

Understanding how the media is constructed by identifying:

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- Techniques used to gain/keep attention,
- Techniques used to make one think/feel a certain way,
- Examining the language of the content,
- Identifying how economics might impact the decisions made when creating a piece of media.
- Examine the content by:
- Fact checking the information across multiple sources,
- Looking for evidence-based information,
- Identifying issues of representation.

Key Questions to ask when ANALYSING media messages:

The following table can help in the reflection in any type of media and filter critically the information received:

Table 12 - Key questions to ask when analysing media messages

AUTHORSHIP	Who made this?
PURPOSES	Why was this made? Who is their target audience? What do they want me to do? What do they want me to think (or think about)?
CONTENT	What are the messages about ? What ideas, values, and information are overt? Implied? What is left out that might be important to know? How does this compare/contrast to other media messages on this topic?
TECHNIQUES	What techniques are used to communicate the messages? How effective are those techniques? What are them strengths and weaknesses? Why might they have chosen to use those techniques?
CONTEXT	When was this created? Where and how was it shared with the public? What aspects of cultural context are relevant to consider? How does this amplify or counteract existing patterns (on the topic, by the author, etc.)? How does the media form (social media, print,TV, etc.) impact the message?
ECONOMICS	Who paid for this? Who might make money from this?
CREDIBILITY	Is this fact, opinion, or something else? How credible is the information? What are the sources of the ideas or assertions? Is this a trustworthy source about this particular topic?
EFFECTS	Who might benefit from this message? Who might be harmed by it? Whose voices are represented or privileged? Whose voices are omitted or silenced?

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INTERPRETATIONS	What is my interpretation of this? How do prior experiences and beliefs shape my interpretation? What do I learn about myself from my interpretation or reaction? How (and why) might different people interpret this differently?
RESPONSES	How does this make me feel? What kinds of actions might I take in response to this?

(source: https://projectlooksharp.org/Resources%202/Project%20Look%20Sharp%20Key%20Questions%20Both.pdf)

Understanding Information Evaluation

Information evaluation is the systematic process of critically assessing the information we come across. In an age where information is abundant and often overwhelming, evaluating the quality of this information is crucial, especially when that information influences important decisions.

To effectively evaluate information, we can typically look at three key aspects, which teachers should support students to also look at (University of California, 2024):

- *Credibility*: Is the source trustworthy? Does it have authority or expertise in the subject matter?
- *Reliability*: Is the information consistent with other credible sources? Is it presented in a clear, logical, and unbiased manner?
- *Validity*: Is the information supported by evidence? Are the claims made substantiated by data, research, or verifiable facts?

The teachers need not only be aware of the categories of information in terms of validity listed below, but they need to support the students' learning how to decide which category information can fall into through the process of information evaluation (Canadian Centre for Cyber Security, 2024):

- **Valid Information**: correct, complete, and based on verifiable data. It presents a true reflection of the facts. For example, a peer-reviewed scientific article that provides evidence-based conclusions about comprehension processes used by competent readers. The article is supported by a large amount of data and has been reviewed by experts in the field.
- **Inaccurate Information**: either incomplete or manipulated in a way that distorts the truth. It may contain some elements of truth but is misleading overall. For example, a news report that selectively presents statistics on school participation, focusing only on enrolment to exaggerate a narrative that participation is on the rise, when overall factual participation may be decreasing due to non-attendance.
- **False Information**: outright incorrect. It is not supported by any verifiable data and the available evidence disproves it. For example, a viral social media post claiming that a specific type of approach to teaching reading improves students' reading performance, although existing scientific evidence proves that this type of approach in fact leads to poorer reading performance. Reading researchers have since repeatedly debunked this information.
- **Unsustainable Information**: cannot be conclusively confirmed or disproven with the current available data. It sits in a grey area where further investigation is required to determine its validity. For example, a report suggesting a correlation between a specific environmental factor and an increase in a certain disease. However, the data available is insufficient to confirm a causal relationship, and more research is needed to draw definitive conclusions.

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Distinguishing fact from opinion

One of the crucial skills students can develop is the ability to distinguish between facts and opinions. This skill is foundational to critical thinking and effective information processing, enabling students to navigate a world filled with diverse viewpoints, media messages, and arguments.
At their core, both facts and opinions are types of statements that communicate ideas or information. However, the key to differentiating them lies in their nature and the role they play in communication and argumentation.
Facts are statements that are objective and verifiable. They describe the world as it is, and their truth can be confirmed through evidence such as observation, measurement, or reliable documentation. Facts are universally accepted and do not depend on personal feelings or beliefs. For example, the statement "Water boils at 100 degrees Celsius at sea level" is a fact because it can be consistently observed and verified through scientific testing.
Opinions, on the other hand, are subjective statements that reflect personal beliefs, feelings, or interpretations. Opinions are inherently tied to individual perspectives and can vary greatly between people. Unlike facts, opinions cannot be universally proven true or false; instead, they can be debated, supported, or challenged. For example, the statement "Classical music is the best genre of music" is an opinion because it reflects a personal preference that others may not share.

The are a few key differences between facts and opinions, as shown in the table below:

Table 13 - Differences between facts and opinions

Criterion	Fact	Opinion
Objectivity vs. subjectivity	objective, independent of personal beliefs or feelings; it stands on its own and remains true regardless of who observes or reports it	subjective, influenced by individual experiences, emotions, and perspectives; can vary widely among different people
	e.g. The Earth orbits the Sun.	e.g. Winter is the most enjoyable season.
Verifiability	can be verified through empirical evidence, testing, or reliable sources; can be proven *true* or *false*	cannot be verified through empirical evidence, testing, or reliable sources because they are based on personal interpretation or belief; can be *supported by facts*, but they are not verifiable themselves
	e.g. The capital of France is Paris.	e.g. Paris is the most beautiful city in the world.
Dependence on evidence	stands independently of supporting evidence, though evidence can be provided to demonstrate its truth	needs to be supported by facts or evidence to be persuasive; while an opinion can be informed and well-supported, it remains *an interpretation* or *judgement* rather than an indisputable truth
	e.g. Water is made up of hydrogen and oxygen atoms.	e.g. In my opinion, drinking water from natural springs is healthier than tap water. (This opinion could be supported with facts about water purity, but it remains an opinion.)

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What is Data Literacy?

Data literacy is an essential skill in today's data-driven world. Just as we learned to use computers and the internet, understanding data is now crucial. We're surrounded by data and knowing how to interact with it—what it can and cannot do—is essential.

As we encounter vast amounts of information, we often need to distil complex data into valuable insights. A data-literate person grasps how data can be combined and connected to create value. Critical thinking about data involves understanding its relevance, placing it in context, and recognizing its potential and limitations.

Data literacy empowers people to ask the right questions about data and choose the appropriate tools for **reading, understanding, interpreting, and communicating data** (or **reading, writing, analysing, communicating, and reasoning with data**). It helps people gain actionable insights and drive change.

The DALI Data Literacy Framework, developed by the EU partners within the DaLi project, describes the competences that characterise a data literate citizen.

Data literacy is about the competences people need to engage with and use the data encountered in everyday life. It implies finding ways to make data informed decisions both in everyday life and in various contexts, according to personal or collective goals.

Data literacy includes understanding what data is and having an awareness and attitude towards non-neutrality/biased data (collection, etc.). It implies having the skills to collect, select, store, preserve and manage data; analyse, evaluate, interpret, critique, apply, use, and work with data; and represent, visualise, and communicate stories from data. It also encompasses having the competence to ask and answer questions from data sets through an inquiry process.

Furthermore, Data literacy means having the knowledge to critically make judgements and interrogate the claims accompanying data, including ethical and legal aspects that affect ones and other people's rights. It also includes the ability to use data as part of a design process, to solve problems, and to take decisions.

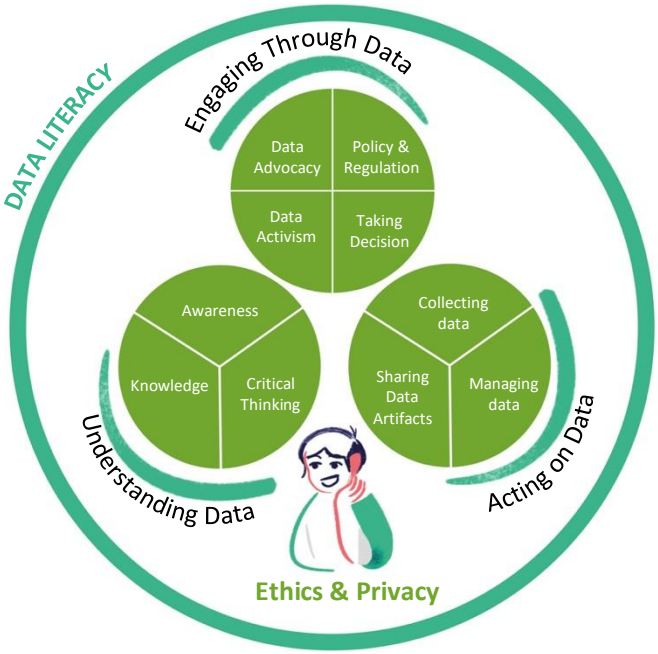

Figure 8 - What is Data Literacy?

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Everyone should become data literate.

Everyone should teach kids how to be data literate and ask important questions about the data and the world around them.

In the past, you could say seeing is believing.

But with deepfakes and AI-powered misinformation, we can no longer say that.

If you're not asking the right questions about the data and the technologies we see, you could be doing yourself and future generations a disservice.

Anjali Samani, Director of Data Science & Decision Intelligence at Salesforce
https://www.datacamp.com/blog/what-is-data-literacy-a-comprehensive-guide-for-organizations

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What is the relationship between data literacy and critical thinking?

Data literacy and critical thinking are closely intertwined and mutually reinforcing skills. Here's how they relate:

3. **Data Interpretation**: Data literacy involves the ability to read, understand, and interpret data. Critical thinking enhances this by enabling individuals to question the validity, source, and context of the data, ensuring a more accurate interpretation[1].
4. **Decision Making**: With data literacy, individuals can gather and analyse data. Critical thinking allows them to evaluate this data critically, considering various perspectives and potential biases, leading to more informed and rational decisions.
5. **Problem Solving**: Data literacy provides the tools to identify and collect relevant data. Critical thinking helps in analysing this data to identify patterns, draw conclusions, and solve problems effectively[2].
6. **Communication**: Data literacy includes the ability to communicate data findings clearly. Critical thinking ensures that these communications are logical, coherent, and persuasive, making it easier to convey complex data insights to others.

In essence, data literacy equips you with the skills to handle data, while critical thinking ensures you use these skills wisely and effectively. Together, they form a powerful combination for navigating the information-rich world we live in today.

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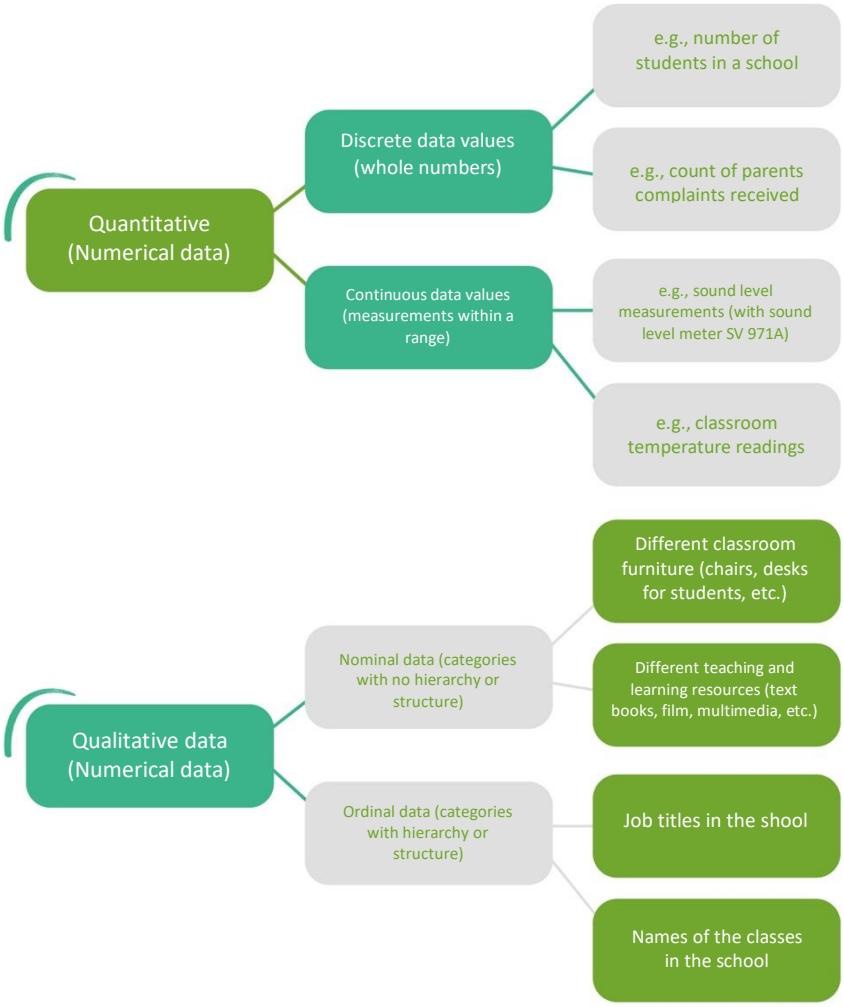
Data Types: Understand different data types

There are **two main types of data**:

- **Quantitative** (numerical) data: numerical data that can be measured and analysed statistically.
- **Qualitative** (categorical) data: descriptive data that provides insights into behaviours, opinions, and experiences.



Both types of data have subcategories. The subcategories of the quantitative data are discrete data values (whole numbers) and continuous data values (values fall anywhere within a range). Qualitative data can be further broken down in two subcategories: nominal data (categories or named data with **no** hierarchy or structure) and ordinal data (there is a specific order, a hierarchy or a structure).
Data can come from **various sources**, broadly categorised into:

- **Primary Sources**: Data collected firsthand for a specific research purpose. Examples include surveys, interviews, and experiments.
- **Secondary Sources**: Data that has already been collected and published by others. Examples include books, articles, reports, and databases.

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Data collection methods

Data collection methods include a range of techniques and tools used to gather both quantitative and qualitative data. These methods are essential for ensuring accurate and comprehensive data acquisition.

Quantitative data collection methods use systematic approaches, such as:

- numerical data
- surveys and polls
- statistical analysis
- to quantify phenomena and trends.

On the other hand, qualitative data collection methods focus on capturing non-numerical information through:

- Interviews
- focus groups
- observations

These methods aim to gain a deeper understanding of attitudes, behaviours, and motivations.

Here are some examples of data collection methods used in the educational sector, particularly in schools:

Quantitative Data Collection

- Standardised Test Scores: These are used to measure student performance across various subjects and grade levels.
- Attendance Records: Tracking student attendance to identify patterns and address absenteeism.
- Graduation Rates: Monitoring the percentage of students who complete their education within a specified time frame.
- Surveys and Polls: Collecting numerical data on student satisfaction, engagement, and other metrics.

Qualitative Data Collection

- Interviews: Conducting one-on-one or group interviews with students, teachers, and parents to gather in-depth insights.
- Observations: Teachers or researchers observing classroom interactions and behaviours to understand the learning environment.
- Focus Groups: Facilitating discussions among students or teachers to explore attitudes and experiences in more detail.
- Reflective Journals: Teachers and students maintaining journals to document their thoughts, experiences, and reflections on the learning process.

These methods help schools gather comprehensive data to improve educational outcomes and tailor interventions to meet the needs of students and teachers.

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Example of an Activity

Note: The resources available on the Teaching with Gapminder page (https://www.gapminder.org/teaching/)

- Objective: Learn how to use Gapminder to model data, analyse and synthesise findings, and effectively communicate results through visual presentations. This activity will help teachers develop skills in data analysis and visualisation, which they can then pass on to their students. It also promotes collaboration and critical thinking, essential skills for both teachers and students.

Table 14 - Activity 10

Duration	Activities	Resources and materials:
(10 min)	Introduction: Briefly introduce Gapminder and its purpose in visualising global data. Explain the importance of data literacy and how it can be applied in the classroom.	
(15 min)	Divide learners into small groups. Each group brainstorms questions related to the Sustainable Development Goals (or other relevant topics). Encourage groups to think of at least three questions they want to explore using Gapminder.	
(20 min)	Exploring Gapminder: Demonstrate how to use Gapminder tools to find and visualise data. Each group selects three questions from their brainstormed list to explore. Groups use Gapminder to create visualisations (e.g., bubble charts, line graphs) that help answer their questions.	Computers with internet access; Access to Gapminder tools (Gapminder)
(20 min)	Data Analysis and Synthesis: 1. Groups analyse the visualisations they created. 2. Discuss what the data shows and how it answers their questions. 3. Synthesise the findings into key points.	
	Poster Creation: Each group creates a poster that includes: -The questions they explored.	

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(30 min)	-The visualisations they created using Gapminder. - A short explanation of how the visualisations answer their questions. Encourage creativity and clarity in presenting their findings.	Poster-making supplies (paper, markers, etc.)
(20 min)	Poster Presentation: 1. Groups present their posters to their colleagues. 2. Each group explains their questions, visualisations, and findings. 3. Allow time for questions and feedback from other groups.	Projector for presentations
(15 min)	Reflection and Discussion: 1. Facilitate a discussion on the use of data visualisation in teaching. 2. Reflect on the process and how it can be applied in the classroom. 3. Discuss any challenges faced and how they were overcome.	
(10 min)	Conclusion: Summarise the key takeaways from the activity. Emphasise the importance of data literacy and critical thinking. Encourage teachers to integrate similar activities into their own teaching practices.	

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6.4. Sub-module – How pre-bunking works

SUB-MODULE SUMMARY/ MAIN CONTENTS	In this submodule, the learners will explore the impact of misinformation and gain strategies to promote media literacy in their classrooms. The training begins with an understanding of the threats that "information disorder" poses to students, especially with the proliferation of fake news and online platforms that often obscure information sources. Prebunking, nudging, and debunking strategies will be presented to equip teachers with tools to help students recognise and resist false information before encountering it, as well as to question and correct misinformation. The prebunking approach will be highlighted for its usefulness in educational settings, including factual, logic-based, and source-analysis techniques that enable students to identify and resist misinformation narratives. Teachers will also learn how to apply these strategies to help students develop cognitive resilience, improving their ability to critically assess information and make informed decisions
LEARNING OUTCOMES OF THE SUB-MODULE	By the end of this sub-module, learners should be able to: ● critically evaluate and reflect on media products, considering factors such as bias, intent, and the broader context in which the content is produced and consumed. ● understand the concept of pre-bunking and recognise its strategies.

In today's digital landscape, the proliferation of fake news, disinformation, misinformation, and misinformation presents significant challenges. The rapid dissemination of information and the overwhelming number of online sources contribute to a phenomenon known as "information disorder." This disorder particularly affects younger generations, who may quickly assess the news and rely on information from sources that are not always reliable (European Union, 2023). Online communities, which have become a primary news source for many in Generation Z, are also key channels for spreading misinformation. Social media platforms, blogs, forums, and content-sharing sites like video and photo platforms can easily obscure the origins of information, making them potential echo chambers where false narratives can rapidly circulate.

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The Concept of Pre-bunking: Explaining the pre-bunking approach, contrasting it with debunking

Understanding the effects of misinformation without overestimating its influence is crucial. When spread through coordinated disinformation campaigns, misinformation can shape beliefs, influence actions, and disrupt political and societal discourse (European Union, 2023). Behavioural science offers several strategies to mitigate misinformation (Van der Linden, 2023). These strategies fall into three categories: prebunking, nudging, and debunking, based on the stage of misinformation exposure.

- **Prebunking**, or psychological inoculation, equips individuals with the skills to recognise and resist misinformation before they encounter it. Like a vaccine, prebunking introduces weakened versions of misleading information to build cognitive resilience (Matthes et al., 2023). Gamified approaches are also used to enhance this resilience (Lewandowsky & Van Der Linden, 2021). Prebunking refers to the proactive strategy of addressing false information before it has the opportunity to spread widely or before individuals are exposed to it (Lewandowsky & Van Der Linden, 2021). The goal of prebunking is to build "cognitive immunity" against misinformation in general, equipping individuals to critically evaluate information and reducing their susceptibility to being misled. In this way, prebunking serves as a preventative measure, contrasting with debunking, which is reactive and focuses on correcting misinformation that has already circulated. While debunking is typically associated with a single intervention, such as fact-checking, prebunking encompasses a broader set of interventions. Some approaches enhance individuals' motivation to remain vigilant against misinformation, while others strengthen their ability to successfully engage in such vigilance.
- **Nudging**, on the other hand, involves subtly altering the environment in which people make decisions, encouraging them to question the accuracy of the information they encounter. Nudges can include reminders to verify the credibility of news before sharing it, known as "accuracy nudges" (Pennycook & Rand, 2022).
- **Debunking**—fact-checking and refuting false claims—occurs after misinformation has been encountered and aims to correct inaccuracies (Lewandowsky et al., 2020).

Among these strategies, **prebunking stands out as an effective and scalable intervention**. It is particularly accessible for journalists, fact-checkers, and policymakers, as it can be implemented quickly and at a low cost. A strong prebunk engages with the audience's concerns, draws from their lived experiences, and encourages them to share what they've learned, fostering trust.

There are **three primary types of prebunking**:

- fact-based, which addresses specific false claims;
- logic-based, which explains the tactics used to manipulate information;
- and source-based, which highlights unreliable sources.

The logic-based approach has proven to be especially beneficial, as it helps individuals recognise manipulative tactics across various contexts (Vraga et al., 2019). As John Cook, a leading researcher in inoculation theory, suggests, combining fact and logic in prebunks enables people to both understand the facts and identify distortions (Lewandowsky et al., 2012).

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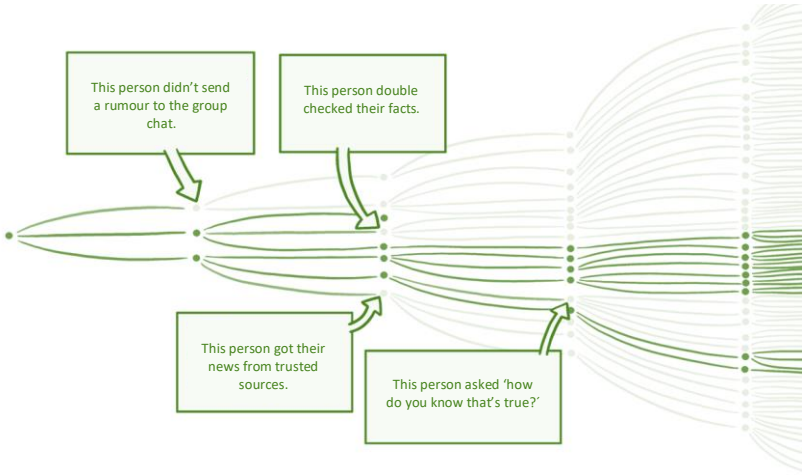

Figure 9 - Means of verifying information

(Source: World Health Organisation, n.d.)

Effective Pre-bunking Strategies: Identifying common misinformation narratives, developing counter-narratives, and creating engaging pre-bunking content

Since misinformation is notoriously difficult to eradicate once entrenched, **prevention is key**. Several prevention strategies have demonstrated effectiveness, such as warning individuals they may encounter misleading information. Research shows that general warnings about the unreliability of certain media sources can make people more open to future corrections (Ecker et al., 2011). More specific warnings, such as labels indicating content may be false, can reduce the likelihood of users sharing such information online (Mena, 2019). The process of prebunking follows a biomedical model, in which exposure to weakened misinformation techniques—accompanied by pre-emptive refutation—cultivates "cognitive antibodies" that protect individuals from future attempts to deceive (Lewandowsky et al., 2020). Pre-bunking, a proactive approach to combating misinformation, involves presenting individuals with information that refutes false narratives before they are encountered. This process aims to build cognitive resilience, helping people recognise and resist misinformation more effectively. Pre-bunking strategies focus on identifying common misinformation narratives, crafting compelling counter-narratives, and delivering engaging content that can be widely disseminated.

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Identifying Common Misinformation Narratives

The first step in effective pre-bunking is to identify recurring themes or narratives within misinformation. These often follow predictable patterns and target specific fears, uncertainties, or emotional triggers. Common misinformation narratives typically fall into several categories:

- **Health-related misinformation**: False claims about vaccines, alternative treatments, and the severity of diseases (e.g., COVID-19, climate change-induced health impacts). Such misinformation has been shown to reduce vaccine uptake and increase public health risks (Chou et al., 2020; van der Linden et al., 2020).
- **Political misinformation**: Fake news regarding election integrity, government conspiracies, or manipulated statistics often seeks to polarize opinions and undermine democratic processes (Guess et al., 2020; Pennycook & Rand, 2018).
- **Scientific misinformation**: Denial of established scientific consensus, such as climate change denial or misinformation about the safety of technological advancements (e.g., 5G networks), exploits cognitive biases to create doubt (Cook et al., 2017; Lewandowsky et al., 2017).
- **Social issues**: False narratives about immigration, race relations, or gender issues are frequently employed to provoke social division and amplify prejudice (Mena, 2019; Vraga & Tully, 2021).

Identifying these patterns requires continuous monitoring of social media platforms, news outlets, and online communities. Tools such as social media analytics, AI-powered fact-checking algorithms, and digital media literacy resources have proven effective in identifying misinformation trends and themes (Brennen et al., 2020; Wardle & Derakhshan, 2017). Understanding the most prevalent misinformation themes allows pre-bunking efforts to be targeted and relevant.

Developing Counter-narratives

Once common misinformation themes are identified, developing clear, evidence-based counter-narratives is critical. Counter-narratives should focus on not just refuting false claims but also providing compelling, truthful alternatives that are equally engaging and easy to understand. Effective counter-narratives share the following characteristics:

- **Clarity**: Messages should be concise, straightforward, and tailored to the audience's level of understanding. Overly complex explanations can hinder effective communication (Banas & Rains, 2010; Lewandowsky et al., 2017).
- **Positivity**: Counter-narratives should avoid fear-based messaging, which can backfire and increase resistance. Instead, emphasizing the benefits of accurate information fosters trust and engagement (Nyhan & Reifler, 2015; van der Linden et al., 2020).
- **Relevance**: Counter-narratives that align with the audience's values and lived experiences are more effective. Framing accurate information within relatable contexts enhances its impact (Cook & Lewandowsky, 2011; Wood & Porter, 2019).
- **Credibility**: Credible sources are critical for ensuring counter-narratives are trusted. Collaborating with respected experts or institutions adds legitimacy to the message (Vraga & Tully, 2021; Pennycook & Rand, 2019).

By combining these elements, counter-narratives can address misinformation effectively and foster a more informed public discourse.

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Creating Engaging Pre-bunking Content

Engaging content is central to effective pre-bunking, as it needs to capture attention in a crowded digital space. To create content that resonates with audiences, several techniques can be employed:

- **Multimedia Formats**: Pre-bunking content should take advantage of diverse formats such as videos, infographics, social media posts, games, and interactive quizzes. Research shows that multimedia engagement improves recall and increases the likelihood that people share the content. Gamified pre-bunking, such as interactive apps that teach critical thinking skills, has been shown to effectively build misinformation resilience (Basol et al., 2020; Maertens et al., 2021).
- **Storytelling**: Narrative-driven content is more compelling and memorable than facts alone. Stories that emphasize personal journeys, lived experiences, or the consequences of falling for misinformation can create emotional engagement. For example, pre-bunking content addressing climate misinformation might share experiences of communities directly affected by extreme weather to illustrate real-world impacts (Green et al., 2006; van der Linden et al., 2021).
- **Humour and Relatability**: Humour can make pre-bunking content more approachable and shareable, especially for polarizing topics. Satirical videos or memes that expose the absurdity of misinformation claims spread awareness effectively without triggering defensiveness (Pennycook et al., 2020; Roozenbeek & van der Linden, 2020).
- **Targeting Influential Platforms and Communities**: Effective pre-bunking involves meeting audiences where they are—on platforms, forums, or online spaces where misinformation circulates. Optimizing content for these platforms in terms of length, style, and tone, and collaborating with influencers or trusted community leaders, can significantly amplify the message (Vraga et al., 2015; Roozenbeek & van der Linden, 2019).

Incorporating Psychological Inoculation

Psychological inoculation, a technique modelled on the biomedical analogy of vaccines, involves exposing individuals to weakened versions of misinformation to "immunize" them against it. This strategy is based on the premise that people who have been forewarned and pre-exposed to the tactics of misinformation are less likely to fall for it when they encounter it in the future (van der Linden et al., 2017).

Pre-bunking messages should highlight common misinformation tactics such as:

Fake Experts: Presenting individuals without credible qualifications as authorities (Cook et al., 2017).

Cherry-Picking Data: Using isolated facts or out-of-context statistics to mislead (Cook & Lewandowsky, 2011).

False Balance: Equating scientific consensus with fringe theories to create a misleading sense of legitimacy (van der Linden et al., 2020).

Teaching audiences to recognise these tactics empowers them to become more critical consumers of information. For example, a pre-bunking campaign on climate change could illustrate how "fake experts" were historically used to cast doubt on the harms of smoking and show how similar methods are employed today to deny climate science (Oreskes & Conway, 2010).

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Scalability and Outreach

To maximize the effectiveness of pre-bunking strategies, content must be scalable and widely accessible. Social media platforms provide extensive audience reach, but pre-bunking messages can also be integrated into formal education, media campaigns, and policy frameworks. For example, teachers can implement interactive workshops, games, and discussions to help students recognise misinformation tactics and develop critical thinking skills (Roozenbeek et al., 2022; Basol et al., 2021). Partnerships with media organizations, governments, and NGOs further amplify pre-bunking efforts. Governments can embed pre-bunking techniques in public health campaigns, while NGOs can focus on misinformation related to elections or social issues (Lewandowsky et al., 2017; Guess et al., 2020).

Effective pre-bunking strategies are grounded in identifying common misinformation narratives, crafting compelling counter-narratives, and designing engaging, shareable content for digital platforms. By emphasizing clarity, credibility, emotional engagement, and utilizing multimedia formats alongside psychological inoculation techniques, educators and communicators can strengthen societal resilience against misinformation (van der Linden et al., 2020; Cook et al., 2017). Pre-bunking offers a proactive approach that, when implemented effectively, mitigates the impact of false narratives before they gain traction.

Evaluating Pre-bunking Effectiveness: Measuring the impact of pre-bunking campaigns and making necessary adjustments

Evaluating the effectiveness of pre-bunking campaigns is crucial to ensure they successfully mitigate the spread and influence of misinformation. Measuring the impact of these campaigns involves assessing how well they increase audience resistance to misinformation, improve critical thinking, and encourage scepticism towards false claims. This evaluation process is essential for refining strategies and making necessary adjustments to enhance the overall success of pre-bunking interventions.

Key Metrics for Measuring Effectiveness

To evaluate the impact of pre-bunking efforts, a set of measurable outcomes must be identified. These include:

- **Awareness and Understanding:** Assessing whether individuals recognise common misinformation tactics and better understand the nature of false claims. Pre- and post-exposure surveys or quizzes can measure changes in awareness (Roozenbeek et al., 2020).
- **Cognitive Resilience:** Measuring an individual's ability to resist misinformation when encountered. Experimental studies can evaluate how well individuals reject false information after receiving a pre-bunking message (van der Linden et al., 2017).
- **Behavioral Changes:** Observing whether individuals are less likely to share or believe false information online. Behavioral data from social media or controlled experiments can indicate a reduction in misinformation-sharing behavior (Guess et al., 2020).
- **Engagement and Reach:** Evaluating how widely pre-bunking content is shared and engaged with on social media. Metrics such as likes, shares, comments, and views provide insights into the campaign's visibility and resonance with target audiences (Basol et al., 2021).

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Methods for Evaluating Pre-bunking Campaigns

Several research methods can be used to measure the effectiveness of pre-bunking campaigns:

- **Experimental Studies:** Controlled experiments are an effective way to assess cognitive resilience. These studies divide participants into groups exposed to pre-bunking content and those that are not, followed by post-exposure tests to evaluate their ability to detect and resist misinformation (van der Linden et al., 2017; Roozenbeek et al., 2020).
- **Surveys and Questionnaires:** Pre- and post-campaign surveys are useful tools for assessing changes in audience knowledge, attitudes, and behaviors. They measure whether participants become more skeptical and critical of misinformation after exposure to pre-bunking efforts (Lewandowsky et al., 2017; Basol et al., 2021).
- **Social Media Analytics:** Analyzing interactions with pre-bunking content on social media provides insights into its reach and impact. Metrics such as engagement rates (likes, shares, and comments) and sentiment analysis help gauge audience responses and the campaign's effectiveness (Guess et al., 2020).

Combining these methods provides a comprehensive understanding of the effectiveness of pre-bunking strategies and helps refine them for future implementation.

Adjusting Pre-bunking Campaigns

Based on the evaluation results, necessary adjustments can be made to improve the effectiveness of future pre-bunking efforts. These adjustments may involve:

- **Refining Content:** If evaluation results reveal that certain messages were less effective, the content can be revised to better resonate with audiences. Enhancements might include simplifying complex language, increasing emotional appeal through storytelling, or aligning counter-narratives with audience values and experiences (Lewandowsky et al., 2017; Basol et al., 2021).
- **Targeting Specific Audiences:** Data may indicate that certain demographics responded better to pre-bunking efforts. Campaigns can be fine-tuned to focus more on these groups while exploring alternative approaches for less responsive audiences (Guess et al., 2020).
- **Optimising Delivery Platforms:** Engagement metrics could highlight platforms where content performed better (e.g., higher shares on TikTok than Facebook). Future campaigns can prioritize these platforms, adapting formats to fit audience preferences for multimedia or interactive content (Maertens et al., 2020; Roozenbeek et al., 2020).
- **Scaling Effective Techniques:** Successful strategies, such as gamification or the use of humor, can be scaled up and applied across different campaigns to maximize reach and impact (Basol et al., 2021; Roozenbeek et al., 2020).

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Challenges in Evaluating Pre-bunking Effectiveness

Evaluating the long-term impact of pre-bunking campaigns poses certain challenges:

- **Long-term Retention**: While short-term effects can be measured through immediate tests and surveys, assessing the longevity of pre-bunking interventions requires long-term studies to see if cognitive resilience is sustained over time (Maertens et al., 2020; Roozenbeek et al., 2020).
- **Attribution**: It can be difficult to attribute changes in behaviour or beliefs directly to the pre-bunking campaign, especially when other factors (such as new media reports or ongoing misinformation) might also influence audience behaviour (Guess et al., 2020; Lewandowsky et al., 2017).
- **Cross-platform Misinformation**: Misinformation spreads across multiple platforms and measuring the impact of pre-bunking on just one platform may not capture its full effect. A multi-platform evaluation strategy is needed to address this complexity (Basol et al., 2021; Roozenbeek et al., 2020).

Effective evaluation of pre-bunking campaigns is essential for understanding their impact and improving future interventions. By measuring awareness, cognitive resilience, behavioural changes, and engagement, teachers and media professionals can determine what works and what needs adjustment. Continuous monitoring and the willingness to adapt strategies based on data are key to enhancing the success of pre-bunking efforts in the fight against misinformation.

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Example of an Activity:

- Objective: Help learners understand how disinformation is created and spread by exploring the tactics used by fake news producers through gameplay. The activity aims to develop critical thinking skills and build resistance against disinformation.
- Link to the game: https://getbadnews.com/#intro

Table 15 - Activity 11

Duration	Activities	Resources and materials:
(10 min)	Group Formation: Divide the class into pairs	
(10 min)	Introduction: 1. The facilitator begins the session by explaining the concept of disinformation and the importance of knowing how to identify and resist fake news. It's also essential to introduce the "The Bad News Game" and its purpose. 2. The facilitator briefly explains how the game simulates the tactics used by fake news creators and how learners will play with the goal of gaining followers and credibility while avoiding losing both.	Computer or projector for the initial presentation; Internet connection (if possible, briefly show the game website)
(20 min)	Game Start: 1. The facilitator provides basic instructions for playing "The Bad News Game". 2. The pairs should pay attention to the choices they make in the game, reflecting on the disinformation strategies they are using (such as emotional manipulation, creating polarisation, among others). 3. Learners play for 20 minutes, trying to increase their followers and maintain credibility.	Computers or tablets for each pair; Internet access for the game
(15 min)	Results Review and Reflection: 1. After the game, learners review their results (number of followers, credibility, and badges earned). The facilitator may ask some pairs to share their results. 2. The badges correspond to the disinformation tactics used (Impersonation, Emotion,	Computers/tablets where learners played; Notebooks or note-taking devices for each pair to write down their results and badges

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	Polarisation, Conspiracy, Discredit, Trolling) and should be analysed by the learners	
(15 min)	Group Discussion: 1. The facilitator leads a group discussion using reflective questions to deepen the understanding of disinformation tactics. Key questions might include: - How did you find the experience of playing the game? - How did you feel about the results you achieved? - How easy is it to spread fake news based on what you experienced? - What did you learn about disinformation tactics from playing the game? 2. The idea is for learners to share their experiences and insights, discussing the social impact of fake news.	Flipchart or whiteboard to record key ideas during the discussion; Markers

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7.MODULE V: COMMUNITY AND POLICY INITIATIVES

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7.1. Module V – Objectives

MODULE SUMMARY/ MAIN CONTENTS	This module explores the critical role of teachers and communities in promoting Media and Information Literacy (MIL) and combatting disinformation. It emphasises collaborative efforts between community members, stakeholders, and policymakers to foster MIL and align teaching practices with existing policies. The module is divided into two parts: community-driven strategies for tackling disinformation and integration of MIL policies into teaching practices. By the end, learners are expected to be equipped with knowledge and tools to analyse community-based approaches, collaborate effectively, and adopt teaching practices that build a resilient and informed society.
TIMETABLE & SCHEDULE	Asynchronous – 2 hours ● Content of module Synchronous session – 2 hours ● Activities
LEARNING OUTCOMES OF THE MODULE	By the end of this module, learners should be able to: ● Understand the basics of a community. ● Enumerate ways of collaboration between stakeholders, community leaders and policymakers to support MIL initiatives. ● Describe promising practices of community involvement in promoting Media Information Literacy. ● Align their teaching practices with existing Media Information Literacy and disinformation policies at various levels local, national, and international.

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This module explores the vital role that teachers, policymakers and communities play in fostering MIL and combatting disinformation. The learning goals of this module focus on understanding how collaborative efforts between community members, stakeholders, and policymakers can promote MIL, as well as aligning teaching practices with existing policies. The significance of this module for teachers lies on equipping them with tools and knowledge to involve their communities and the broader educational environment in their activities to effectively address the growing challenges of misinformation and disinformation.

The Module is divided into two sub-modules. The first emphasises the importance of community-driven strategies in promoting MIL and tackling disinformation. It explores the different forms and characteristics of community involvement and collaboration, providing insights into how learners can partner with local leaders and stakeholders to create impactful MIL initiatives. The second sub-module shifts focus towards aligning teaching practices with international MIL policies. Teachers learn more about how to integrate these strategies into their classrooms, fostering critical thinking and resilience against disinformation among students.

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7.3. Sub-module - Collaborative Efforts & Community Involvement

SUB-MODULE SUMMARY/ MAIN CONTENTS	This sub-module focuses on the role of communities in promoting Media and Information Literacy (MIL) and combatting disinformation. It explores the concept of community, highlighting both its physical and relational aspects, while outlining various community-based strategies for tackling misinformation and disinformation. The sub-module is supplemented by an activity aiming to provide learners with a stronger understanding of how community involvement can successfully address disinformation.
LEARNING OUTCOMES OF THE SUB-MODULE	By the end of this sub-module, learners should be able to: • Understand the basics of a community. • Enumerate ways of collaboration between stakeholders, community leaders and policymakers to support MIL initiatives.

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The basics of a community

Providing a definition of "community" may be a difficult task, as the term has been given several definitions over the years. A community may take many different forms. It can be understood both as a neighbourhood and as a set of relationships. (Hardy & Grootenboer, 2016; Sanders & Galindo, 2014). When a community is viewed as a neighbourhood, it represents the shared living spaces of individuals. By focusing on the physical proximity, the community describes mainly the space where individuals connect. On the other hand, the viewpoint of a community as a set of relationships goes beyond physical boundaries, by focusing on the social aspect of a community. Under this lens, communities are understood as networks of associations between different groups and individuals with shared interests, or connections.

Figure 10 - The basis of a community

Source: Hardy & Grootenboer, 2016; Sanders & Galindo, 2014

Rein (1997) in his definition adds the concept of values as an integral component for a community. He defines a community as a "*group of people sharing a common interest and set of values*" and argues that the higher sense of identity developed among community members the more intense the communities tend to be (Rein, 1997: 43). Etzioni (2000) on the other hand, adds the elements of bonds and shared culture by considering community as the combination of two components: a) a web of relationships, woven together by emotional ties and mutual influence and b) a commitment to a common culture, through shared history and identity, values, norms and meanings.

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Community involvement can be better understood as a process, as it evolves through various stages of participation, collaboration and shared decision–making (Schiavo, 2021). The communities are the main beneficiaries of this process, as they gain greater ownership over their actions. It can create new power dynamics and inspire policy, program, and practice innovation. Some core elements of community involvement are collaboration with and within the community and their empowerment. Meaningful community involvement adopts a "bottom-up approach" to include the members of the community in the steps of designing new policies and practices and in the decision-making process (Schiavo, 2021). However, no community can claim exclusiveness over its members, as everyone may join multiple communities (Rein, 1997). This is even more evident as the advancement of Information and Communication Technologies (ICTs) has widened the potential for new collaborations between different communities and institutions and, at the same time, community members may be part of various communities in different parts of the globe and platforms in the world wide web (Watkins & Russo, 2005). Such platforms may create a kind of web community, where membership is gained through the creation of an account in the platform (Zannettou, 2019).

Communities, MIL and Disinformation

UNESCO recognises the significance of community organisations in the formulation of policies related to the promotion of Media and Information Literacy. Grizzle & Calvo (2013) argue that community organisations have the expertise to serve their members and, as such, they can be instrumental in the creation and execution of MIL initiatives.

When it comes to disinformation, communities can significantly contribute to both the spread of false and fabricated information and its debunking (Memon & Carley, 2020). With the examples of web communities in platforms such as Reddit and X (Twitter), members of such communities have fertile ground to spread news and memes with questionable content that may eventually influence communities in other platforms (Zannettou, 2019). Effective grassroot efforts and strategies for strengthening resilience against misinformation and disinformation have a strong sense of community and common understanding of a shared cause among community members at their core (Lee et al., 2022).

In community-based efforts, debunking remains the outcome of a process where community members discuss, negotiate and share knowledge to identify the credibility of a news source. However, it also emerges as a learning and social process for the members to learn high-level debunking skills and form and enforce community rules (He & He, 2022). Through crowdsourcing methods, members have the opportunity to interact and negotiate with each other over what to debunk and how to debunk it, request clarifications and provide explanations over a news source. In these types of web communities, certain members overtake the role of crowd debunkers. These members tend to be people with more expertise, knowledge and experience in a particular subject, making the diversity of backgrounds essential (He & He, 2022). He & He (2022) discuss different strategies used by web community members in their efforts to debunk a news post. These strategies are differentiated by whether they are taken on an individual basis or a community level.

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Table 16 - Strategies for information credibility assessment

Strategy	Description
INDIVIDUAL-LEVEL STRATEGIES	
Based on specific characteristics of the information	The credibility of information is based on factors such as: - Credibility of source - Expertise and background of author(s) - Author's unbiased and neutral viewpoints and affiliations - Author's past with generation and dissemination of suspicious information - Whether relevant supporting material accompanies the information - Deliberate modification and selective choice of the content - Content's basic logic flaws Some other factors debunkers consider when assessing the trustworthiness of news articles are hyperboles in the title and in-text and the quality of accompanying photos (Danielidis, 2014).
With the support of external information	An individual cross-checks information through personal research in sources considered as credible (e.g. peer-reviewed articles, mainstream news websites, fact-checking platforms etc).
With personal knowledge	Debunking information can occur through two types of personal knowledge: a) Domain Knowledge and b) Situated Knowledge. The former is generated from a certain field of expertise that someone has. The latter is related to knowledge gained through family, friends and personal experiences.
With multiple strategies	Using a combination of the strategies above.
COMMUNITY-LEVEL STRATEGIES	
Supplementation	One member of the community adds additional information and observations to the ones made by another member. These extra inputs could also be high-level reflections or even warnings about debunking methods.
Request	In cases of claims made by community members, some other members may ask for additional information e.g. clarifications, definitions of terminology etc that could

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Correction	Community members point out flaws and suggest corrections to the initial claims of a community member.
Debate	A discussion between at least two community members with differentiated opinions.
Summarisation	Offering summaries of multiple explanations made by different community members to make the explanation more easy-to-read.

(Source: He & He, 2022)

In a web platform, community-based strategies for combating misinformation can either be active or passive, depending on the stance taken by the members of the community or they can be characterised by their level of engagement in the debunking process as engagement or distancing (Lee et al., 2022).

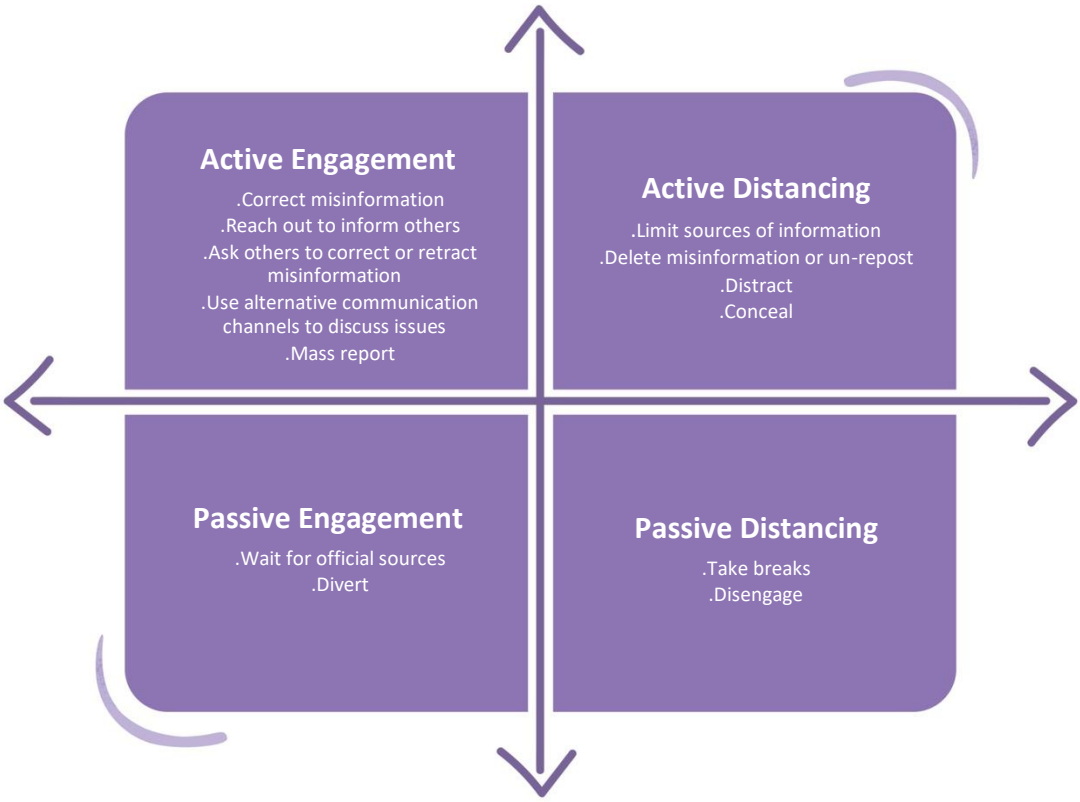

Figure 11 - Levels of the engagement

Source: Lee et al., 2022

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In more specific incidents of community-based approaches to tackle misinformation and disinformation related to certain topics, two significant elements arise: i) collecting information about community members perceptions (e.g. through discussions, interviews, focus groups etc) and ii) disseminating information tailored to the target-group's needs (Mahmud, 2020). Furthermore, community stakeholders can act as independent sources of information for policymakers so the latter can gain inputs to draw new policies. For this to occur, it is imperative that individuals with specialised expertise take on the responsibility of disseminating credible information to the broader community (Myers, 2021). Meanwhile, community members should acquire the critical skills necessary to evaluate the incoming information.

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Table 17 - Promising Practices of Community Involvement

Stopfake project https://www.stopfake.org/en/main/	Stopfake project is a community-driven initiative that fact-checks information, analyses propaganda and raises awareness about the dangers of disinformation. It relies heavily on its community of readers and debunkers, through methods such as crowdfunding and readers' contributions.
Ellinika Hoaxes https://www.ellinikahoaxes.gr/	Ellinika Hoaxes is a leading initiative in Greece dedicated to combating misinformation and disinformation. As a certified member of international fact-checking networks, the team leverages its expertise to analyse and debunk false news and misleading claims circulating online. Through interactive engagement with the public and the provision of reliable information, Ellinika Hoaxes contributes to fostering critical thinking and empowering citizens against the dangers of misinformation and disinformation. The public is engaged in the initiative's activities mainly through suggestions on topics and providing corrections. Through collaboration with the public, the initiative encourages citizen participation in the detection and reporting of fake news, creating a network of solidarity against disinformation.

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Example of an Activity

- Objective: To equip learners with a deeper understanding of how community involvement and stakeholder collaboration can effectively counter disinformation.

Table 18 - Activity 12

Duration	Activities	Resources and materials:
(10 min)	Group Formation: Divide the class into small groups	
(15 min)	Introduction: 1. The facilitator will introduce learners to the objectives and settings in which the activity will take place. 2. Learners are asked to briefly share if they have experienced misinformation or disinformation in their communities and how it was handled.	
(30 min)	Group Work - Community Strategy Plan 1. The facilitator asks each group to design a community-driven strategy to combat disinformation in their local context. 2. Learners should consider specific stakeholders to be involved, methods to engage with the community and tools to be used. 3. Learners may use whatever resources they find necessary for the development of this plan.	Flip charts and markers
(15 min)	Presentations and Feedback Session: 1. Each individual/group is requested to briefly present their strategy to their peers. 2. After each presentation, the facilitator and the learners can provide feedback, ask questions, or suggest improvements.	

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7.4. Sub-module - Policies Recommendations and Professional Development

SUB-MODULE SUMMARY/ MAIN CONTENTS	This sub-module focuses on aligning teaching practices with international MIL policies and strategies to combat disinformation. It emphasises the need for teachers to adopt multidisciplinary approaches to help learners critically assess information. It highlights frameworks aiming to bridge the gap between professional fact-checkers and teachers.
LEARNING OUTCOMES OF THE SUB-MODULE	By the end of this sub-module, the learners should be able to: ● Align their teaching practices with existing Media and Information Literacy and policies against disinformation at the international level.

As the landscape of media and information consumption continues to evolve the need to equip teachers and students with the skills and knowledge necessary to combat disinformation has become increasingly crucial. The value of media and information literacy in combating disinformation has been widely recognised.

Effective interventions require a multidisciplinary approach, drawing from fields such as psychology, sociology, and computer science, to develop educational initiatives that enhance citizens' fundamental understanding of the information environment. Moreover, phenomena such as the rise of citizen journalism underscores the need to empower users with the technical means to detect disinformation, like the capabilities available to professional journalists (Mazurczyk et al., 2023).

Teachers play a pivotal role in this endeavour, as they are uniquely positioned to reach and influence future generations. However, the gap between professional fact-checkers and the public, including teachers, remains a significant challenge. To address this, it is essential to explore how international-level policies on Media and Information Literacy and anti-disinformation can be effectively translated into classroom practices.

This module's main objective is to investigate how teaching practices can be better aligned with existing Media and Information Literacy policies and policies against disinformation at the European level, with the goal of empowering teachers to effectively address these critical issues in the school environment.

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European Policies on MIL and Disinformation

In May 2018, the European Commission adopted a communication on tackling online disinformation. The study underscored the growing attention to media and information literacy and intercultural competence in European policymaking. The study recommended that the European Union incorporate media and information literacy and intercultural competence into its strategies to address disinformation, media pluralism, and critical thinking (Durach et al.2020). In the literature, scholars suggest steering the attention of teachers and educational stakeholders towards European policy developments on media and information literacy, disinformation, and online platforms as a way of fostering critical understanding of the current political, economic, and social contexts around information and communication technology and education that future teachers will be teaching (Prokopović & Vujović, 2020).

There are several reasons European policies on media and information literacy lack cohesion. The initial justification in the European Commission's communication on combating fake news is that policymakers see media and information literacy and education as crucial elements to help individuals tell the differences between fact-based news and disinformation. The communication states that traditional options for addressing fake news offer only "part of the solution." On a broader societal level, strategic goals underpin policies to promote media and information literacy. (Phippen et al., 2021) This is clear in the European Strategy for a Better Internet for Kids. In essence, this strategy marks children's involvement in European policy thinking, making them the ends and the subjects of a strategy that relies on internet use to elevate and protect the value of childhood and "to encourage the rights to freedom of opinion, expression, and direct participation" in the functioning of democracy more widely (European Commission, 2022). Media and information literacy, then, seeks to remediate the internet in the hope it will rejuvenate democracy at the local, regional, and European level. Media and information literacy attracts more sustained attention from policymakers in that it intersects with the seemingly intractable problem of disinformation online.

To be able to provide a more comprehensive context for teachers in Europe who teach and assess Media and Information Literacy (MIL), it is important to outline a few key policies that are closely connected to disinformation and help shape the way in which MIL for teachers in schools is conceptualised and delivered. Since 2018, disinformation has garnered significant European policy attention, and several regulatory and strategic measures have been developed to address this phenomenon. Legislation aimed to combat various forms of disinformation, such as political disinformation, hate speech, and harmful content. More importantly, there are several strategic policy documents that provide insights on how to approach disinformation and MIL for teachers in the classroom (Hoboken & Fathaigh, 2021).

Significantly, a range of European policy bodies manufacture these agreements on a harmonised European approach to MIL. These include the European Union and its supported Media Literacy Expert Group; ministers in the Council of Europe; the ministers of education in the EU countries; and through the European Association for Research on Learning and Instruction Media and Information Literacy Special Interest Group. These policies rely on the assumption that some level of policy compliance can be expected in each of the cooperating member countries that engage with and contribute to the policy document development.

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They seek to support teachers by mandating member state departments and/or ministries of education to provide professional development opportunities for teachers. The gap identified by practitioners between these expectations and the day-to-day implementation in practice of policy recommendations through professional development makes it necessary to seek further detailed evidence on practical delivery (Arcos et al., 2022).

Education on MIL has the potential to improve society's resilience against disinformation. As a result, teachers can also play a role in reducing the influence of systemic disinformation in daily lives. Offering a false dichotomy of disinformation as part of the consequence of technological progress and human behaviour facilitates not taking the subsequent disinformation policies seriously (Jones-Jang et al., 2019; De Paor & Heravi, 2020).

UNESCO has developed a conceptual Framework for MIL Strategies (Grizzle & Calvo, 2013). Within this framework, certain development goal contexts are described and connected with target areas and certain outcomes that could form the basis for MIL strategies. A part of this Framework that is related directly to education is illustrated in Figure 11 – Framework for MIL Strategies below:

Figure 12 - Framework for MIL Strategies

(Source: Grizzle & Calvo, 2013)

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Implementing MIL Policies in the Classroom

Existing MIL policies at the European level provide a solid foundation for enhancing teachers' teaching practices. These policies emphasise the significance of developing critical thinking skills, digital competencies, and the ability to navigate the information landscape effectively (Bliss et al., 2020; Austin et al., 2021) Furthermore, coherent educational experiences are improved through the alignment of pedagogical approaches with established standards for education. Such alignment allows for more practical applications of competence and the establishment of programs supporting and promoting critical thinking and a European MIL perspective to federate instructional and learning activities (Itow, 2020).

One key aspect of MIL policies is the emphasis on fostering societal resilience to disinformation. This can be achieved through educational initiatives that engage students in active learning, such as fact-checking exercises, analysis of media sources, and discussions on the impact of disinformation. By equipping students with necessary skills and knowledge, teachers can help them become more discerning consumers of information, ultimately strengthening their ability to navigate the digital landscape. Recognising the pivotal role that anti-disinformation policies play in addressing their teaching practices with these policy frameworks. To effectively integrate anti-disinformation policies into the classroom, teachers can leverage a range of strategies. Teachers can incorporate elements of prebunking, which involves engaging students in activities that enhance their ability to detect disinformation before it is encountered (Mazurczyk et al., 2023).

UNESCO has developed a Curriculum for Teachers on the topic of Media and Information Literacy (Grizzle & Wilson, 2011). This UNESCO Curriculum is divided by two main parts: i) The Curriculum and Competency Framework and ii) the Modules that should and are advised to be part of such curriculum. This curriculum is developed with 3 main interrelated thematic areas (Grizzle & Wilson, 2011: 22):

- Knowledge and understanding of media and information for democratic discourses and social participation
- Evaluation of media texts and information sources
- Production and use of media and information

These three areas are connected with six key topics of general education and teacher development to depict their progressive relationship and create a curriculum framework for the UNESCO MIL Curriculum Framework for Teachers.

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Table 19 - The UNESCO MIL Curriculum Framework for Teachers

Key Curriculum Areas	Knowledge of media and information for democratic discourse	Evaluation of media and information	Production and use of media and information
Policy and Vision	Preparation of media- and information-literate teachers	Preparation of media- and information-literate students	Fostering of media- and information-literate societies
Curriculum and Assessment	Knowledge of media, libraries, archives and other information providers, their functions and the conditions needed to perform them	Understanding of criteria for evaluating media texts and information sources	Skills to explore how information and media texts are produced, social and cultural context of information and media production; uses by citizens; and for what purposes
Pedagogy	Integration of media and information in classroom discourse	Evaluation of content of media and other information providers for problem-solving	User-generated content and use for teaching and learning
Media and Information	Print-based media – newspapers and magazines; information providers – libraries, archives, museums, books, journals etc.	Broadcast media – radio and television	New media – Internet, social networks, delivery platform (computers, mobile phones, etc)
Organisation and Administration	Knowledge of classroom organisation	Collaboration through media and information literacy	Applying media and information literacy to lifelong learning
Teacher Professional Development	Knowledge of MIL for civic education, participation in the professional community and governance of their societies	Evaluation and management of media and information resources for professional learning	Leadership and model citizen; championing the promotion and use of MIL for teacher and student development

(Source: Grizzle & Wilson, 2011)

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Teachers should incorporate diverse media platforms into their instruction, as one way to implement MIL policies effectively. In other words, teachers should make use of different types of media – videos, pictures, newspapers, podcasts and even social media content – as a way for them to become more digitally literate, but also familiarise the learners with the plethora of news sources available. By using these resources, teachers can engage students in critical thinking exercises that challenge them to analyse media content, evaluate information sources, and reflect on the ethical implications of media production and consumption (Martens & Hobbs, 2015: 6). Additionally, fostering a participatory learning environment encourages students to create their own media and content, such as podcasts or digital stories, which helps them understand the impact of media on democracy and social participation. Furthermore, teachers should emphasise the role of media in democratic discourse and civic engagement (Martens & Hobbs, 2015). This can be done by guiding students to explore media representation and the ways in which different voices are amplified or marginalised. Teachers can incorporate problem-based learning where students analyse real-world media issues, such as misinformation or media bias, to develop their capacity for critical evaluation. Encouraging discussions on media's role in transparency and governance will not only enhance students' media literacy but also prepare them to be informed citizens who understand the importance of free and diverse media in upholding democratic principles (Meeus et al., 2014).

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Example of an activity

- Objective: To familiarise learners with the European MIL policies and anti-disinformation networks and help enhance their analytical skills for aligning their teaching practices with the existing policies.

Table 20 - Activity 13

Duration	Activities	Resources and materials:
(10 min)	Group Formation: Divide the class into small groups	
(15 min)	Introduction: 1. The facilitator will introduce learners to the objectives and settings in which the activity will take place.	
(30 min)	Pre-Activity Reading: 1. The facilitator provides students with key policy documents on MIL and disinformation such as the European Commission's Action Plan Against Disinformation or the UNESCO's MIL Curriculum for Teachers. 2. Learners will read and highlight sections relevant to education and professional development. 3. To speed up part of the process, the facilitator may share these documents with the learners a few days before the day of the activity.	Key policy documents
(20 min)	1. Each group discusses: - Key aspects of MIL policies in Europe - Strategies outlined to combat disinformation in an educational context - Challenges teachers face in aligning their teaching practices with these policies 3. One member from each group summarises the discussion points to the rest of the learners.	Flip charts and markers
	Plan Development:	

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(45 min)	1. Learners begin designing a plan outlining how they can integrate European MIL and anti-disinformation policies into their teaching practices. 2. The plan should include: - Specific teaching strategies to raise students' awareness of disinformation - Resources to be utilised for improving students' learning experience. - Methods to evaluate the effectiveness of their MIL teaching 3. Learners may use whatever resources and methods to outline their plan they consider necessary (paper, laptop etc.)	Flip charts and markers or access to the internet and computer
(30 min)	Review Session: 1. Learners will exchange their plans with other groups to receive and provide feedback 2. Upon completion of the review process, groups will refine their plans based on the suggestions made by their peers.	

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National Policies on MIL and Disinformation

This section provides an overview of the key policies and legislations addressing misinformation, media literacy, and information literacy, with examples from several European countries, including Austria, Belgium, Cyprus, Germany, Greece, the Netherlands, Poland, Portugal, and Romania. Through the analysis of the initiatives and regulations adopted, a growing concern about the spread of misinformation and the need to promote a critical and informed approach to media and digital information is evident. In countries such as Austria, Belgium, and Portugal, educational and legislative policies have adapted to integrate media literacy into school curricula, with a focus on empowering students to face the challenges of the digital environment. Austria, for example, updated its Media Education Principles Decree to reflect the demands of digitalisation, while Belgium developed specific recommendations and action plans to combat fake news and promote media literacy, both in education and in media practices.

However, not all European countries have clear legislation or formally integrated policies in schools to address media literacy and misinformation. Countries such as Cyprus, Greece, the Netherlands, Poland, and Romania present different approaches. Although there are some general measures, such as data protection legislation or national-level misinformation combatting efforts, the implementation of specific policies for education in schools is still under development or absent in many of these countries. For example, Greece has criminal law aimed at penalising the dissemination of fake news, but there is no systematic approach to integrating media literacy into the school curriculum. Similarly, in Poland and Romania, although there are regulations related to protecting against false information, media literacy in schools is not yet a legislative priority.

Despite these differences, the trend in several countries is to recognise the need to empower citizens, especially younger generations, for responsible and critical consumption of information, reflecting the increasing relevance of digital education in the current context.

Austria

Principles Decree on Media Education, Update, Information for Schools
https://rundschreiben.bmbwf.gv.at/rundschreiben/?id=1308
This decree updates the Principles Decree on Media Education to align with the demands of digitalisation and introduces the subject of Digital Literacy as part of the curriculum. The decree aims to support Austrian schools in adapting to the digital age and enhances media education across all educational levels.

Media Cooperation and Promotion Transparency Act (MedKF-TG)
https://www.rtr.at/medien/aktuelles/veroeffentlichungen/Veroeffentlichungen/Verordnungen/MedKF-TG_Eingabeverordnung_2023.de.html
The Media Cooperation and Promotion Transparency Act (MedKF-TG) aims to ensure transparency in the allocation of advertising contracts and public funding. The law requires entities under the oversight of the Federal Court of Auditors (Rechnungshof des Bundes) to disclose their media cooperations and subsidies. The goal is to provide clear and accessible information to the public on how public resources are used in the media sector. Starting in October 2024, the data will be presented in a new, more visually accessible format. The Communications Authority Austria (KommAustria) has also issued a regulation to standardise and simplify the reporting process.

Belgium

Belgium Flanders

Recommendations on Fake News and Disinformation
https://www.vlaanderen.be/publicaties/aanbevelingen-omtrent-fake-nieuws-en-informatieverstoring-advies-sarc

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This 2019 report from the Flemish government provides recommendations for combating fake news and disinformation. It highlights the importance of research and the development of best practices for identifying and mitigating the impact of disinformation in media and education.
The government of the Flemish region is responsible for media, education and is actively sponsoring different types of research and good practices to be deployed in media and education.
The 2019 report on Fake News and Desinformation advises research and the development of good practices to detect fake news.

Results of Action Plans on Disinformation
https://www.vlaanderen.be/cjm/nl/nieuws/resultaten-van-vijf-projecten-rond-desinformatie
In 2024, the Flemish government presented the outcomes of five action plans designed to address disinformation. These initiatives focus on enhancing the integration of media literacy and critical thinking skills in education and media practices, aiming to build resilience against fake news.

Flemish Media Regulator Report on Media Concentration
https://www.vlaamseregulatormedia.be/nl/over-vrm/rapporten/2020/rapport-mediaconcentratie/mediaconcentratie-in-vlaanderen-2020/4-32
The Flemish Media Regulator oversees media-related activities in the region. The 2020 report on media concentration provides insights into the media landscape in Flanders, including trends and potential risks that could influence the spread of disinformation. This report supports evidence-based policies and measures to maintain a balanced and reliable media environment

Belgium Wallonia

Conseil Supérieur de l'Audiovisuel (CSA)
https://odil.org/politique-publique/belgique-federation-wallonie-bruxelles/#conseil_superieur_de_laudiovisuel_csa
The CSA is the regulatory body for audiovisual media in Wallonia, ensuring compliance with media laws and promoting ethical media practices. It plays a critical role in maintaining standards and combating disinformation within the region's media landscape.

Conseil Supérieur de l'Éducation aux Médias (CSEM)
https://odil.org/politique-publique/belgique-federation-wallonie-bruxelles/#conseil_superieur_de_laudiovisuel_csa
CSEM is dedicated to promoting media literacy in Wallonia. It provides recommendations and resources to educators and institutions, aiming to enhance critical thinking and the responsible use of media. This organisation is pivotal in fostering resilience against disinformation through education.

Belgium Ostbelgien (German community)

Ostbelgien Government Media and Education Initiatives
https://ostbelgienlive.be/desktopdefault.aspx/tabid-107/
The government of the German-speaking region of Belgium oversees education and media policies, focusing on fostering media literacy and addressing the challenges of disinformation. Reports and recommendations related to these efforts are accessible on their official platform, showcasing their commitment to informed and critical engagement with media.

Chipre

The Criminal Code Law (CHAP.154)
https://www.cylaw.org/nomoi/enop/ind/0_154/section-sc538de4e7-f17f-4668-a2b7-34f90b34ac1e.html
The "Criminal Code Law (CHAP. 154)" of Cyprus does not originally include specific provisions criminalising disinformation or the dissemination of "fake news". However, recent proposals to amend this law aim to introduce such provisions. These proposals are currently under debate, raising concerns

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among press freedom and human rights groups, as they could negatively impact freedom of expression and the independence of journalism.
The debate focuses on the introduction of clauses that would criminalise the dissemination of false information, potentially classifying it as a punishable offence under the criminal code. Although not yet formally part of the law, these amendments are being evaluated and discussed, with consultations involving media stakeholders and international organisations to prevent any detrimental effects on press freedom.

Cyprus News Agency Law 1989 to 2009
https://www.olc.gov.cy/OLC/OLC.NSF/DE198078A5AE0B48C225860D002DAFA0/$file/The%20Cyprus%20News%20Agency%20Laws%201989%20to%202009.pdf
The "Cyprus News Agency Law 1989 to 2009" regulates the operations and structure of the Cyprus News Agency (CNA), the main news agency in Cyprus. This set of laws establishes the role of CNA as an independent organisation responsible for providing accurate, impartial, and comprehensive information on national and international events. Although the "Cyprus News Agency Law" does not directly address disinformation or "fake news," its emphasis on impartiality and accuracy in news provision makes CNA a potential model for combating the spread of misleading information. The law does not criminalise disinformation but underscores the importance of a reliable news source, which is essential in times of "fake news" proliferation.

Germany

1. Federal Initiatives

Digital Education Initiative
https://www.volkshochschule.de/bildungspolitik/digitalisierung/app-stadt-land-datenfluss/index.php
Launched by the federal government, the Digital Education Initiative aims to boost digital literacy across all age groups. One of its key projects is the "Stadt-Land-DatenFluss" app, which focuses on enhancing citizens' data literacy.

Digital Pact for Schools
https://www.digitalpaktschule.de/de/was-ist-der-digitalpakt-schule-1701.html
The Digital Pact for Schools is a significant initiative that provides funding for the improvement of digital infrastructure in schools. This ensures educational institutions have the necessary resources to effectively teach digital skills, strengthening media literacy among students.

2. State Responsibilities

Education in Germany falls under the jurisdiction of individual states (Länder), each with its own education system. However, the Standing Conference of the Ministers of Education and Cultural Affairs (KMK) adopted the "Education in the Digital World" strategy in 2016, updated in 2021. This strategy defines the integration of digital education across the 16 federal states, ensuring consistency in media literacy teaching.
https://www.kmk.org/fileadmin/Dateien/pdf/PresseUndAktuelles/2017/KMK-Strategie_Bildung_in_der_digitalen_Welt_Zusammenfassung_en.pdf

3. Legal Framework

Interstate Treaty on the Protection of Minors in the Media (JMStV)
https://www.kjm-online.de/fileadmin/user_upload/Rechtsgrundlagen/Gesetze_Staatsvertraege/JMStV/Jugendmedienschutzstaatsvertrag_JMStV.pdf
The JMStV serves as a legal basis for protecting minors in the media. It regulates content to ensure that electronic media adhere to standards that protect children and young people from harmful material.

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Greece

Law 4855/2021

https://www.e-nomothesia.gr/kat-kodikes-nomothesias/nomos-4855-2021-phek-215a-12-11-2021.html

Article 36 of the Greek Penal Code criminalises the spread of fake news, aiming to address the harmful effects of misinformation in society. This new provision reforms Article 191 of the Penal Code, which previously addressed issues related to public order and defamation. The reform reflects Greece's attempt to adapt its legal framework to the challenges posed by the rapid dissemination of false information, particularly in the digital age. The law targets the intentional spread of misleading or false content, with the goal of protecting public trust and social cohesion.

Law 4990/2022

https://www.lawspot.gr/nomikes-plirofories/nomothesia/nomos-4990-2022

Law 4990/2022 was adopted in Greece to implement the European Union Directive on Whistleblowing (2019/1937) into national law. The legislation aims to establish a framework for the protection of whistleblowers who report breaches of EU law. It provides mechanisms for individuals to safely disclose information related to legal violations, ensuring that they are protected from retaliation. The law also outlines procedures for reporting, as well as the responsibilities of public and private entities to establish channels for whistleblowing. This legislation aligns Greece with EU standards on safeguarding individuals who expose wrongdoing, fostering transparency and accountability in both public and private sectors.

Law 5005/2022

https://www.kodiko.gr/nomothesia/document/847353/nomos-5005-2022

Law 5005/2022 was ratified by the Hellenic Parliament to enhance publicity and transparency in the press, focusing on improving media accountability. It introduces a new Special Committee tasked with overseeing the compliance of online media outlets with journalistic ethics. The committee's role is to ensure that digital news platforms adhere to established ethical standards, fostering credibility and trust in media content. This legislation aims to address the growing challenges in the media landscape, particularly with regard to online platforms, and to strengthen the integrity of journalism in Greece. The law aligns with broader efforts to regulate digital media and combat disinformation.

Netherlands

Media Act 2008

https://www.government.nl/topics/the-media-and-broadcasting/media-act-rules-for-broadcasters-and-programming

The Media Act 2008 in the Netherlands is a key piece of legislation that regulates broadcasting and the media landscape in the country. It establishes rules for broadcasters, including public and commercial media outlets, and sets out the requirements for programming and media content. The law aims to ensure that the media operates in a manner that respects freedom of expression, diversity, and pluralism, while also promoting transparency and accountability.

Dutch Digitalisation Strategy 2021

https://www.rijksoverheid.nl/documenten/kamerstukken/2021/04/26/nederlandse-digitaliseringsstrategie-2021

The **Dutch Digitalisation Strategy 2021** outlines the Netherlands' approach to digital transformation, emphasising innovation, sustainability, inclusivity, and resilience. It provides a comprehensive framework for leveraging digital technologies to drive economic growth, improve public services, and enhance societal well-being. The strategy addresses several key areas, including the digital economy, cybersecurity, artificial intelligence, digital skills, and data ethics.

Dutch Media Literacy Network

https://netwerkmediawijsheid.nl/over-ons/about-dutch-media-literacy-network/

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The Dutch Media Literacy Network is an initiative designed to promote media literacy among all age groups in the Netherlands. Established to foster critical thinking, digital skills, and the responsible use of media, the network operates as a collaborative platform connecting various stakeholders, including educational institutions, government agencies, libraries, and private organisations.

Italy

Piano nazionale per la scuola digitale (PNSD), launched by the Ministry of Education in 2016

https://scuoladigitale.istruzione.it/pnsd/

The Italian National Plan for Promoting Media Literacy in Schools, launched in 2016, aims to enhance students' critical thinking and digital skills. It provides teacher training, updated curricula on media analysis, and encourages safe, responsible media use. The plan emphasizes combating misinformation and fostering an informed, active citizenry through education. It is made of 4 topics:

Connectivity: Ultra-broadband in all schools, wired and wireless networks in every school, and subsidies for connectivity fees.

Environments and Tools:Innovative learning environments for digital education, digital devices for classrooms and students, innovative digital labs, and the Digital School Award.

Skills and Content: Innovative curricula and digital skills, innovative teaching methodologies, STEM, digital entrepreneurship, digital content, and innovative libraries.

Support; Training for school staff, digital coordinators, innovation teams, protocols, and best practices.

Poland

Journal of Laws 2024.17 t.j. - Act of 6 June 1997 - Penal Code
Article 132 [Intelligence disinformation]

https://sip.lex.pl/akty-prawne/dzu-dziennik-ustaw/kodeks-karny-16798683/art-132

The Act of 6 June 1997 - Penal Code (Journal of Laws 2024.17 t.j.), specifically Article 132, addresses the issue of intelligence disinformation in Poland. This article criminalises actions involving the deliberate dissemination of false information intended to mislead intelligence or counterintelligence operations, either by Polish authorities or foreign entities. Though penal law does not explicitly address fake news. A person who has become a victim of fake news may demand an end to violations of his personal rights.

Journal of Laws 2024.1061 t.j. - Act of 23 April 1964 - Civil Code
Article 24 [Protection of personal rights].

https://sip.lex.pl/akty-prawne/dzu-dziennik-ustaw/kodeks-cywilny-16785996/art-24

The Act of 23 April 1964 - Civil Code (Journal of Laws 2024.1061 t.j.), specifically Article 24, provides provisions for the protection of personal rights in Poland. This article focuses on safeguarding individuals against infringements on their personal dignity and reputation.

Portugal

Law No. 74/2020, of November 19th

https://diariodarepublica.pt/dr/detalhe/lei/74-2020-148963298

Law No. 74/2020, of November 19th, is adapted from Directive (EU) 2018/1808, which reformulates the regulatory framework for audiovisual media services in the European Union. The legislation updates the rules to keep pace with changes in media consumption and strengthens the protection of users, with particular attention to children and young people, promoting a safer and more transparent media ecosystem.

This law assigns the Entidade Reguladora para a Comunicação Social (ERC) (Portuguese Media Regulatory Authority) the responsibility to monitor and promote media literacy skills in Portugal. To

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fulfil its mission, the ERC must prepare periodic reports on the development of media literacy in the country and also evaluate the initiatives of digital platforms and media service providers. The legislation requires these platforms to implement informational and educational measures that empower their users to recognise risks, combat misinformation, and use media in a critical and responsible manner.
Additionally, Law No. 74/2020, of November 19th**,** reinforces protection against harmful content, such as hate speech or material promoting violence. The law mandates audiovisual services to adopt measures to restrict access to such content, while simultaneously ensuring freedom of expression and access to information.

Romania

Penal Code of 2009 (Law 286/2009), Art 404
https://legislatie.just.ro/Public/DetaliiDocumentAfis/282902
The Penal Code of 2009 (Law 286/2009), Article 404, pertains to the Romanian legal framework and addresses the criminalisation of the dissemination of false information that may endanger public safety.
Find below the unofficial translation of the relevant article
"Communication of false information
Art. 404. - Communicating or spreading, by any means, false news, data or information or falsified documents, knowing their falsity, if this endangers national security, is punishable by imprisonment from one to 5 years."

The Law of Pre-university Education (198/2023), Chapter VI: Curriculum, in Article 85
https://edu.ro/sites/default/files/_fi%C8%99iere/Minister/2023/Legi_educatie_Romania_educata/legi_monitor/Legea_invatamantului_preuniversitar_nr_198.pdf
Article 85 of the Law of Pre-university Education (198/2023), located within Chapter VI on Curriculum, outlines key regulations related to the design and implementation of the educational curriculum in pre-university institutions.
Find below the unofficial translation of the relevant article.
"The major purpose of pre-university education is competence development, understood as the set of multifunctional and transferable knowledge, skills and abilities, needed for:(...)
f) compliance with the principles of ethics and integrity in the activity of the school, regarding the selection, use and correct citation of documentation sources, developing students' critical spirit in analyzing and retrieving the information used; (...) h) ensuring the ability to adapt and active participation in social, economic, political and cultural life in the context digital transformation; i) preparing the necessary skills for safe internet use; (...)
(2) The development of these competences shall consider: (...) c) use of online educational resources;
d) the use of innovative techniques and technologies in the teaching/evaluation/learning process; (...)"

The Law of Preuniversity Education (198/2023) defines media literacy/education in its Annexes (unofficial translation)*: Media education is the ability to critically analyze the information presented in mass media and social media and determine their accuracy or credibility. Media education includes a critical approach to both quality as well as accuracy of content, which emphasizes the ability to evaluate information, manage advertising on various media and smart use of search engines.*

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8.CONCLUSION

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Media and Information Literacy (MIL**)** is a crucial tool for addressing disinformation and equipping teachers to develop more critical and informed citizens. For teachers to apply effective practices in the classroom, ensuring that students are capable of recognising, filtering, and questioning the information they consume, it is essential to have a thorough understanding of European policies on digital literacy and disinformation (Bradshaw & Howard, 2019).

The media environment we currently face is characterised by phenomena such as "filter bubbles" and "echo chambers," which amplify polarisation and limit exposure to divergent perspectives. In this context, teachers must promote critical thinking and encourage students to step out of their comfort zones, seeking diverse information and analysing it rigorously (Sunstein, 2008). Identifying and understanding logical fallacies are fundamental skills that teachers should impart, helping students recognise when they are being manipulated (Wardle, 2019).

An effective technique for anticipating and neutralising disinformation has been "pre-bunking." This approach not only enables the identification of manipulations before they spread but also allows teachers to help students adopt a critical stance towards the information they encounter in their daily lives (Cook, Lewandowsky & Ecker, 2017).

To create an educational environment resilient to disinformation, collaboration between teachers, communities, and policymakers is essential. The continuous development of skills and the sharing of best practices ensure the sustainability of MIL strategies, promoting a collective and coordinated response to the challenges of the digital age (European Commission, 2020).

In addition, fostering an environment where students feel empowered to discuss and debate various perspectives can significantly enhance their ability to engage critically with information. Encouraging open dialogue in the classroom not only develops students' communication skills but also prepares them for real-world interactions where diverse opinions are often encountered. Such discussions can also demystify the sources of information, allowing students to analyse and critique the media they consume more effectively (Hollis & Wright, 2021).

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Moreover, the role of technology in education cannot be underestimated. Integrating digital tools and resources into the curriculum can enhance the learning experience and facilitate the development of media literacy skills. By utilising platforms that promote fact-checking, critical analysis, and collaborative learning, teachers can provide students with the tools they need to navigate the complexities of the digital landscape confidently. This technological integration supports the pedagogical aims of MIL and enhances students' engagement with relevant content (Selwyn, 2016).

In conclusion, Media and Information Literacy, supported by a critical and collaborative pedagogical approach, is crucial for building a more informed and aware society. Success in the fight against disinformation depends on effective education, underpinned by public policies that promote digital literacy at all levels of society (OECD, 2018; Cook et al., 2017).

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