European Commission

UPDATED

Guidelines for teachers and educators on tackling disinformation and promoting digital literacy through education and training

Manuscript completed in January 2026

Revised edition

Luxembourg: Publications Office of the European Union, 2026

Print	ISBN 978-92-68-32866-8	doi:10.2766/4467952	NC-01-25-183-EN-C
PDF	ISBN 978-92-68-32865-1	doi:10.2766/5220136	NC-01-25-183-EN-N

Acknowledgements

The revision of the guidelines has been carried out through the **Working Group on Updating the Guidelines for teachers and educators on tackling disinformation and promoting digital literacy through education and training**, convened through the European Digital Education Hub (EDEH). The Commission thanks following members for their expertise and commitment:

Ana María Pérez Moral
Antonia Nikou
Arminas Muse
Christina Löfving
Colin Kavanagh
Declan Qualter
Eva Lopez
Hans Martens
Irene Andriopoulou
İsmail Şan
Jessica Niewint-Gori
Livija Pribanić
Luis Mesquita da Fonseca
Marco Kalz
Maria Steger
Mikko Perälä
Nicola Bruno
Petra Bevek
Raluca Buturoiu
Sandra Troia

The work of the group has been guided by the **Steering Group**:

Sally Reynolds
Kari Kivinen
Juliane von Reppert-Bismarck
Vitor Tomé
Louise Heeran Flynn

These guidelines build on the work of the **Expert Group on Tackling disinformation and promoting digital literacy through education and training**, established by the European Commission and supported by consultants associated with ECORYS. We would like to thank the following members of the original Expert Group for their contributions:

Ahmet Murat Kılıç
Alina Bargaoanu
Arminas Varanauskas
Cassie Hague
Charo Sadaba
Claus Hjorth
Divina Frau-Meigs
Eleni Kyza
Gabriella Thinsz
Giacomo Mazzone
Irene Andriopoulou
Jens Vermeersch
Juliane von Reppert-Bismarck
Kamil Mikulski
Kari Kivinen
Norman Röhner
Onno Hansen-Staszyński
Sally Reynolds
Sandra Troia
Stacey Featherstone
Thomas Nygren
Veni Markovski
Vitor Tomé

Disclaimer

These guidelines are non-binding and are intended to support teachers, school leaders and education authorities in promoting safe, inclusive and trustworthy digital education environments, in line with European values and applicable EU legislation.

This text includes examples of digital tools, resources and initiatives, along with the names of the companies or organisations that provide them. These references are for illustrative purposes only, and do not imply endorsement by the European Commission. The authors have aimed to include freely accessible, widely used and diverse examples – especially those from Europe – wherever possible.

This document is intended to provide support to teachers and educators in teaching digital literacy and building resilience to disinformation among young people, including in the context of Artificial Intelligence. It is not intended to provide guidance on the enforcement of the EU Artificial Intelligence Act (Regulation (EU) 2024/1689).

Content

Acknowledgements 4

Summary 6

1. Foreword 8

2. Introduction 10

3. Using the Guidelines in education and training 11

4. Setting the Scene 13

5. Building digital literacy competences in the classroom and school: becoming digital citizens 20

6. Disinformation: what are we talking about? 24

7 Generative AI and Disinformation 32

8. Social Media Platforms and Social Media Influencers 37

9. Prebunking 44

10. Assessing and evaluating digital literacy in school and the classroom 49

11. Recommendations for school leaders and policymakers 54

12. Resources 58

Summary

These Guidelines, updated in 2026, are aimed at teachers at all levels of education who are keen to help their students enhance their digital literacy competences and to use these competences to tackle the ever-growing challenge of disinformation. They provide practical advice and suggestions that teachers can apply in their classrooms leveraging their own specialist knowledge and experience. They include several deep dives into topics of specific relevance including the nature of disinformation, the role of GenAI and Social Media Platforms and Influencers as well as descriptions of specific strategies to fight disinformation including prebunking.

Alongside tips and insights, the Guidelines also include several lesson plans which can be used by teachers to address disinformation. These Guidelines also include a series of recommendations to support school leaders and other policymakers to further promote digital literacy in classrooms and schools.

List of suggested activities in the Guidelines

Activity 1: Check out the rules concerning hate speech in your country 14
Activity 2: Find out if there is a code of practice for journalists 14
Activity 3: Create a class agreement 17
Activity 4: Explore multiple perspectives through various sources 18
Activity 5: Prepare questions for parents 19
Activity 6: Explore digital rights and principles for students 23
Activity 7: Trace your digital footprint 23
Activity 8: Analyse a piece of disinformation 25
Activity 9: Research why disinformation is created 26
Activity 10: Discuss media freedom 27
Activity 11: Use AI tools to debunk myths 33
Activity 12: Use AI to support critical thinking through simulations 34
Activity 13: Play the Teach the Robot! game - an example of Learning by Teaching 34
Activity 14: Carry out the Deepfake Challenge with your students 35
Activity 15: Ask students what platforms they use and why 38
Activity 16: Find out who the students follow online and why 40
Activity 17: Use critical thinking skills to test the veracity of influencers' posts 41
Activity 18: Run a debate on social media and social media influencers 42
Activity 19: Run a campaign for the school community 43
Activity 20: Name emotions 47
Activity 21: Discuss whether honesty matters 47
Activity 22: Learn to better understand algorithms 48
Activity 23: Assess students' ability to identify manipulative headlines 49
Activity 24: Assess students' attitudes towards information 50

List of tips in the Guidelines

Tip 1: Start with less controversial issues 15
Tip 2: Show empathy 19
Tip 3: Debrief students after the lesson 19
Tip 4: Take cues from your students 21
Tip 5: Highlight what students can do to reduce disinformation 26
Tip 6: Connect to human rights 28
Tip 7: What to bear in mind when using GenAI 33
Tip 8: Bias in, bias out 36
Tip 9: Check platform usage before class 38
Tip 10: Turn the checking out who students follow into a flipped classroom activity 40
Tip 11: Remind students to always think before you click 42
Tip 12: Remind students that social media is a shared space 42
Tip 13: Use age-appropriate examples and language 48
Tip 14: Use examples of disinformation from your own subject area 48
Tip 15: Make the fight against disinformation part of your regular teaching 48
Tip 16: Assess student research skills 52
Tip 17: Connect with universities 53
Tip 18: Explore local, national, or international funding opportunities 56
Tip 19: Update staff on policy initiatives related to digital literacy 56
Tip 20: Familiarise yourself with the terms in the glossary 57
Tip 21: Organise hackathons for school leaders 57

1. Foreword

Young Europeans live in a world where digital technologies are an integral part of their daily lives. The line between online and offline is increasingly blurred. As is, unfortunately, the line between truth and falsehood. Dynamic technological developments and geopolitical situations have made the online space more complex to navigate. Disinformation is rife. As are the numbers of actors willing to use it as a tool. Social media influencers gain trust among young people, shaping values and world views, while generative AI tools, including deepfakes directly challenge the democratic public square. Who is telling the truth? What's their agenda? Who is real? Each question can only be answered accurately once the skills to assess have been learned and applied.

That is why we have updated these *Guidelines for teachers and educators on tackling disinformation and promoting digital literacy through education and training*. They are designed to help teachers fight back in the best way – for and with the students who urgently need these skills. **Learning how to identify fact from fiction online starts with digital literacy.** From an early age, it is essential that European students develop critical engagement with the online world.

When the first guidelines were published, in October 2022, delivering on the Digital Education Action Plan, we aimed to offer hands-on support for teachers across the EU to facilitate learning about the complexity of the online world.

With this update, our goal is to extend our support to the broad and diverse teachers and educators' community and to respond directly to young people's online experiences, taking into account the latest technological and societal developments. We have included a number of new sections on topics such as generative AI, social media and influencers, pre-bunking as well as hands-on lesson plans. A dedicated section now also addresses policymakers and school leaders by offering further guidance on promoting systemic change.

We expect that these guidelines will be widely used. European citizens look to education to tackle the challenges to democracy. The vast majority agree that digital skills and digital literacy help in protecting us from being misled by disinformation online (80%). They think that all teachers should be equipped with the skills to help students in recognising disinformation online (89%)[1].

The European Commission is acting to address these concerns. Under the *Union of Skills*, the *Action Plan on Basic Skills* establishes digital and citizenship skills as part of the core skillset for succeeding in the 21st century. The *Preparedness Union Strategy* and *the European Democracy Shield* see digital and media literacy as central in building individual and collective strength against the risks for our democracy.

I am proud that we can now present these updated *Guidelines for teachers and educators on tackling disinformation and promoting digital literacy through education and training*. I want to thank the experts - teachers, teacher trainers, journalists, researchers, media literacy experts and innovators, who have

1 2025 Flash Eurobarometer on Future Needs in Digital Education https://europa.eu/eurobarometer/surveys/detail/3352

made this update practical and easy to use. These experts are part of the lively community of the European Digital Education Hub. I firmly believe that the guidelines can be instrumental in converting digital literacy into democratic strength.

And our efforts will continue with the Education Package, which we will table towards the end of this year. Through a new Basic Skills Support Scheme, strengthening not only digital skills but also the citizenship skills, we will double down our efforts to reinforce the foundational competences protecting and enriching our democratic society. Our upcoming EU Teachers and Trainers Agenda and the European Schools Alliances initiative will also contribute to achieve these goals

To all of you who are part of the digital education community and are passionate about empowering young people in the digital age – I invite you to put these Guidelines to good use, together with your students, in the classroom.

Pia Ahrenkilde Hansen
Director-General for Education, Youth, Sport and Culture

2. Introduction

Promoting digital literacy and building resilience to disinformation in classrooms and schools has never been as important as it is today. Both teachers/educators and students, irrespective of school level or school type, navigate an increasingly complex online environment where there is more to read, hear, and see than ever before.

This provides unprecedented opportunities to find information and communicate with others, both in and outside the school environment.

As teachers and educators, you are in an important position to help young people gain the competences they need to become lifelong learners in an increasingly digital world. These competences can also support young people in the role many of them play in intergenerational learning, where they help their parents and even their grandparents navigate the online world. Mastering digital skills and competences will help young people in your classroom become empowered, active citizens in the 21st century. These are learned competences and these Guidelines, published first in 2022 and then updated in 2026, aim to help you support your students[2] on this path. In this updated version, we have introduced new content on GenAI, social media platforms and influencers, and prebunking as well as a Section specifically aimed at reaching out to policymakers. We have also added a new Section with sample lesson plans for you to use in your classroom.

While we indicate different educational levels (e.g. upper secondary, lower primary, Special Educational Needs (SEN) or Additional Educational Needs (AEN)) in the Guidelines when referring to specific activities or in the lesson plans, it is important to recognise that promoting digital literacy through education and training should start as early as possible. Many of the activities can be carried out with lower primary school students and teachers are encouraged to adapt the lesson plans to work with their class. It is important that students are made aware of how they can tackle disinformation even at an early age.

The information that comes into your classrooms and into the homes of your students stems from a huge variety of authors, sources and outlets, each with their respective points of view and, in some cases, agendas. This changing media and information landscape has created the need for students to better access, create, manage, understand, integrate, communicate, evaluate, and disseminate information safely and responsibly using digital technologies. These Guidelines refer to these abilities as digital literacy. For you as teachers/educators, it is an important task to facilitate this process.

While the possibilities associated with the ever-expanding digital world are extensive, these new developments also pose many challenges and risks. Inaccurate information spread intentionally or unintentionally has reminded us how vulnerable democracies can be in the digital age. Healthy democracies depend on open deliberation, public participation, access to information, freedom of expression and on a system of checks and balances. Democracy can be undermined when sources of information are compromised by misinformation, disinformation and malinformation. In these Guidelines, we focus especially on disinformation, referring to verifiably false or misleading information that is created, presented, and disseminated for economic gain or to intentionally deceive the public, and that may cause public harm. However, many of the suggestions for helping your students understand the phenomenon of disinformation and the dynamics surrounding it are equally applicable to address misinformation and malinformation.

2 We use the term 'student' throughout the Guidelines to refer to both pupils and students, in both primary and secondary level of education.

3. Using the Guidelines in education and training

These Guidelines offer concrete, hands-on guidance for teachers/educators. It is important to state at the start that it is not our intention to offer prescriptions or axioms but rather to provide practical support for teaching in classrooms and in similar educational settings.

Whether you are looking for clear explanations of technical concepts, class-exercises for fact-checking, suggestions on how to encourage 'healthy' online habits, or for ways to assess your students, there will be something here for you. For ease of reference, a Glossary with key words is included in Section 12 on Resources.

Providing guidance for promoting digital literacy and tackling disinformation is not always an easy task, due to the fast-changing nature of technology and the media landscape. These Guidelines do not offer solutions to all the issues that you may face in your classroom but focus on contributing to the following objectives:

1. Providing Insight and useful knowledge about the dynamics and manifestations of disinformation.
2. Fostering an understanding as well as a roadmap as to how digital literacy can be achieved.
3. Sharing information about how digital technologies can be used critically and responsibly.
4. Taking a deeper look at several key developments in the field of digital literacy, namely GenAI, social media platforms and influencers, and prebunking.
5. Providing Insight into how the digital literacy competences of students can be assessed.
6. Addressing school leaders and policymakers' role in making a systemic change in the field.

Here is how we have structured the Guidelines to meet these objectives:

Section 4 ***Setting the Scene*** introduces guidance on how to make classrooms and schools more conducive to addressing disinformation and digital literacy.

Section 5 ***Building digital literacy competences in the classroom and school: becoming digital citizens*** examines specific barriers and challenges, learning objectives, and inspiring practices for you to consider applying associated with these topics.

Section 6 ***Disinformation: what are we talking about?*** looks at the various dimensions of disinformation and how best to address it. This Section examines why disinformation is created and how it is spread.

Section 7 ***Generative AI and Disinformation (New)*** takes a deep dive into the topic of GenAI and its role when it comes to disinformation. This new Section aims to help teachers better tackle disinformation that is enabled by AI and also learn how AI can help in tackling disinformation.

Section 8 ***Social media platforms and influencers (New)*** takes a closer look at how and why we see content online, as well as exploring how teachers can support students to engage safely and responsibly online.

Section 9 ***Prebunking (New)*** examines the value and impact prebunking as a technique can have when introduced in the classroom.

Section 10 ***Assessing and evaluating digital literacy in school and the classroom*** addresses questions on how to assess students and ways to evaluate the digital literacy initiatives that your school might be using.

Section 11 ***Recommendations for school leaders and policymakers (New)*** aims to provide clear, actionable guidance to empower education policymakers and school leaders in fostering digital literacy and building resilience to disinformation.

Section 12 ***Resources (New)*** contains a number of inclusive pedagogical strategies, several sample practical lesson plans that you can already use as well as a glossary of terms you will encounter in this publication.

Throughout these Guidelines you will encounter coloured boxes. These have been created for your reading convenience:

- **green** boxes provide practical teaching and learning tips such as how you might help your students verify sources or engage parents.
- **blue** boxes include suggestions for activities you can use in your teaching such as an activity you could run to help your students decide between a fact and an opinion, or to start a discussion about the economics of disinformation.
- **orange** boxes provide useful insights, examples, background notes and considerations worth bearing in mind such as examples of questions you might use in assessing your students' skills in conducting online searches or key cognitive and emotional mechanisms that can prevent (young) people from accepting evidence that runs counter to their opinions.
- **red** boxes contain cautionary notes on topics such as discussing conspiracy theories and the types of deceptive content you should watch out for.

For whom are the Guidelines intended?

These Guidelines are mainly for primary and secondary school educators, but they can also be used by parents, caregivers, school leaders, and policymakers. The advice may need adapting to individual contexts. Terms like 'educators' and 'classroom' are used broadly, encompassing both formal and non-formal learning environments. While intended for classroom use[3], the Guidelines also support a whole-school approach, encouraging collaboration with colleagues such as librarians, psychologists, and social workers.

Teachers in Europe are generally very well prepared for their role in the classroom, and the content of what they teach is of course already laid down by the relevant ministries and agencies who are responsible for the curricula in their own country or region. Our intention in writing these Guidelines is therefore not to provide instructions on how to teach or what the specific content of lessons should be. What we hope to achieve is to provide practical guidelines on the specifics of tackling disinformation in the classroom and the digital literacy skills and knowledge required to do so effectively, both for the teacher and for the student. As digital literacy gains importance, whole-school approaches - engaging leadership, families, media professionals, and the wider community - are increasingly emphasised and referenced throughout.

We hope these Guidelines support your work and contribute to raising a generation of informed, empowered European digital citizens.

3 Throughout the Guidelines, "classroom" is used in a broad sense to also include other learning settings such as outdoor education spaces, libraries, workshops, online or blended learning contexts and others.

4. Setting the Scene

In this Section you will find guidance on how to create a learning environment that is conducive to helping students become digitally literate along with tips and guidance on how to overcome potential challenges that you as a teacher/educator may face.

The advice offered relates to different moments in the educational cycle – **before, during and after classroom activities**. You will also find several lesson plans in the resources Section that may be helpful in planning your own lessons related to the contents of this section. Together with your own expertise and in-depth knowledge of your students, we hope that these resources will help you create purposeful learning experiences for your students.

Teaching and learning in the digital school environment

It is important to emphasise from the start that you do not need to be a tech guru to help your students become digitally literate. Regardless of the technology available in your classroom, you can engage your students in the wider debate about the many opportunities and risks associated with the digital universe, and about the usefulness of assessing the credibility of the information they encounter.

Like any effective teaching, it is important to create a safe place for students to express their opinions and engage in active learning. Students appreciate being seen and heard, both by their peers and by their teachers, and they recognise the importance of being empowered to become more literate in a digital world in which they might already be quite conversant. This digital world potentially allows students the opportunity to access a great deal of information, hear multiple opinions on a topic and to communicate across geographical, linguistic, cultural, and religious barriers as well as making the best use of AI based and other tools and services in a positive and ethical way. Yet, students sometimes lack the competences and life experience to take full advantage of what is being offered and to identify potential threats.

You undoubtedly already have a repertoire of approaches that you use when working with your students on challenging and sometimes controversial issues. **Insight 1** below presents some educational approaches that you might find useful in the digital literacy field.

Insight 1: Teaching and learning in the digital school environment - some useful approaches

The following (non-exhaustive) list is intended to highlight the potential of student-centred strategies that shift authority and decision-making towards the learner, while the teacher takes on the role of tutor or coach, guiding and supporting progress. Each approach promotes student agency where learners take responsibility for engaging with new content - and fosters transversal and non-cognitive skills such as collaboration, metacognition, resilience, and digital fluency, which extend far beyond any single subject area.

Flipped Classroom is an approach that involves students completing readings or other activities outside the classroom and then using classroom time for more interactive, discursive activities.

- **Blended teaching** is an approach that involves a significant amount of online learning as well as in-person classroom teaching.
- **Project-based learning** is a form of learning by doing and is an approach based on the idea that we learn more when we actually 'do' the activity which is introduced and facilitated by the teacher and/or carry out a project that engages students in doing project work directly related to the content of the lesson.
- **Gamification and game-based learning** can improve educational outcomes, if properly designed. This approach offers learning that matches the digital behaviour of many young people. It can also provide additional motivation and makes teaching and learning, creative and inspirational. Gamification and game-based learning tend to be flexible, transferable to any context, and can quite easily be adapted to any school subject.

They can also be used for complex issues that are easier "grasped" through a game.

Note: You will find further evidenced-based inclusive pedagogical approaches and strategies at the start of Section 12 Resources.

Digital tools typically offer students a relatively large degree of freedom when, for example, they use digital devices to access apps, communicate on social media or browse the internet. Given this freedom, it is also possible for students to access an immense amount of information, which benefits their education. Yet, it can also lead to them engaging in irrelevant, inappropriate, and potentially dangerous digital behaviours. A key challenge for you as teachers/educators is to help students act proactively to find relevant information, to steer away from harmful behaviour online and to help them acquire the self-knowledge and skills to do this independently. It is worth noting, however, that this is a shared responsibility between teachers/educators, parents/family and the wider school community.

It is important from the start to gain an understanding of the sources of information, including news your students are accessing and to discover which social media they use, if any[4]. This will help you to gain an Insight into the diversity present in the classroom, in terms of students' backgrounds, opinions and worldviews. This will also enable you to set ground rules for discussion (for instance no personal attacks and 'owning opinions' by using the 'I' form)[5]. It may take some coaxing to get this information and sometimes the responses need to be anonymous. It is also useful to assess to what extent students already understand issues such as privacy settings, digital community rules and regulations, as well as what is allowed and not allowed in terms of free speech in your country and what constitutes hate speech. Teachers need to be aware of the child protection and child safeguarding protocols that are relevant within their country and context should students disclose that they are experiencing abuse/have been exposed to abuse/are in danger/are a danger to others. The European Safer Internet Centres (SICs) operational in EU member states are a good source of such information[6].

Activity 1: Check out the rules concerning hate speech in your country

The rules regarding what constitutes 'Hate Speech' vary by country. Set your students the task to find out for themselves if there are any laws related to what you legally can and cannot post online. See if there are examples of people who have been prosecuted for hate speech in your country and discuss the ways in which such cases are identified and dealt with.

Given the potential for students to encounter false and potentially harmful information online, it is best to be prepared to engage in a conversation with them about information that might be potentially controversial for them, their peers, or their community. Then you can have more general discussion with students about what they have seen in the media recently that might be controversial.

It is also a good idea to have a discussion about traditional, sometimes referred to as 'legacy' media in your country and the different radio, TV and press channels that exist. Students are often interested in checking out how journalists work and the ways in which they go about researching and producing news stories. as well as the ways in which traditional journalists work.

Activity 2: Find out if there is a code of practice for journalists

Most countries have a code of practice or ethical guidelines which journalists working in the traditional media are expected to follow. Have your students check this out and present the rules and practices that journalists are expected to respect, better still, invite a journalist to come and give a talk about this to your students. Check out the European Federation of Journalists website for links to unions of journalists in all member states.[7]

Consider...

- The special needs, concerns, strengths, and weaknesses of the group of students you are planning to work with and use these as a starting point for learning.
- That young people learn extensively from each other. Peer learning strategies can be effective across the entire educational range, also when using digital technologies.

4 Also taking into consideration the age-limits for social media usage that may apply in the local/national context.

5 Examples include: 'I think that...', I believe that...', I feel that...', 'I agree that...'

6 https://better-internet-for-kids.europa.eu/en/sic

7 https://europeanjournalists.org/members/

- Using current local, national or world events as a trigger for activities. Usually, the more immediate the information, the more interesting and the more motivated students will be, particularly older students.

Addressing controversial issues

Addressing controversial issues can enrich learning and promote critical thinking when carried out thoughtfully. Which topics do you find most controversial to teach in your classroom? What about your colleagues? What are their experiences teaching about controversial issues? Can you share useful resources with each other? Can activities be broadened in a collaborative manner across school subjects? Can 'experts' be invited to present in the classroom or in assemblies (either in person or remotely)?

You can best judge whether you keep discussions in the classroom light or engage your students at a deeper, more profound level. This will also depend on the students' age and your previous experience tackling controversial issues. Interactive methodologies can help create the kind of atmosphere that will benefit the class when discussing controversial issues. Such methodologies include silent discussion, opinion lines, active listening activities, fishbowl discussions, complex instruction, role plays, and cooperative learning. Such methodologies also help to engage students who might otherwise be bored or disinterested.

Tip 1: Start with less controversial issues

Most experienced teachers agree that it is best to avoid controversial issues when starting to tackle disinformation in your class - better to begin with issues and topics that are less likely to produce an emotional or polarised set of opinions.

Cautionary Note 1: Extra care needed when dealing with controversial Issues

It may well be important and necessary to discuss controversial Issues with your students, but they will probably require additional care and preparation time. Examples of such issues include:

- Polarisation
- Cancel Culture
- Past and present histories of injustice
- Crime and punishment
- Gender-related and sexual diversity issues
- Migration, minorities, racism, and religion
- Online discrimination
- Climate change and global warming
- Colonialism, slavery, antisemitism, Holocaust denial
- Sensitive national topics

Before the activities

Engage with school stakeholders

Before you start, it is a good idea to reach out to others in the school community to outline your plans. This includes discussing your plans with the school leadership, communicating with parents through established school-parent channels and coordinating with, where available, the school psychologist or school social worker in case specialist support is needed.

Get to know the digital literacy playing field

A good starting point is to gain insight into the school community's media habits as this can provide opportunities to build on already existing patterns. This can provide opportunities to build on already existing patterns. This can be done by attending and communicating at school-community events, monitoring the local media and other popular media, and through discussions with colleagues, parents, and students. Certain sub-sections of communities might have radical (in-group) opinions that can unexpectedly be expressed in the classroom. It is useful to be aware of these sensitivities.

Check out available resources

There are many initiatives that have taken place in recent years that can benefit your teaching and that can enrich student learning. For example:

- International networks of teachers and educators interested in teaching about digital literacy, media literacy, news and information literacy and addressing disinformation.
- National and regional educational authorities and agencies with specialised units producing teaching resources that you can use in your own language.
- Under the European Commission's Better Internet for Kids (BIK+) strategy, the Safer Internet Centres across Europe provide training, awareness activities, helplines, guidance and resources for students, teachers and parents about different topics, including tackling disinformation and enhancing digital literacy skills. These can be found on the BIK portal[8] in all EU languages.
- Other EC supported platforms such as the European School Education Platform[9] and the European Digital Education Hub[10] (EDEH) are worth checking as you will find not only a lively community of people interested in the topic of digital literacy as well as resources and materials that you may find useful.
- The European Commission's eTwinning community provides teachers with a safe, collaborative platform to design and run projects on digital literacy and tackling disinformation. Through joint and cross-border activities, students can compare media narratives, analyse sources and develop digital literacy together and in this way gain first-hand experience of tackling disinformation in an international context, fostering awareness and intercultural understanding. Teachers benefit from shared resources ideas and peer support.
- International organisations like UNESCO, OECD, the Council of Europe, the International Telecommunications Union (ITU), UNICEF, and the EBU who have developed resources, networks and guidelines that can enrich your work.
- National and local initiatives involving professional journalists and journalist organisations.
- Civil society organisations including NGOs specialised in the topic of digital literacy and the fight against disinformation which often produce classroom resources.
- Local libraries, public archives and cultural institutions, many of which provide resources that you can use in the classroom.

Insight 2: The pros and cons of involving external actors.

It can be useful to involve external experts such as professional journalists, librarians, NGOs, reputable influencers, researchers and platform operators in your lesson.

Potential benefits of involving external actors:

- They bring additional knowledge and expertise
- They provide opportunities for teachers and educators to build networks with experts
- They bring experience of what works well with students
- They can provide added interest for students

Potential disadvantages

- May mean more administration
- May require parental consent
- May limit flexibility in planning
- May induce economic costs
- Third parties may try to promote commercial, data gathering or political interests

Consider...

- Connecting school activities to key international and national networks and events. At the international level this can include Safer Internet Day[11] (every second Tuesday of February), International Fact-Checking Day (2 April) or awareness campaigns such as the UNESCO Global Media & Information Literacy Week held every October.
- The European-wide eTwinning network also allows teachers/educators and schools to connect to others around Europe and even published an eTwinning[12] book with good practices on the topic.
- Seeking local, national and/or international funding for your initiatives. At the European level this includes the Erasmus + Programme and the European Solidarity Corps.

8 Better Internet for Kids / Teacher corner

9 https://school-education.ec.europa.eu/en

10 https://education.ec.europa.eu/focus-topics/digital-education/action-plan/european-digital-education-hub

11 https://better-internet-for-kids.europa.eu/en/saferinternetday

12 Teaching media literacy and fighting disinformation with eTwinning - Publications Office of the EU.

Cultivating a safe learning classroom atmosphere

In school, students are learning important, and often challenging information about themselves, the world around them and others. This can arouse strong emotions, reactions and feelings of anxiety, embarrassment and vulnerability. Therefore, it is important for all students to feel that they are learning within a safe environment, where they can ask questions, and learn and participate without feeling singled out or embarrassed. As a teacher you know that a sense of safety and trust can be achieved in your classes in many different ways based on your knowledge of your students.

It may be helpful to establish a **class agreement** before you begin, as some topics can be difficult or challenging for some students, depending on their life experience. Establishing ground rules, by having a Class Agreement or Respect Agreement, may make it easier for these students to safely participate. Such agreements can be used in any class but are particularly useful when it is likely that sensitive topics will be under discussion.

Activity 3: Create a class agreement

Lead a class discussion which addresses the following key areas:

- **Set clear expectations** - to get started, brainstorm possible ground rules with the group. Ask 'What would help to make you feel comfortable and safe participating in this class?' and 'What would make it uncomfortable for you and prevent you from participating?' i.e. what is expected of the students and the teacher. Prompts for ground rules might include: 'I will use respectful language and the correct terms for the things we will be discussing rather than the slang terms, as some people can find that offensive. If I am unsure of the correct term, I can ask the teacher'.
- **Outline the consequences** - what are the consequences of disrespecting the agreement within the class?
- **Address confidentiality and disclosures** - It is important to create awareness about protecting privacy and sharing in an appropriate manner that doesn't leave students feeling vulnerable or exposed. Where students need to follow up and talk privately after class (with you or another member of staff) then this can be mentioned and supported.

The specifics of the agreement may vary from school to school and even from class to class, depending on the age group and the particular needs of the students. When creating such an agreement the following suggestions may be useful:

- Ground rules are stated in the positive, use 'I' statements and should be few in number.
- Students understand how keeping these rules will help everyone feel safe and respected in the classroom.
- The ground rules should be referred to regularly in order to positively reinforce them and they may be revised, or if necessary, renegotiated.
- To protect privacy, students should refrain from using names when retelling stories.
- Reassure students that they do not have to share their own personal stories in class.
- Let the students know what topics you will be covering in advance.
- Students need to know that there are limits to confidentiality, i.e. teachers cannot give unconditional guarantees of confidentiality. Explain that in certain circumstances, as their teacher you may need to seek advice or tell someone about an issue raised in class. Students need to know that a teacher is obliged to share information with staff members with safeguarding responsibilities if they think any student is at risk or in danger.
- Students can work together on creating a poster version of the agreement and this can be placed in a prominent place within the class.

Maintaining professional boundaries

Teachers know that maintaining professional boundaries is essential and particularly pertinent when addressing sensitive and challenging content. A key aspect of maintaining professional boundaries includes a willingness for teachers to admit that they are not (and cannot) be experts on all matters and importantly, knowing when to call upon the expertise of others. This is especially pertinent in the case of child protection and safeguarding issues. Teachers should be aware of the reporting protocols in place within their specific context and jurisdiction and act in line with them.

Consider...

- Potential student-specific sensitivities, community sensitivities and societal polarisation; also, your own stance, emotions, and sensitivities.
- Collecting initial ideas and opinions from students before discussing a topic. This can be done anonymously if necessary.
- If there are some students that could potentially be challenging to manage, involving them in the preparation of the session and giving them specific tasks can be helpful.

- Starting with one-on-one interactions (teacher-student; student-student), then move on to build interaction within smaller groups, and only then move towards whole class interactions.
- Introducing role-playing, storytelling and other narrative forms to help build a good atmosphere in the classroom.

Activity 4: Explore multiple perspectives through various sources

This activity is organised in three separate steps. You might like to spread these steps over different lessons.

- **Step 1:** Find an event in history that can be interpreted in different ways, depending on the two (or more) sides involved. Examples include various wars of independence, the US Civil War, World War One, the conflict in Northern Ireland, the war in the Balkans in the 1990s. Present students with two separate short narratives (or alternatively have them find two separate narratives online) regarding the conflict. Have each group find 5-10 sources online that provide information regarding the conflict - if possible, from different sides (they might need assistance). Have them briefly present these sources to the class. Compare and contrast them. Present a statement such as: 'The main cause of the conflict was a failure on the part of X to grant full human rights to the people living in Y'.
- **Step 2:** Two groups are created: those that agree with the statement and those that disagree. It is easiest to assign group membership - half become the 'Agree 'group and half the 'Disagree' group. Each student now uses the 5-10 online sources their group has identified to develop two strong arguments either in favour or against the statement. The students gather and write out their evidence. They initially do this as individuals and then work in smaller like-minded subgroups (approx. 4-6 persons per group) and share their arguments. Each subgroup creates a digital poster with their five main arguments.
- **Step 3:** The groups refine their posters and present them to the larger class. All students rate each of the various arguments (from 1 to 10) and discuss why they scored the arguments this way, especially based on the evidence they found in the sources. The scoring can also be done using online tools. Reflect on whether there is a way to integrate the arguments and counterarguments? Is there an in-between solution? Can they reach consensus?

During and After the activities

During classroom activities it is important to strike a balance between ensuring an open classroom climate and a safe space. In an open classroom climate, students can say what is on their mind and freely share their views and opinions. However, an individual or a group of students may get offended or disturbed by remarks made by others in that some students may have radical opinions that are unexpectedly expressed in the classroom.

Consider...

- Setting an example. If you are comfortable with this, share some personal examples of how you develop your digital literacy and/or have been exposed to disinformation.
- Monitoring ingroup-outgroup tendencies. Young people and adults sometimes see each other's digital media usage as 'inappropriate' and can use this as a basis for negative stereotyping of the other group.
- Checking in with individual students as much as possible, especially when discussions about controversial issues take place and when students exhibit non-appropriate behaviour.
- Providing different mechanisms for students to provide feedback about their experiences in the class when talking about disinformation, consider providing an opportunity for this to be anonymous if that fits your teaching approach.
- Research shows that participation can be a more effective approach when countering disinformation than persuasion and so avoid trying to dissuade students from factually incorrect opinions, better to work with them on participatory class activities related to the topic under discussion.
- Conducting a more formal assessment of the knowledge and skills gained by the students and/or an evaluation of the learning and teaching methods used (see Section 10 on assessment).

Activity 5: Prepare questions for parents

Ask your students to prepare a set of five questions that they can provide for their parents and other adults on the management of their online communication to help them be safer and resilient to disinformation. This is an activity more suited to older students.

Tip 3: Debrief students after the lesson

Debrief with the students about their thoughts, experiences, and emotions. Ask what they have learned and how they would like to build on what they have just done.

Tip 2: Show empathy

In view of fostering a safe learning space, it is important to not isolate students who admit they believe in certain types of disinformation, such as a prevailing conspiracy theory. They are taking a risk if they admit to believing in certain types of disinformation. It sometimes helps to have students first talk about 'somebody I know …' to make admissions less personal and make the student less vulnerable to peer criticism.

5. Building digital literacy competences in the classroom and school: becoming digital citizens

What is digital citizenship, and why is it important?

Digital citizens…

- Possess the skills, attitudes, and behaviours to participate safely, effectively, critically, and responsibly in the online world.
- Harness the benefits and opportunities of the online world while being resilient to harm.
- Use digital technologies to support their active citizenship and social inclusion, collaboration with others, and creativity towards personal, social, or commercial goals.
- Are aware of key human rights values and how these values are similar online and offline (freedom of opinion and expression, right to privacy, participation, dignity, etc.).
- Adopt a responsible, healthy and balanced approach to the use of technology.

Digital citizenship is a learned skill set. In digital society, like in 'offline' society, there are some core concepts, tools, and competences that your students need to be aware of to promote their learning. Students also need to gain access to the tools required to develop their digital literacy competences. You play an important role in that process. And this skill set needs to evolve according as digital tools and services evolve. The rapid expansion of AI means that students need to increase their skills in relation to AI particularly given the fact that AI is increasingly used for the rapid production of disinformation.

Being digitally literate means knowing how to use digital technologies to *access, manage, understand, integrate, communicate, evaluate, create, and disseminate* information - in safe and appropriate ways.

Also, digital literacy can help students actively participate, learn, build fulfilling careers, and interact in today's society. As such, digital literacy is a prerequisite for the development of active and empowered digital citizenship. Being digitally literate also implies, to a certain extent, the ability to reflect on our own thought processes (metacognition) and how and why we take certain decisions.

Students are digitally literate to various degrees. For example, some may struggle to read and write, but are very adept in consuming and producing digital content, such as sending voice notes or taking pictures. Others may struggle with accessing or using technologies, making them harder to reach and communicate with when teaching remotely.

Consider…

- Inviting your students to share how technology and social media can create positive change and positive spaces in the community and society in which they live.
- Discussing with your students the skills required for the future labour market. This may include a digital skill set (such as coding, understanding algorithms, computational thinking, and other digital skills) and soft skills (e.g., interpersonal) in a world where human-to-human interaction is valuable.
- Asking students to find accurate online information about citizenship issues (e.g. democracy, local elections, human rights, and climate change) and identify appropriate spaces for online participation.
- Paying attention to digital wellbeing, namely how digital tools benefit or negatively impact the health (mental or physical) of your students, and the relationships they have with their peers and family.

Getting started with teaching digital literacy

Teaching and learning digital literacy are important in contemporary society. Nevertheless, you may feel hesitant to guide your students in developing these skills, because the topic is new to you, or because your students seem technologically savvy already. However, you do not have to be a tech expert to teach digital literacy as digital literacy goes far beyond knowing how to use a device.

Insight 3: Distinguishing daily use of technology from digital literacy.

Not all young people know a great deal about technology or have the confidence to use digital technologies. While some have well developed digital skills and competences, others have low levels of digital skills and struggle to carry out even basic digital tasks. Even to young people - the digital world is often difficult to understand. They might enter into echo chambers but rarely would know how they get there. They may have technologies as part of their daily lives but not understand how they work or why algorithms show them certain content or encourage them to continue scrolling. Students do not always need technical support, but they often need someone who can help them navigate through the abundance of information they encounter on a regular basis, and also help them distinguish rumours from knowledge, and truth claims from evidence.

Consider...

- Being open about the fact that as a teacher or educator you do not and cannot know everything.
- That you are well placed to offer necessary context, prompt critical reflection, offer support. You are also in a good position to redirect when necessary to experts in the support ecosystem such as the Safer Internet Centres.
- Discussing and practicing online behaviour with your students, and how to become a responsible citizen inside and outside their classrooms.
- Highlighting how certain social movements such as the Arab Spring and the #metoo movement all started through social media.

Tip 4: Take cues from your students

Students are faced by online challenges every day (a mean message; a privacy conundrum; an access issue; hate speech; etc.). Let their everyday experiences guide the topics of lessons and make them relevant and hands-on. This can create an atmosphere of authenticity and trust in the classroom.

Digital Literacy Learning Objectives

The table below of specific learning objectives for digital literacy is relevant to primary and secondary levels and is based on thematic strands. It takes into account established frameworks such as the European Digital Competence Framework (DigComp)[13] and the Finnish New Literacies learning outcomes[14]. It has been adjusted to accommodate contemporary concerns including GenAI and Social Media Platforms and influencers.

13 https://joint-research-centre.ec.europa.eu/projects-and-activities/education-and-training/digital-transformation-education/digital-competence-framework-citizens-digcomp_en

14 https://okm.fi/en/new-literacies-programme

Thematic strand	By the end of primary / lower-secondary education, learners can… (with appropriate guidance)	By the end of upper-secondary education, learners can… (independently and responsibly)
Finding information online	• Use basic keywords, filters and voice search to locate information. • Recognise that search results and video queues are ordered by algorithms and identify sponsored or promoted content. • Seek support when results appear misleading or inappropriate.	• Plan multi-step search strategies using operators (and / or, quotation marks) across various search engines, databases and AI tools. • Explain how ranking and recommendation algorithms influence visibility of information and adjust search approaches to obtain balanced results.
Judging credibility and AI-generated content	• Identify who created a website, post or video and distinguish fact from opinion in influencer content. • Detect obvious AI-generated fakes (e.g. deepfakes, auto-generated text) and ask for verification of surprising claims.	• Apply systematic source-criticism to human- and AI-generated material: fact-check, examine references, cross-compare with trusted sources. • Distinguish misinformation, disinformation and manipulative techniques; report suspicious or harmful content via appropriate channels.
Creating and sharing digital content	• Produce short messages, images or presentations using approved assets and suitable share settings • Co-create a simple 'Using Social Media Safely' checklist for classmates.	• Design and refine rich digital products (video essay, podcast, interactive web page) and an authoritative safety pamphlet for the school community, selecting correct Creative Commons or bespoke licences for all human- and AI-generated elements.
Copyright, licensing and ownership	• Acknowledge that creative works, such as music, photos, stories, and videos belong to their creators. Understand that work created by AI should be labelled, so people know where it came from.	• Locate openly licensed resources, apply or assign licences to own work, and respect legal exceptions (quotation, parody, educational use) when incorporating third-party or AI-generated materials.
Privacy, data and algorithms	• Use strong passwords, seek permission before sharing personal data, and recognise signs of secure connections (lock icon, 'https'). • Notice when personalised recommendations feel intrusive.	• Review privacy settings, manage app permissions, enable two-factor authentication, export or delete platform data, and analyse how tracking and recommender algorithms shape personal feeds and digital footprint.
Digital well-being and online behaviour	• Name favourite apps and games, describe positive and negative aspects, and follow basic safety protocols online, including reporting harmful content.	• Interpret screen-time and activity logs, evaluate persuasive design features (infinite scroll, notifications), balance online and offline activities, and model ethical, critical and responsible engagement with AI-mediated media for peers. Know how to recognise, react to, and report harmful content.

Activity 6: Explore digital rights and principles for students

Ask your students to first come up with their own set of digital rights and principles. You can then compare what they have come up with during the lesson to the 'Declaration on European digital rights and principles for the Digital Decade'[15] which was signed by the European Parliament and the Council in 2022. A children-friendly version is also available[16]:

Among other rights proposed, the declaration stipulates that:

- Children and young people should be empowered to make safe and informed choices and express their creativity in the online environment.
- Children have the right to be protected from all crimes, committed via or facilitated through digital technologies.
- Everyone has the right to the protection of their personal data online. That right includes the control on how their data are used and with whom they are shared.
- Everyone should have access to digital technologies, products and services that are safe, secure, and privacy-protective by design.
- Everyone has the right to freedom of expression in the online environment, without fear of being censored or intimidated.

Activity 7: Trace your digital footprint

- Do some research together with your students about digital footprints and discuss to what extent your footprints are actively or passively created. Try to find out to what extent your data travel to third parties across or beyond the education landscape. Reflect together with your class on the benefits (e.g. optimisation, personalisation) and the disadvantages (violation of privacy) this may have, and how students can best manage their presence online.

15 https://digital-strategy.ec.europa.eu/en/library/european-declaration-digital-rights-and-principles

16 European Declaration on Digital Rights and Principles | Shaping Europe's digital future

6. Disinformation: what are we talking about?

Disinformation is generally created, presented, and disseminated for economic gain or to intentionally deceive. The following examples give an idea of the kinds of disinformation that students are confronted with both inside and outside the classroom. In each of these scenarios there is an intention to deceive and to manipulate people's opinions, emotions, and actions.

1. Claims that unproven treatments can cure serious conditions such as cancer, that using sunscreen is related to vitamin D deficiency or that certain so-called 'miracle' diets can help you to lose weight.
2. False narratives such as accusing European institutions of planning to ban cars, taxing pets, and stealing citizens' savings with the aim of financing wars.
3. Disinformation about climate change often related to extreme meteorological events such as wildfires destroying homes, floods affecting large areas or heatwaves causing significant numbers of deaths.

Addressing disinformation

As students develop their social identities and construct their worldviews, they encounter a wide range of information, some of it helpful and enlightening, and some of it false, deceptive, and manipulative. In the 21st century much of this information is online or communicated through social media.

In today's world, disinformation can spread significantly further, faster, deeper, and more broadly than real information especially in view of the misuse of artificial intelligence. Check Section 7 on Generative AI (GenAI) for more information and advice on how you can equip your students with the skills and knowledge they need to deal with disinformation created and distributed through the misuse of GenAI.

Disinformation can potentially cause harm to individuals, groups, and society. It can also take many forms. Its impact can vary in terms of importance from being relatively harmless, to targeted information manipulation aimed at demoralising the population, dividing society, undermining trust and confidence in one's judgement or even discrediting state institutions during conflicts.

However, a key characteristic of all disinformation is that fiction, false information, and opinions are promoted as fact and 'the truth'. Disinformation also relies quite often on provoking an emotional response. Such a response, be it fear, shock or anger, can often cloud the recipient's judgement and result in them spreading disinformation without taking the time necessary to check if what they are spreading is true. Detecting the extent to which emotion plays a part in the spread of disinformation is a challenge as people can often react in very different and unpredictable ways to the same information. Such reactions depend often on the background and current emotional state of the individual, making it difficult to judge how different people will react to different items of news or information.

Cautionary Note 2: Watch out for these types of deceptive content

- **False attribution:** Authentic images, videos or quotes are taken from other events.
- **Fabricated content:** Content that is fabricated, sometimes combined with real content.
- **Imposter sources:** For instance, websites, blogs, or accounts that pose as a well-known brand or person, or as a (school) friend.
- **False connection:** The content does not match the headline/captions.
- **False context:** The information conveyed is basically accurate but in an inaccurate context.
- **Doctored content:** Content, such as statistics, graphs, photos, and video have been modified or doctored. This includes cheap fakes and deepfakes.
- **Weaponised malinformation:** Exaggerated, blown out of proportion facts.
- **Conclusions based on rumours:** Hard conclusions based on Information presented as 'rumours'.

Characteristics of disinformation

Disinformation can appear in many contexts and on many different platforms. Some of it is specifically aimed at and designed to influence young people. Common characteristics of disinformation are that it:

- Speaks to the emotions of the targeted person. This makes it harder for the person to think logically and critically.
- Attacks the opponent - promoting 'Us versus Them' views of reality.
- Simplifies facts and excludes the context, repeating an idea over and over again. Ignores the nuances of facts by presenting only one side of something.
- Manipulates images in various ways, such as retouching and cropping which is getting increasingly more difficult to spot due to AI (see the section on GenAI for more information).
- Isolates pictures from their original contexts and combines and/or manipulates them with other pictures, music/sounds, and texts to create new meanings.
- Makes use of famous people and celebrities that the target group admires.
- Is resistant to evidence that attempts to refute it.
- Is sometimes combined with non-harmful content (cute cats, jokes) to make it seem harmless.
- Uses misleading headlines (clickbait). Spreads through bots or coordinated networks to amplify reach and simulate popularity.
- Creates fake experts or sources that appear trustworthy and increasingly makes use of deepfakes.

Activity 8: Analyse a piece of disinformation

Select one or more texts that clearly contain disinformation and for which counterevidence is available and easy to access. Going to fact-checking sites (such as of the members of the European Fact-Checking Standards Network[17]) can help you in your search. Have students examine the text(s) and ask them if they can identify the characteristics described above. Have them first do this as individuals and then in small groups to maximise learning.

Why is disinformation created and spread?

Once students can grasp the definition of disinformation, questions that often come up are *'Why do people create disinformation? What motivates them?'* You can help steer them in answering these questions.

It is important for students to know that there are several reasons disinformation is created and spread. Ideally, they can research this issue themselves but as a teacher it is important to give feedback after such an assignment and to explain that certain individuals or groups create disinformation to influence others. This can be done for ideological reasons, to convince people that a certain political opinion is right, make financial profit or create broader confusion and self-doubt. It can also be done by malicious actors with the aim to sway public opinion and undermine public resilience. With respect to some milder cases of disinformation, you might mention that it can be created to entertain (e.g. certain forms of satire) and in those cases deception is meant to gain followers. This is why it is important for students to know the various motivations to create disinformation, the forms it can take and the potential harm it can cause.

Consider...

- Talking to students (first abstractly, then more personally if the group atmosphere allows) about what kinds of online information arouses emotions such as anger, sadness, pride, anxiety.

17 https://efcsn.com/

- Discussing what could trigger students to share content without thinking. Ask if they can give examples from personal experience. Remind them that strong emotions, such as joy or anger, make it harder to think rationally and critically.
- Discussing the importance of source evaluation. A good rule of thumb for credible sources is that they are transparent about where their information came from. Remind students that even reliable sources can sometimes make mistakes, therefore checking sources with at least one other source for information is advisable.

Activity 9: Research why disinformation is created

After having discussed why disinformation is created, have students research this online. This can be done as a more general assignment or assigning small groups to each research the reasons people (or organisations) might want to spread disinformation about for instance climate change, refugees and migrants, religious minorities, sexual minorities, women, etc. Have the small groups present to each other what they have found. What are the commonalities and differences?

For younger students you can choose topics that are easier to engage with in an age-appropriate way.

Before having students do this, however, it would be good preparation to first research this yourself to be better able to steer the conversation in class.

It is useful for students to know that spreading disinformation can lead to economic gain for both individuals as well as the social media platforms themselves. We discuss this in more detail in Section 8 on Social Media Platforms and Influencers.

The more spectacular and controversial the information presented on the internet and on social media platforms, the more likely it is that people will read and share it, which means that the creators of the news get more advertising revenue. Those spreading false and/or misleading information will try to get as many people as possible to share it. False 'news' sites, created to copy a genuine news site, are one effective tool for spreading disinformation for financial gain. The fact that most social media platforms are largely designed to encourage us to stay on our screens means that this sort of spectacular content gets greater 'play' on students' newsfeeds than more balanced and therefore less spectacular content.

Tip 5: Highlight what students can do to reduce disinformation

In the online world, in particular on online platforms, there are many ways for individuals to contribute to limit the spread of harmful and illegal content, for example through the reporting features offered by such platforms. Convincing students that they can make a difference can lead to further concrete classroom and school activities to develop strategies that aim to counter disinformation.

Consider...

Asking students, once they have established that disinformation poses various threats, the following questions about responsibility:

- Who is responsible for stopping the spread of disinformation in both traditional media outlets such as TV stations and newspapers as well as on social media platforms?
- How best can social media platforms and traditional media outlets strike a balance between ensuring free speech and reducing disinformation?
- What is the role of the government in curtailing disinformation?
- What is the role and responsibility of technology users like the students themselves and the community? Can they play a role?

Disinformation can also be spread for ideological purposes. For instance, extremist organisations try to win people for their cause through disinformation and try to recruit new members. Another concerning form of disinformation for ideological purposes is government circulated disinformation and propaganda. Such disinformation may be created by undemocratic regimes to promote the interests of the state with the intent to influence public opinion (in that state or in another). This can be particularly prevalent in the run up to elections when so called Foreign Information Manipulation and Interference (FIMI) can endanger the democratic process. Such disinformation can deepen divisions in society, demonise certain minorities and also affect other countries.

Activity 10: Discuss media freedom

Discuss with students whether a free media is less likely to spread disinformation than government censored media. You can also go to the World Press Freedom Index and show your students how your country ranks in terms of media freedom[18]. The website is visual, interactive and available in six languages.

Cautionary Note 3: Be careful when helping students create their own disinformation

Teachers/educators sometimes decide to have students create their own disinformation in a spirit of learning by doing. For example, an art teacher might have students create cheapfakes with the use of digital technologies to show how they are created. This can lead to a better understanding of how cheapfakes are created. However, there are risks involved with this and it is important to ensure such activities are accompanied by a careful discussion about the use of new skills in inappropriate ways.

Assessing the credibility of information, and how to identify and use legitimate sources

The credibility of information can be assessed in various ways, several of which are easy to adopt and discuss in the classroom. Common amongst these are fact-checking, prebunking and debunking.

Fact-checking is the process of verifying if information is true or false. It can take place with any type of media (including text, audio and visual images). Professional fact-checkers help the public to make informed decisions. In order to best serve the public interest, independent fact-checkers in Europe strive to adhere to the highest standards of methodology, ethics and transparency such as the Code of Standards developed by the European Fact-Checking Standards Network[19]. This is to carry out their work impartially and transparently, without bias or prejudice.

For students, to determine if information is trustworthy, the following questions can be asked: Who is the author? What is the evidence and what do other credible sources say – also, what are credible sources? Text searches and reverse image searches are often useful when fact-checking. Such searches can help determine if a text is accurate or an image is manipulated and/or taken out of context. Fact-checking is useful both before and after information is published.

Interrogating truth statements in online information

- ? Who is the author/source?
- ? What kind of evidence is presented?
- ? What do other sources say?

Feel free to share your findings with others.

18 https://rsf.org/en/index

19 Code of Standards – European Fact-Checking Standards Network (EFCSN)

Consider...

- Introducing students to the websites of relevant local fact-checkers in local or national media outlets including legacy media or international ones.
- Inviting guest speakers including journalists or fact-checkers to the classroom/school to talk about disinformation and fact-checking.
- Finding out which local, national, or international organisations can offer help with fact-checking and reach out to them. A good place to start is with the European Digital Media Observatory (EDMO)[20] which links fact-checking services throughout the European Union[21].

Prebunking is a process where people are warned in advance of the mechanisms and behaviour used to spread disinformation to build resilience. It builds on the reasoning that 'an ounce of prevention is worth a pound of cure'. For more information please see Section 9 on prebunking.

Debunking happens after false information has appeared. The aim is to correct false information and to prevent others from believing what is verifiably false information. Those reading or seeing the information 'see through' what is being presented as fact and/or truth. Fact-checking strategies can be used to debunk misinformation and disinformation.

Understanding the various dimensions of disinformation

Technical aspects of disinformation

Most students know how to use digital devices but not how to use them responsibly or how modern technology makes it easy to spread disinformation. For instance, AI, while being a powerful tool to address disinformation and misinformation, can also be misused to create synthetic content, such as deep fakes - synthetic images, manipulated videos or audio materials. See Section 7 for more information on the topic. Networks of bots can spread inaccurate information online. Understanding the technical aspects of disinformation gives Insight into how disinformation works.

Consider...

- Asking students if they know how algorithms, clickbait, and bots work (in terms of technology) while making sure that you are confident in being able to answer questions they might have on these topics.
- Having students conduct targeted research (instead of providing answers to the above). Have them, for instance, go online and identify one or two short videos with guidance that they think explain these technical aspects well. Select one or two to show to the class.
- Looking into the increasingly common online educational games that give students and others Insight into how disinformation works.

Ethical aspects of disinformation

In addition to the technological aspects of disinformation, discussing the ethical aspects of disinformation with students can provide a fuller picture not only of how disinformation works but also how disinformation can be harmful, what kinds of harm it can create for individuals and society and their own responsibilities in the digital realm, especially their responsibility to not disseminate disinformation and to warn others about it.

Tip 6: Connect to human rights

Discussing human rights issues such as freedom of the press, freedom of speech and freedom of information, as well as how and why social media platforms curate content, can give students further Insight regarding disinformation and the challenges associated with spreading it.

20 https://edmo.eu/

21 https://edmo.eu/about-us/edmo-hubs/

Consider...

- Looking at recent EU policy initiatives to restrict the spread of disinformation (e.g., the EU's 2025 Code of Conduct on Disinformation[22], the Digital Services Act[23] and the AI Act[24] where relevant).
- Exploring further EU resources, such as the Teachers toolkit 'How to spot and fight disinformation'[25]
- Having students assess advertisements and ask what the advertisers want to accomplish and why? Does this differ from disinformation? How?
- Discuss with students how democracy builds on free speech? Should all free speech be allowed, even if it is verifiably false and causes harm?
- Devising a campaign with students to warn other members of the school community against the most prevalent expressions of disinformation at that moment.

The financial dimension of disinformation

Social media platforms generate revenue by collecting vast amounts of user data in order to build detailed behavioural profiles. These profiles are then used to sell precisely targeted advertising space, forming the backbone of the platforms' business models. However, disinformation actors are increasingly exploiting the same targeting tools to tailor false or misleading content to specific audiences, thereby maximising its reach and impact. In many cases, this content is designed to drive clicks to monetised websites, generating revenue through advertising. Preference-based news feeds exacerbate the impact of this model.

Consider...

- Asking students what they buy online. Have they seen any kind of deception when they go online? What kinds of deception? Why would companies use deception?
- Asking students which companies might want to target their cohort through marketing? If they are willing, they can also talk about their own experiences.
- Asking students if they know what phishing is. Explain if they do not know. What is the harm that phishing causes?

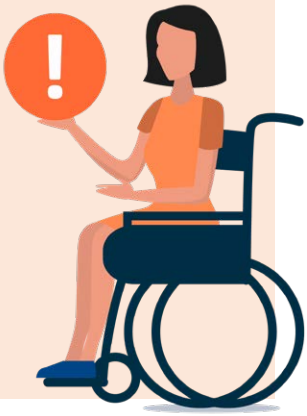
Cognitive and emotional dimensions of disinformation

Part of the reason that it can be challenging to convince people that certain information is false relates to common cognitive and emotional, yet very human, mechanisms that can make us resistant to corrective information. Presenting facts and truths often fails to convince people that their views are erroneous. Many of us also do not think we are particularly susceptible to disinformation. That is why it is critical that young people develop an open mindset, accept that reality has many layers, that there are no easy answers to complex issues and helping them to learn how to tolerate ambiguity.

22 https://digital-strategy.ec.europa.eu/en/library/code-conduct-disinformation
23 https://digital-strategy.ec.europa.eu/en/policies/digital-services-act
24 https://eur-lex.europa.eu/eli/reg/2024/1689/oj/eng
25 Staying vigilant online: can you spot information manipulation? - European Union

Insight 4: Why young people may be persuaded to believe what they see online

- *Need to belong*: we are all individuals with our individual beliefs and values, but we are also social beings who have a strong need to belong to social groups. We derive many rewards from belonging to social groups and are usually willing to make sacrifices (including ignoring evidence that challenges our views) to maintain our group identity.
- *Confirmation bias:* human beings of all ages have the unconscious psychological desire to seek confirmation of their existing beliefs rather than information that might contradict or complicate their beliefs.
- *Disconfirmation bias:* the human tendency to ignore or reject information and assertions that challenge one's beliefs, even when they are demonstrably true.
- *False consensus effect*: (young) people tend to overestimate how many others share their (erroneous) beliefs.
- *Bandwagon effect*: an idea or belief is followed because everyone seems to be doing so.
- *Naïve realism*: the human tendency to believe that we are rational, objective, and unbiased when we interpret what we see around us, and that others are either irrational, biased or misinformed.
- *Continued influence effect*: the phenomenon that discredited (dis) information continues to affect our behaviour and beliefs. People continue to rely on the false information when interpreting information, reasoning, and making judgments.



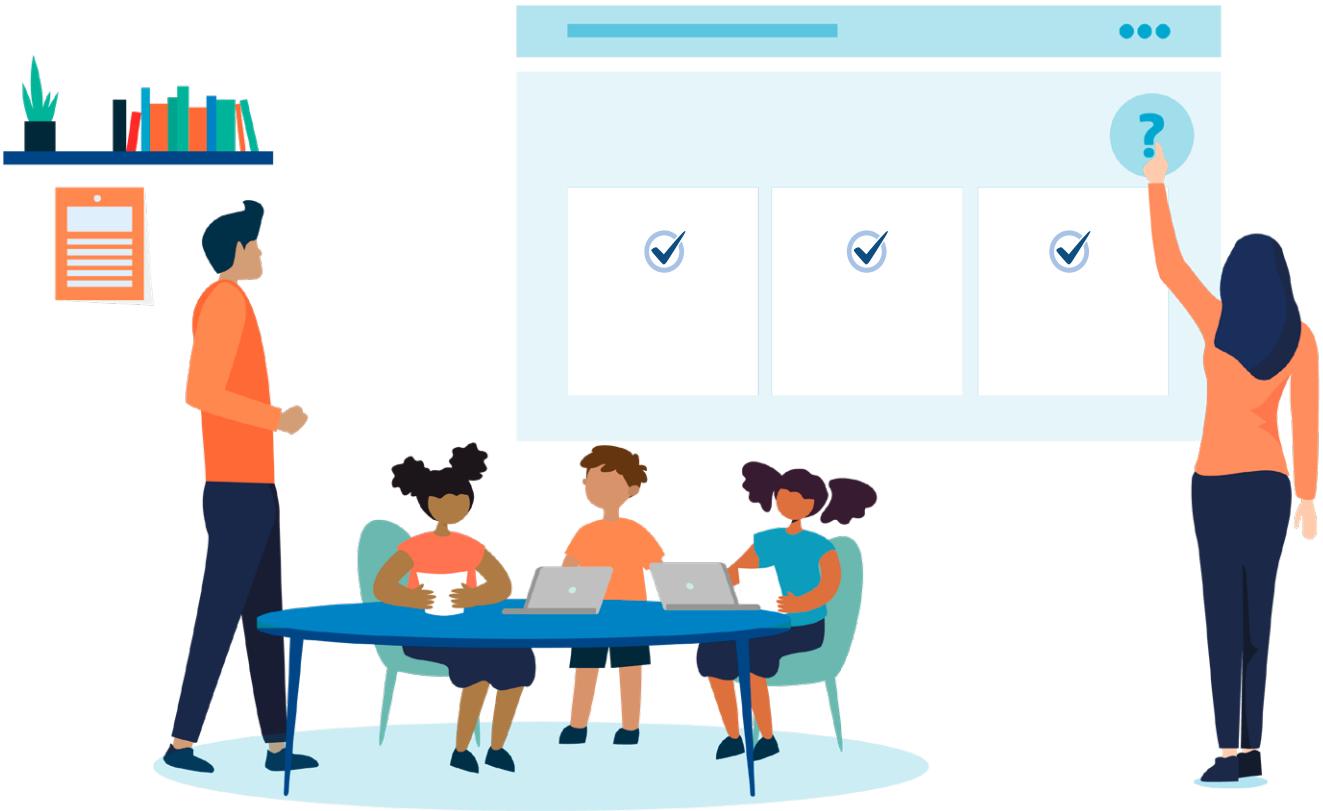
Cautionary Note 4: Watch out for Conspiracy theories

Conspiracy theories are a special kind of disinformation and can be especially resistant to challenges using facts and evidence. Because of their nature they are hard to disprove. They are also especially prone to what we have referred to as the continued influence effect. Therefore, addressing conspiracy theories with students can require more careful attention.

Key aspects of conspiracy theories tend to be that they:

- Attempt to manipulate opinions and beliefs.
- Are not simply loose pieces of false information but connect to a broader societal view of what is good and bad in the world.
- Identify victims (often one's own social group) and perpetrators (others).
- Often seek to strengthen one's sense of group belonging (Us versus Them) and imply a call to action.
- Place blame for negative events on elusive, hidden and secret 'realities', and organisations.
- Assume that powerful groups of people are keeping things hidden from us and are trying to cause harm.
- Often makes a topic hard to discuss based on facts, as the theories can be presented as questions: "I'm only asking, isn't it suspicious that..."
- Appeal to emotions and are resistant to any type of evidence.
- Can lead to economic or political profit for those spreading false conspiracy theories.

In addition to the activities suggested in this section, you will also find a sample lesson plan in the resources section.



7 Generative AI and Disinformation

Generative Artificial Intelligence (GenAI) refers to AI systems designed to generate new content, such as text, images, code, audio and video. GenAI models learn patterns and structures from large amounts of data, enabling them to produce original content that seems authentic and realistic.

AI tools can be excellent sparring partners and support brainstorming. They can also be used as powerful educational resources, but they are not infallible. These systems may unintentionally produce inaccurate, biased or misleading content that can have negative consequences on overall well-being and mental health. There are several reasons for this, for example:

- Large Language Models (LLMs) are trained using materials taken from the internet, which may contain unreliable or biased information.
- GenAI systems do not 'understand' content. They predict the next word based on patterns, not human logic or truth. This can lead to AI 'hallucinations' - confident, detailed, but false statements.
- Prompts made by GenAI users may not be specific enough, or the outputs may be misinterpreted.

As an educator, you should always verify GenAI outputs, because there is a risk of unintentionally spreading content that appears credible but is false or misleading. This can confuse students, reinforce false narratives, and ultimately erode trust in both the technology and the educator using it.

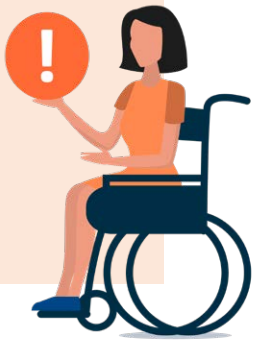
AI Literacy, schools, teachers and learners

AI literacy enables learners to engage, create with, manage, and design AI, while critically evaluating its benefits, risks, and ethical implications. AI literacy requires also critical thinking about when, where, and how AI should be applied to ensure it serves human needs equitably. The draft AI Literacy Framework for Primary and Secondary Education[26] developed by the European Commission and the OECD provides a good introduction to the skills and competences students need. The DigCompEdu framework[27] also outlines the specific competences educators need to integrate digital technologies, including AI, effectively and ethically.

As a teacher, you play a key role in fostering students' AI literacy. However, to fulfil this role, you must possess the necessary knowledge and skills to integrate AI responsibly and effectively into your teaching, thus enabling students to become informed digital citizens.

Insight 5: AI competences required by teachers

- **Understand** generative AI by knowing how it works, including its potential to produce inaccurate, biased or misleading information.
- Critically **evaluate** AI content by **fact-checking** and **verifying** sources to **assess** its accuracy, bias and disinformation.
- **Develop** specialised strategies to support students with learning difficulties.
- **Integrate** AI and digital literacy into the curriculum through adaptable, interdisciplinary lessons to help students build resilience against misinformation.
- **Foster** critical enquiry by cultivating a classroom culture that encourages curiosity, critical questioning, and the rigorous verification of all digital content, especially AI-generated content.
- **Understand** that AI technology is developing quickly, as are the forms of disinformation and deepfakes. This is why it is important to stay updated and follow developments regularly, for example through peer-to-peer learning.



26 https://ailiteracyframework.org/

27 DigCompEdu - The Joint Research Centre: EU Science Hub

Tip 7: What to bear in mind when using GenAI

- GenAI output requires a close check - teach students to examine whether AI outputs should be accepted, revised or rejected.
- Use AI tools creatively to address students' varied learning needs, particularly those with special educational needs or additional educational needs.
- Point to the role of AI and its impact on our daily lives. For example, social media platforms use AI in their recommendation algorithms to shape what we see.

According to the EU AI Act[28], the deployment of AI systems in education is important to promote high-quality digital education and training and to allow all learners and teachers to acquire and share the necessary digital skills and competences, including media literacy, and critical thinking, to take an active part in the economy, society, and in democratic processes. When the educational institutions, such as schools act as a deployer according to the EU AI Act, they should ensure that the staff assigned to implement AI system is capable to do so in terms of having the adequate competence, training, authority and support.

The Commission has also developed Guidelines on the Ethical use of AI and data in teaching and learning for educators that can help teachers better understand the opportunities and challenges AI brings in educational context[29].

Generative AI

While GenAI applications can analyse vast amounts of data with impressive speed, they also have significant limitations. AI tools are not neutral; they are shaped by the decisions of those who build them and the data available online. From the selection of training data and its sources to how that data is processed, human decisions and societal biases influence AI's outcomes.

GenAI tools that create text are powered by advanced computer programs called Large Language Models (LLMs). LLMs learn by processing vast amounts of data, much of which originates from the internet. However, the internet is a mixed source of information: it contains both reliable and unreliable information, as well as biased content and harmful stereotypes. Since LLMs learn from this data, they can unintentionally reproduce these issues. And even when trained on accurate data, AI tools can also produce new, potentially inaccurate content.

Consequently, AI-generated content may sometimes contain disinformation, biased material or carry the potential for hallucinations. It is therefore crucial to critically evaluate all GenAI output and ensure careful proofreading. Furthermore, you can improve AI outputs by using clear prompts and refining them.

Activity 11: Use AI tools to debunk myths

AI tools can be used to debunk myths or verify facts with students of all ages, including in primary education. AI tools are extremely powerful, but they're still computers and can sometimes make mistakes. They're like really helpful assistants, but we still need to think for ourselves and look for more clues!

Example:

Imagine you saw a claim on social media that the Earth is actually flat. You can ask the AI tool to verify the claim.

Prompt: *I saw on social media that the Earth is flat. Is it true?*

Expected output: *No, the Earth is not flat.*

Discuss why the AI tool said that.

You can continue questioning and ask for justifications or sources.

Second prompt: *What evidence is there that the Earth is not flat?*

Expected outputs:

- *Ships disappear hull first over the horizon.*
- *The Earth's shadow on the Moon during an eclipse is round.*
- *People have travelled all the way around the Earth.*

You can continue the iteration process as long as needed as well as discussing how AI tools can be used in other cases.

AI does not have human-like understanding – it processes data

AI handles, processes and produces data, even if it does not have human-like understanding or awareness. AI cannot comprehend or interpret information in a human way, although GenAI does an excellent job of mimicking human-like language and reasoning in its outputs. The information produced by AI is always based on machine learning models, algorithms and

28 Regulation - EU - 2024/1689 - EN - EUR-Lex

29 Ethical guidelines for educators on using artificial intelligence - European Education Area

underlying data. AI does not have the human conscience or capability for ethical or moral reasoning, nor the conscience and capability for emotion and empathy. The responsibility for recognising, using and interpreting the information generated by AI lies with the human, the AI user.

Activity 12: Use AI to support critical thinking through simulations

AI can be used to simulate realistic scenarios involving disinformation. For example, it is possible to generate fictional articles, posts or news stories containing typical features of disinformation. Students can be asked to analyse these texts, identify manipulation strategies, and compare them with verified sources. This approach supports the development of analytical skills and media awareness.

Educators may also design role-playing activities where students take on the roles of fact-checkers, investigating controversial claims or responding to misinformation campaigns. This encourages learners to question, evaluate and reflect on the quality and intent of digital content. These methods must be carefully managed. Teachers should clarify the fictional nature of AI-generated content and ensure that students do not internalise misleading information.

Activity 13: Play the Teach the Robot! game – an example of Learning by Teaching

The purpose of this activity is to help young students understand how AI learns through examples and to develop key skills about algorithms and training data. In the game, students role-play as robots. The teacher plays the role of a "data trainer" giving input like "Apples are fruits. Dogs are animals." Then the robot must respond to test cases.

Extension: Introduce the idea of "bad training" (e.g. giving contradictory or biased examples) to explore AI limitations.

Generative AI tools can be used to produce high-quality disinformation

GenAI tools have also significantly simplified the creation of convincing fake video, photo, and audio content called deepfakes. This technology, powered by machine learning and artificial intelligence, can produce authentic-looking media or fake websites, making it increasingly difficult to distinguish between real and fabricated content. AI tools and bots can also be used to disseminate disinformation on a large scale with potentially negative consequences for the well-being of its users

Young users, who may lack sufficient background knowledge, are particularly at risk of accepting AI-generated output as real and truthful. The development of critical thinking skills is therefore essential for everyone, especially young people, to identify errors and biases in AI generated content so that its potential can be realised and reliable information can be generated.

AI in education

It is vital to guide students to understand and use powerful AI tools effectively and safely. Integrating AI into the classroom isn't just about using new technology; it's about fostering critical thinking and digital literacy in the AI age. As teachers and educators, it is important that you discuss the potential benefits and limitations of AI tools with students. These tools can enrich learning for example by providing differentiated content to meet the specific needs of individual students.

Insight 6: AI & Disinformation: Considerations concerning Special Educational Needs (SEN) or Additional Educational Needs (AEN).

Students with SEN/AEN may experience particular difficulties in distinguishing between AI-generated and human-generated content due to challenges in processing, social communication and executive function.

Adapted teaching strategies:

- Visual and concrete learning: use comparison charts, checklists and colour coding to distinguish between 'real' and 'AI'.
- Simplified language: break down concepts (e.g. 'fake news made to trick people') and use concrete examples.
- Scaffolded learning: start with obvious fake content, provide guided practice and encourage peer support.
- Sensory & Attention: limit the amount of information provided, use multiple presentation modes and provide frequent breaks.
- Building critical thinking: teach simple Question frameworks (e.g. 'Who made this?', 'Why?') and practise with familiar examples.
- Practical safety: establish clear sharing rules, create decision trees for seeking help and teach pausing before sharing.
- Assessment adaptations: use verbal explanations, provide extra time and offer multiple-choice or matching activities.
- Family engagement: share simplified resources and collaborate with specialists to provide consistent support.

AI tools can also be used for brainstorming, tutoring and ideation. Encourage your students to fact-check against credible, verified sources, Question where the AI's information comes from and look out for outdated, biased or oversimplified explanations. For videos and photos, students should verify the source, look for signs of editing or manipulation, and cross-check with trusted references to ensure the content is accurate and trustworthy. They should also ask questions like: 'Is this a real picture or video?', 'Could this image have been altered?', 'Is it possible that this person is actually in this context?' It is essential to discuss these potential possibilities and pitfalls with students and parents in order to set realistic expectations and promote responsible use.

Activity 14: Carry out the Deepfake Challenge with your students

The objective of this activity is to raise the topic of manipulated visual content amongst your students.

Watch two short videos—one real, one altered with AI (e.g., deepfake of a celebrity making a false claim). In the follow up discussion, ask what clues they found to indicate the video might be fake? Ask how could it be used to mislead?

Follow-up: Students design a campaign poster warning their peers about deepfakes.

Key Skills: Visual literacy, civic awareness, creative communication.

It is important to encourage critical thinking and human judgement in the classroom. If your students have doubts about something produced by an AI tool, they should be supported in verifying the information. AI should never replace human judgement, independent thinking or meaningful discussions with informed peers or teachers. Students should feel confident asking critical questions such as: 'Who created this content?', 'What evidence is there?', 'Might this be biased?' and 'What do other sources say?' When it comes to AI-generated videos and photos, students should verify their authenticity and be cautious of any that are manipulated or misleading.

AI tools are developing at an incredible rate and this makes knowledge sharing essential, as many people are still getting to grips with them. Sharing what you know can significantly help others to understand AI.

Although AI is a powerful tool, it is not a substitute for learning. Students should be taught to use it thoughtfully. While it is great for generating ideas, creating outlines and checking grammar, it should not replace the development of personal thinking and writing skills. AI should be emphasised as a learning companion, not a shortcut. Thoughtful use in combination with critical thinking enhances learning, while overuse can lead to superficial learning outcomes.

Tip 8: Bias in, bias out

It is important to understand how GenAI is trained. What goes into GenAI shapes what comes out: bias in, bias out. Make sure to always verify before you amplify. Pause before sharing - one click can spread a lie!

Insight 7: Can I trust what AI says? How do I check for disinformation?

Reflect: When you use an AI tool - like a chatbot, search assistant, or writing generator - do you ever stop to ask where its information comes from? Did it name a source, or just sound convincing?

Understand: AI doesn't know what is true. It produces responses based on patterns in the data it was trained on, which can include blogs, forums, outdated texts, and even biased or false material. If you don't know the source behind the output, you could be unknowingly spreading disinformation.

Disinformation created or amplified by AI is especially dangerous because:

- It blends real and false facts.
- It often lacks citations, making it hard to trace.
- It sounds fluent and confident, encouraging trust without proof.

Ask yourself:

- Can I identify the original source of this information?
- Does it come from a reliable, independent, and verifiable source?
- Is the information up-to-date and supported by evidence?
- Are there signs of bias, manipulation, or missing context?

Be alert: Some AI tools invent statistics, names, or quotes - not to lie, but because they're predicting what sounds plausible. This can create very real-sounding disinformation that spreads easily unless someone takes the time to verify.

Take action:

- Never share AI-generated content unless you've checked it against trusted sources.
- Use official websites, academic references, or independent fact-checking platforms.
- Always ask for evidence - because if you don't know where it came from, you can't know if it's true.

Insight 8: The way you ask GenAI a Question influences the answer you get

Reflect: Have you ever asked an AI a vague or loaded question - and received an answer that seemed right, but might not have been accurate? How did you know whether the information was reliable?

Understand: The quality of AI output depends heavily on how you ask the question. If your prompt is too broad, biased, or unclear, the AI might give you:

- Half-truths, one-sided views or even false or misleading information.
- Disinformation doesn't always come from bad intentions - it can also result from poorly designed prompts that lead AI to fill in gaps with plausible but inaccurate content.

Ask yourself:

- Am I asking for facts, or opinions?
- Am I using loaded or leading language that might bias the answer?
- Have I specified what kind of sources or evidence I expect?
- Could this Question accidentally encourage AI to generate disinformation?

Examples:

- 'Explain why vaccines are dangerous' → reinforces a false narrative.
- 'What do medical experts say about vaccine safety, according to WHO and public health institutions?' → encourages evidence-based answers.

Be strategic: A well-framed Question helps reduce the risk of receiving disinformation. Be specific, ask for sources, and define your terms. If you receive an answer that lacks transparency or sounds overly confident, follow up with more questions and verify the information independently.

Take action: Think before you prompt. AI is a tool - but you guide its output. Clear, neutral and well-structured prompts help ensure that what you receive supports truth, not confusion.

Note that you will find two specific lesson plans in Section 12 directly related to the topic of GenAI.

8. Social Media Platforms and Social Media Influencers

This Section offers practical tools and teaching ideas to help teachers support students to navigate social media and influencers in an age of disinformation. You will also find several lesson plans in the resources Section related to the topics covered.

In this section, we aim to support teachers and empower students. Helping students navigate social media and influencers isn't just about protecting them from disinformation, it's about empowering them to think, question, and act responsibly online. As educators, teachers can empower students by teaching them how to think critically and use social media and its platforms wisely.

What are social media platforms and social media influencers?

Social media platforms refer to websites and apps that allow users to create, share, and interact with content. Examples include Instagram, TikTok, YouTube, Snapchat, Facebook and X. While these platforms differ in format and purpose, they often share similar characteristics such as:

- personalised content feeds driven by algorithms.
- user-generated content, where anyone can publish or share material.
- interactive features such as likes, shares, comments, and direct messaging.
- cross-platform integration and visibility, where content may circulate between platforms.
- content can spread rapidly, regardless of its accuracy or credibility.
- commercial interests, including advertising and influencer partnerships, often shape what is promoted or prioritised.
- verification of sources is typically the responsibility of users; platforms rarely intervene unless content breaches legal guidelines.

Social media provides the platform – content depends on creators!

Social media platforms do not produce content; they host and distribute what users upload. Some gaming platforms like Fortnite also allow and encourage interactions among users. As such, platforms are shaped by the content created by their many users. This means the quality, reliability, and intention behind content varies widely, from educational material and activism to advertising, satire, or outright disinformation. Influencers, individuals with significant followings, play a central role in shaping trends, opinions, and public discourse on these platforms. Some may be credible and well-informed; others may promote misleading or harmful content for clicks, money, or influence. Digital literacy is crucial for students to understand that a platform is not a trusted source in itself - credibility lies with the content creator and context.

Most platforms set a minimum age of 13, but enforcement varies[30]. Some platforms are based in the EU, and are under the protection of EU digital regulations, while others are not. Some use self-declaration, while others are beginning to implement stricter verification tools like age estimation technologies or identity checks in compliance with EU or national laws. Platforms offer privacy settings that allow users to control who can see their content, comment, or interact with them. These include private account options, moderation of comments, location sharing settings, and report/block functions. Young users can also manage who follows or contacts them. Many platforms now allow users to restrict or limit interactions, approve followers, or filter unwanted messages. Teachers should encourage students to regularly review these settings and discuss boundaries for online interaction, especially with strangers or public figures.

Consider...

- **Social media platforms** are not entirely new phenomena - they are the digital evolution of long-standing human behaviours: community building, trend sharing, and social interaction. What makes them different today is their speed, scale, visibility and the fact that they are online. Just like playgrounds, fan clubs, or youth forums of the past, platforms bring people together - but they also amplify and accelerate trends, challenges, opinions, and social pressures, often spreading across the globe in minutes.
- **Social media influencers** are the modern version of public figures who have always shaped culture - think athletes, movie stars, or pop icons. Similar to traditional celebrities, they shape opinions and behaviours. But unlike traditional celebrities, today's influencers often build their

30 Teachers are encouraged to research age restriction rules in their own context.

audience directly, without needing a media company, and connect with followers in a more personal and unfiltered way, due to their ability to build personal relationships with followers. What's different is the everyday accessibility and relatability of influencers: many are regular people who became influential through content creation. They blur the lines between peer, celebrity and expert, which can make their messages - both positive and misleading - more persuasive.

Activity 15: Ask students what platforms they use and why[31]

- Students vote in class using poll software or small, individual whiteboards to outline the various social media platforms that they use. Working collaboratively in class, students create a chart/poll wall outlining the various platforms that they use as a class.
    - Students explore which social media platforms that they use most frequently. Why do students use each specific platform? Record this on the chart/poll wall.
    - Comparison across the platforms – What are the features and purposes of each platform? Record this on the chart/poll wall.
    - What are the commonalities? Record this on the chart/poll wall.
    - What is positive and negative about each platform? Record the comparison on the chart/poll wall.

Tip 9: Check platform usage before class

Teachers may feel nervous in terms of what platforms may emerge in the discussions and their own familiarity with such platforms. To avoid this, teachers can turn this into a flipped classroom activity whereby teachers ask the students what platforms they use and why as a pre-class activity, to be submitted prior to the class. This will increase teacher comfort levels and allow time to review any unfamiliar suggestions in advance.

How social media works - why we see what we see

Social media platforms and influencers base their business model (how exactly they make money) on capturing our attention and monetising our data. This is referred to as the attention economy i.e. the more time spent on social media platforms results in more money from advertisers (the main revenue source for most social media); the more time spent engaging with influencer content results in better brand sponsorships and higher paid post fees (the main revenue source for most influencers). Social media platforms also generate revenue by collecting vast amounts of user data to build detailed behavioural profiles. These profiles are then used to sell precisely targeted advertising space, forming the backbone of the platforms' business models.

The psychology of social media platforms and social media influencers

Many social media platforms use manipulative and addictive design to make users stay longer on their platforms. Influencers are also pushed to use tactics that might increase their popularity or virality. But how and why does manipulative design work?

Emotion - disinformation is usually emotionally charged and emotions make us take action. Likes, comments and shares give greater visibility to the content and increase revenue for the content creator.

- **Confidence** - some influencers build trust through *playing* confident because we tend to trust those people who behave more confidently (both online and offline). Credibility is a currency.
- **Confirmation Bias -** we like information that confirms our previous beliefs. Because we like that information, we trust it and we share it.
- **Dopamine -** this crucial neurotransmitter associated with mood and motivation is released when users receive likes, comments, or notifications, reinforcing the desire to check and interact with the platform (**the dopamine cycle**).
- **Infinite scroll** - is a design pattern that loads content continuously as the user scrolls down, in a seemingly endless stream of content. It allows users to continuously access new content without ever reaching the end.

It should be noted that there are many educational, trustworthy influencers, most of whom prioritise informative content over sensational news. However, areas like diet, sports, health, news, and geopolitics are especially prone to disinformation, often due to commercial or political motives.

31 Taking into account age-restrictions linked to social media usage.

The technology of social media platforms and social media influencers

- **Algorithms** - are sets of rules which determine what content is shown to whom and in what order. It is based on many criteria, such as geographic (the country you live in), sociodemographic (you are a teacher) and psychographic (you like to spend time with friends). The latter is determined by what content the user engages with most - likes, shares, comments, or spends time watching/listening/reading. Based on this information, the algorithm 'guesses' what the user should see next to keep them on the platform. A user's feed is also affected by the behaviour of their close connections (social media friends or those the user chats with most) and general virality and trends online.
- **'Black boxes'** - because we don't know more specific rules about algorithms than those described above, nor how much importance is given to different types of engagement, social media algorithms are sometimes referred to as '**black boxes'**. However, what we observe is that most social media algorithms amplify disinformation and misinformation (because it is usually emotionally charged), because it pushes the engagement of the users. To add to this problem, we know that algorithms can be manipulated and exploited.
- **Bandwagon effect -** we tend to follow the majority. This fake engagement can trick not only algorithms but also us.
- **Echo chambers** - algorithms can also lead to echo chambers because algorithms give the user information based on their previous interaction with that type of information; we already know that people tend to like information that confirms their beliefs more (**confirmation bias**). This means we end up in a '**chamber**' where all the information the algorithm is giving to us '**echoes**' the user's beliefs and previous patterns of their information consumption. This can lead to radicalisation and the growth of communities that espouse hateful ideologies.
- **Rabbit holes** - refer to a situation where a user gets deeply immersed in a particular topic or type of content, often through a series of recommendations or algorithmic suggestions, and finds it difficult to disengage. These rabbit holes can lead to a variety of outcomes, both positive and negative, depending on the content and the user's engagement.

Insight 9: Simple critical thinking skills for you to use with your students.

- The SIFT Method (Stop, Investigate, Find better coverage, Trace the claim back to its original content)
- Three Filters Test (Is it true? Is it good? Is it useful?)
- The 5Ws for Checking Content (Who posted it? Are they trustworthy? What is the message saying? Does it seem extreme or emotional? When was it shared? Is it old or taken out of context? Where did it come from? Can you find it on a reliable site? Why might someone want to share this?)

Activity 16: Find out who the students follow online and why

Ask your students to list who they follow and why they follow them. Add this detail to the chart/poll wall. Then lead a discussion with your students about what makes a person or a piece of content trustworthy.

- Who do they trust more – influencers (a specific influencer) or news reporters/teachers?
- Why?
  - What factors affect whether they trust a person or piece of content or not?
  - When students post online, what do they consider before they post to ensure that what they post is responsible and reliable?
  - Extension – this discussion can be developed into a walking debate. Students can document and record their findings within a chart/poll wall.
  - Map out how interacting with one specific piece of content leads to being exposed to similar content.

Tip 10: Turn the checking out who students follow into a flipped classroom activity

Teachers can turn the above activity into a flipped classroom activity whereby teachers ask the students what social media influencers they follow, to be submitted prior to the class. In this way, teacher will not be caught off guard with what social influencer names emerge in the discussion.

The two sides of social media - positive & negative aspects

Social media provides numerous advantages. It can enable young people with the means to connect, enhance their creativity, pursue new passions and promote civic engagement regardless of physical location. Through increased interaction online, young people can expand their social relationships, improve their social skills, enhance their self-development and even boost their problem-solving skills. Likewise, it makes communication easier, fosters profound learning through discussion, with many platforms offering micro-learning experiences for their users. It can also mitigate emotional vacancies, promote enjoyment, facilitate engagement in games or the observation of games of interest, and mitigates cultural conflicts by enabling disparate societies to better comprehend one another. These opportunities contribute to the transformative impact of social media, underscoring its potential to positively impact social structures and interactions.

However, despite the many advantages offered by social media, the phenomenon carries with it certain challenges that can have a significant impact on both individuals and society. For example, virtual interactions are replacing face-to-face interactions, and the learning of how to establish and maintain healthy relationships. A notable shift is evident in the nature of relationships. Historically, close-knit social circles have been known to foster deep, meaningful connections driven by necessity or choice. Currently, social media platforms facilitate the establishment of extensive networks of acquaintances, often referred to as 'friends'.

Greater freedom online has also led to negative behaviours, including cyberbullying. Anonymity on social media platforms enables individuals to harass or threaten others. According to WHO (2024), about 15% of adolescents worldwide have experienced cyberbullying, which can cause serious mental health issues such as anxiety, depression, and even lead to self-harm and suicide in severe cases. In Europe, 14% of the calls to Safer Internet Centres helplines are related to cyberbullying, making it the main reason for seeking support from these services.

Cyberbullying can take various forms, including sending threats, spreading rumours, posting embarrassing content, or creating fake profiles to impersonate others. Unlike traditional bullying, it can happen anytime and reach large audiences quickly, intensifying its effects. The anonymity of the internet often leads to more aggressive behaviour, leaving victims feeling isolated with few safe spaces to escape harassment.

Tackling the issue of cyberbullying needs a multifaceted approach. It is imperative to educate young people, on the importance of online safety and ethical behaviour in general. Under the Digital Services Act (DSA) and its protection of minors guidelines, social media and other online platforms should ensure that children and teenagers are safe on their services. They should also provide easy-to-use tools for reporting and addressing this and

other inappropriate behaviours. The guidelines recommend that children and teenagers are not added to groups without their explicit agreement and that they should be able to mute and block any user. Platforms should also offer high privacy settings to make sure that children and teenagers cannot be contacted by users they do not know and allow them to control how can see their content. Additionally, the Commission is currently working on an Action plan against cyberbullying and will soon launch an enquiry on the impact of social media on mental health. Likewise, it is also exploring the introduction of possible social media age restrictions for children.

It is important to note that neutral or positive content can be hijacked through comments or other platform features, resulting in discussions becoming toxic and negativity or propaganda being spread. This is referred to as **weaponised comments**. Social media platforms have also been used for **foreign interference** by individuals, organisations, and even governments to interfere in other countries' affairs, known as Foreign Information Manipulation and Interference (FIMI). For instance, reports indicate that foreign entities have utilised platforms to disseminate disinformation to create tensions within the targeted societies and exert influence over elections.

Activity 17: Use critical thinking skills to test the veracity of influencers' posts

Students work in small groups or in pairs. Each group is given a series of posts from one influencer, including examples of content posted online by social media influencers identified by the class. The students use the SIFT Method, Three Filters Test and/or the 5Ws to evaluate the influencer's content and test the veracity of their claims. Students spend time separating fact from opinion. At the end of the allotted time, one speaker from each group must present the case to the class and the class votes on whether the specific influencer is trustworthy or not, and why.

Insight 10: Digital literacy promoting well-being.

As teachers and educators, you can play a pivotal role in promoting mental well-being by incorporating digital literacy instruction into your curriculum, fostering an awareness of balanced screen usage, and facilitating open dialogue about mental health concerns. Furthermore, it is imperative that you address the signs of addiction and collaborate with relevant support actors, such as school counsellors. A central tenet of the curriculum is the instruction of adolescents in the discernment of fact from opinion, with an emphasis on the inherent value of opinion as a subjective expression rather than a form of malice.

Negative Effects

Social media can harm teens' mental health, causing:

- Distraction - Reduced focus and academic performance.
- Addiction - Compulsive use over real-world priorities.
- Fatigue - Mental exhaustion from overuse.
- Mental Illness Risk - Anxiety and depression linked to excessive use.
- Appearance Issues - Body dissatisfaction and low self-esteem.
- Emotional Instability - Impulsive reactions and conflicts.
- Stress - Pressure from online personas.
- Self-Harm/Suicide Risk - Increased by harmful content or bullying.
- Depression - Feelings of isolation and inadequacy.
- Sexual Behaviour Issues - Unhealthy attitudes from inappropriate content.

Teachers can help students to navigate social media safely, reducing its negative impacts by working on:

- Digital Literacy - Teach fact vs. opinion. Analyse posts to spot bias.
- Healthy Habits - Promote time management and digital detoxes and promote positive online engagement.
- Emotional Resilience - Discuss self-esteem and coping strategies like mindfulness.
- Safe Environment - Foster open talks on pressures and mental health.
- Address Addiction - Educate on signs and involve counsellors.
- Raise Awareness - Discuss risks like self-harm in age-appropriate ways.
- Model Behaviour - Show healthy digital habits and critical evaluation.

Activity 18: Run a debate on social media and social media influencers

Students debate the motion 'Social media and social media influencers have a role to play in the good of society than 'traditional' media'. The teacher divides the class into two sides – one for the motion and one against. Students are given time to prepare. The whole class is involved in the gathering of information for the debate and the class then nominates four students (two for and two against the motion) to present the case to the whole class. After the debate has occurred, the class votes on the which side was most compelling. Development – students can write an essay either for or against this motion.

Moving forward - how to do something to make it better

As educators and learners, we are all living in a digital society. Understanding our footprint, acting with integrity, and thinking critically are not just online skills – they are life skills.

Our Digital Footprint - Everything we do online leaves a mark. It includes posts, photos, comments, likes, and even things we delete. These traces can be found by others and may affect how people see us - now and in the future. Why does this matter? Because universities, employers, and others might look you up online. A positive footprint can open doors. A careless one can close them.

Tip 11: Remind students to always think before you click

Advise students to think before they click and ask themselves: Would I be okay with my teacher, parent or future employer seeing this?

Responsible and ethical use of social media - Being responsible online means using social media in ways that are respectful, honest, and kind. It also means checking facts before sharing and being aware of the impact our words and actions can have on others. Ethical use goes even deeper - it's about fairness, avoiding harm, and protecting privacy. Teachers and students alike have a role in building a digital culture based on trust and respect.

Tip 12: Remind students that social media is a shared space

We should all use it to lift others up, not tear them down.

Insight 11: Helping students find their unique voice

In a world filled with trends, likes, and influencers, it's easy for students to feel like they must fit into a certain mould online. But one of the most powerful things we can teach young people is this: your voice matters just as it is. Everyone has a unique story, perspective, and way of expressing themselves. Helping students discover and use that voice - especially in the digital space - builds confidence, critical thinking, and creativity.

The following are suggestions as to how teachers can help students to find their voice:

- Create space for self-expression – Give students low-pressure opportunities to write, speak or post about what matters to them – through blogs, podcasts, videos or classroom discussions.
- Encourage authenticity – celebrate students who express their thoughts in original ways, not just those who follow popular trends.
- Model your own voice – share your experiences and viewpoints (when appropriate) to show that teachers, too, are growing and reflecting.
- Focus on purpose, not perfection – a student's voice may still be developing – and that's okay. Help them explore ideas, make mistakes, and learn from them.
- Promote truthfulness – as students learn to speak up responsibly. That means, checking their facts, thinking critically, and avoiding the spread of false or misleading information – especially on public platforms.
- What I Stand For – ask students to create a short post, video or graphic titled 'What I Stand For', sharing a cause, value or interest that reflects who they are. Encourage them to back their message with a fact or a source. Focus on clarity, truth, and heart – not likes or trends.

Why this matters – when students learn to value their voice and the truth, they become stronger communicators and more trustworthy digital citizens. They understand that a meaningful message should also be an accurate one.

Insight 12: Integrating active media creation in meaningful ways.

Students spend a lot of time-consuming media - but they learn most when they become creators, not just viewers. Active media creation means letting students make things: podcasts, short videos, social media campaigns, infographics, blogs, and more. When done right, it connects learning to the real world, fosters collaboration, and deepens understanding.

The following are suggestions as to how teachers can engage students in media creation which is purposeful, and meaningful, not just a fun extra:

- Start with your learning goals - ask: 'How could students show their understanding through media?' For example, a history project could become a mini-documentary or a timeline video.
- Use real platforms and formats – let students try creating content similar to what they see every day – like a short explainer video, an Instagram carousel with facts, or a podcast episode.
- Make it student-led – let students plan, research, edit and share. The more ownership they have, the more invested they'll be.
- Include source-checking as part of the process – students should learn to verify their information, use credible sources, and avoid repeating content they can't trace or confirm.
- Reflect on the impact – who might see this content? How might it be interpreted? Could it accidentally mislead someone?
- Create to explain – choose a topic that the students are learning and challenge them to explain it through a piece of media. Before they publish or present, ask them to check their sources; explain where their information came from and review it for clarity and accuracy. This builds habits of thoughtful, ethical content creation – skills that matter beyond the classroom.
- Why this matters –teaching students to create content with care, truth, and purpose helps them become responsible digital citizens – not just media users, but media makers who can be trusted.

Activity 19: Run a campaign for the school community

Help your students create a newsletter/pamphlet to be shared with younger classes/their school community which is designed to encourage students to be a) responsible users of social media who b) critically Question the content that they are consuming. This can be shared with the school's parents' association, at the school's assembly, on the school's website, with incoming students etc. Senior students can host a short 'boot camp' whereby they peer teach junior classes about how to be safe and responsible online and how to spot disinformation.

Cautionary Note 5: Key points when dealing with social media platforms and influencers

- As with all suggestions within these guidelines, teachers should discuss their proposed teaching plans with school leaders before beginning.
- Be aware of your class and students' sensitivities when addressing certain topics.

Should students disclose anything that leads a teacher to be concerned for the student's welfare or that of others, the teacher should ensure that they follow their country and context specific reporting requirements.

Note that you will find three specific lesson plans in Section 12 directly related to the topics dealt with in this section.

9. Prebunking

Prebunking is a pre-emptive technique that helps us recognise and resist disinformation and reduce the sharing of false information. As the name suggests, it is the inverse of 'debunking', which is a reactive activity conducted **after** being exposed to disinformation. By activating, **prebunking**, you are teaching young people about the techniques used to manipulate them and, as such, strengthening their ability to spot disinformation and **refute false claims in the future.** Moreover, by warning people **in advance** that they are about to be the target of false information and attempts at manipulation, one can build on the reasoning that **prevention is better than cure**.

In this Section we will explain how teachers and educators can teach prebunking to students. You will also find several lesson plans in the resources Section related to the topics covered in this section. Students can also be told in advance what kinds of disinformation or targeted information they can expect. It provides a defence system that allows you to react more consciously in the event of future attempts at manipulation.

Why is Prebunking important?

Young people increasingly cite their social media feeds, gaming platforms and chatrooms as places where they not only seek out entertainment and social interaction - but also as places where they seek out and find information that shapes their world view. As students' use of online platforms diversifies and proliferates in this way, they are often alone in deciding what to make of the content they encounter there. It's important to bear in mind that these spaces are largely unmoderated. Corrections or balancing views are rare to find here. Far from official fact-checkers or debunkers who will help them, this is where students need the benefits of prebunking skills. Even on platforms used mainly by adults such as Meta and X, where factchecking used to be prolific, recent changes in management and operations have downgraded help for users to distinguish between facts, opinions and fakes. Added to this is the targeted nature of information that is customised through default preference settings and often feeds them a one-sided view of the world.

In this setting, prebunking empowers students to recognise patterns of disinformation; to cast off the blinkers that platforms' information algorithms impose, and to see the world in all its complexity, nuance and multiplicity of perspective.

In so doing, prebunking is also known to contribute to students' emotional wellbeing. That is because the ability to understand and resist manipulative or harmful content can reduce stress, confusion and feelings of helplessness in digital spaces. When young people are equipped with tools to navigate information more confidently, their digital resilience and psychological autonomy increase.

Basic knowledge and insights about Prebunking

Consider...

- Prebunking is a more powerful tool for fostering critical thinking skills than after-the-fact debunking because:
- When people are exposed to examples of manipulation techniques before encountering disinformation, their resistance increases significantly.
- Once students are aware of manipulation techniques, they are better able to recognise high-quality sources - including recognising reliable hyperlinks. This often helps them detect disinformation.
- When it comes to raising awareness about preference-based algorithms, research suggests that if we know our information feeds are feeding the preferences and views we already hold, we are better able to resist the polarising influence of such one-sided feeds. This can be done very simply with students by referring to their music feeds (see activity below).
- The effectiveness of discussing ethics as a way of pre-empting or prebunking the spread of disinformation. One of the most stubborn challenges to slowing down viral and false content is the use of joke formats and information presented in simple language. There is seldom any context, and the information is based on sources whose interests are not obvious, or the sources are not provided and cannot be checked. There can be a mixture of truths and lies, jokes and seriousness, which present disinformation as unharmful.
- If disinformation is shared in a jokey and entertaining way, people often continue to share it even if they know it is inaccurate. But if we actively write down what the ethical considerations are to sharing disinformation, we are less likely to share disinformation in the future.

- Finally, it's important to bear in mind that there are impactful ways of empowering students to slow down the spread of disinformation, while also reinforcing metacognition – the ability to reflect on one's own thought processes. This is essential not only for digital literacy but also for emotional regulation and psychological resilience.

Getting started

Prebunking interventions usually involve three stages:

1. **Forewarning:** a warning that online you can be manipulated or deceived in various ways, a discussion of common manipulation techniques, and an introduction of metacognition - the ability to reflect on our own thought processes.
2. **Microdose**: sharing examples of disinformation or manipulative messages with students, preferably from real case studies.
3. **Refutation**: explaining strategies for identifying and rejecting manipulative messages. This final part is crucial in empowering students rather than simply worrying them.

To start with **forewarning**, as a teacher or educator you can initiate effective prebunking in a classroom setting by letting students identify an emotive, manipulative and sensationalist text that fails to back up arguments with checkable facts; cherry-picking which fails to give the full picture; false experts and logical fallacies.

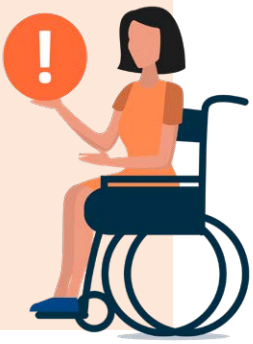
Consider...

- When engaging in prebunking, it's important not to stop at forewarning, but also to give students the opportunity to spot and refute misinformation in a safe space.
- This will help them feel empowered rather than simply mistrustful of all information, media sources, channels and platforms they encounter.

Insight 13: How to practice the forewarning element of prebunking with your students.

Bearing in mind the above, you may want to raise the following topics with them:

- They are likely to see and read content that plays with their emotions, making them sad, scared, angry but maybe also making them laugh or providing relief to them. Name the emotion and ask them when this has happened to them.
- They are likely to see and read content that feeds into their existing opinions and into their biases, including confirmation bias, naturality bias, proximity bias, negativity bias. This is because of their preference settings resulting in them being exposed only to limited perspectives. Ask them if this has happened to them.
- They are likely to be encouraged quite aggressively to share content. This is because content creators make money and gain influence if their content is shared. Ask them if this has happened to them.
- They are likely to see content that questions established authority.
- They are likely to see content that encourages them to spend money or share information about themselves.
- They are likely to see content that mixes truths and lies, jokes and seriousness, which presents disinformation as unharmful. Knowing this can help them stay resilient to disinformation.



Taxonomy of misinformation techniques

Depending on the age of your students, you may want to use the table below[32], which lists overarching misinformation techniques and some of their subcategories.

Overarching types of misinformation techniques	 Logical Fallacies **Logical Fallacies** An error in reasoning that occurs when invalid arguments or irrelevant points are introduced without any evidence to support them.	 Fake Experts **Fake Experts** Presenting an unqualified person or institution as a source of credible information.	 Impossible Expectations **Impossible Expectations** Demanding unrealistic standards of certainty before acting on the science.	 Cherry Picking **Cherry Picking** Selecting data that appear to confirm one position while ignoring other data that contradicts that position.	 Conspiracy Theories **Conspiracy Theories** Proposing that a secret plan exists to implement a nefarious scheme, such as hiding a truth.
Subcategories, and how they might be presented	 Ad Hominem **Ad hominem:** Attacking a person/ group instead of addressing their arguments.	 Fake Debate You may find arguments based on **fake debate**, focus on a **magnified minority** or **bundling of fake experts**.	 Moving Goalposts You may find arguments in which there are **moving goal posts.**	 Anecdote **Anecdotes**: Using personal experience or isolated examples instead of sound arguments or compelling evidence.	
	 Oversimplification **Oversimplification**: Simplifying a situation in such a way as to distort understanding, leading to erroneous conclusions. One way is to present a **False Choice**: Presenting two options as the only possibilities, when other possibilities exist. Another is to present a **Single Cause:** assuming a single cause or reason when there might be multiple causes or reasons.			 Slothful Induction **Slothful induction:** Ignoring relevant evidence when coming to a conclusion.	
	 False Equivalence **False equivalence:** Incorrectly claiming that two things are equivalent, despite the fact that there are notable differences between them. Ways of presenting such an argument include comparing **Apples vs Oranges**; presenting a **False Analogy**, presenting **False Balance**.				
	 Misrepresentation **Misrepresentation**: Misrepresenting a situation or an opponent's position in such a way as to distort understanding and/or create a **Straw Man**.				

32 This figure is an adaptation of content published in Zanartu, F., Cook, J., Wagner, M. et al. A technocognitive approach to detecting fallacies in climate misinformation. Sci Rep 14, 27647 (2024).

Proposed ways forward

Activity 20: Name emotions

If students can understand that their emotions are being manipulated, research suggests they will be more able to withstand disinformation. Here is an inoculation activity to help students understand this better:

- Present 2-3 emotionally charged headlines without the content of the article found in a news feed or social media. Before reading the article, ask, 'What emotion do you feel? How intense is it on a scale of 1 to 10?
- Take three deep breaths, then ask, 'Does this emotion help me think clearly?'
- Read the article and check: source, bio(graphy) (if social media), posting date, other sources or comments that confirm/refute. Be aware that a bot, not a person, may be responsible for some postings.
- Is there a picture that is meant to speak to your emotions? Is the photographer named? Could it have been AI-generated? Why do you think it is there?
- Was my initial emotional reaction justified? What have I learned?

This activity helps develop emotional regulation - a core aspect of mental well-being and an essential skill in an age of emotionally manipulative content, something that could be a good start and a preparation for the next activity.

Activity 21: Discuss whether honesty matters

This metacognition exercise helps students think about why disinformation can sometimes be spread even by people without bad intentions. This conversation may help slow down their own impulse to share disinformation.

Start your discussion with your group of students by asking them to think if they or anyone they know has ever shared online content that was false, even though they knew it was false. What was that like? What happened?

Using an age-appropriate example that your group of students has come up with, ask them to consider why anyone would share this - **even when knowing it was false**.

- Do they think it's ok to share disinformation?
- Ask them to consider the consequences: what if someone they cared about was the subject of disinformation, and the disinformation was being shared?
- Ask the students to write down their own statement of their position on whether it's ok to share disinformation.
- Then ask them to consider what they'll do the next time they see someone sharing disinformation knowingly.

This exercise is inspired by research from Daniel Effron, London School of Business

Activity 22: Learn to better understand algorithms

Online our information world is increasingly shaped by our likes and preferences, and this impacts our ability to see other points of view. This forewarning exercise explores the benefits and risks of that.

- Ask students to name their favourite music.
- Then ask them to consider their music feeds on their favourite music platform. What music is this feed sharing with them?
- Ask them to consider why it's convenient to have a music streaming platform suggest their next song to listen to.
- Next, ask them to consider that they may be missing out on, such as a wealth of other music.
    - In one or more groups, discuss together how best to break out of the preference-setting silo.
    - Discuss how this works in the information world and how they may be missing out on information/events/perspectives, and why that's a problem.
    - This activity is also a gateway to discussing confirmation bias and how easily our worldviews can become narrowed without us noticing.

Tip 13: Use age-appropriate examples and language

Find simple examples of disinformation or polarising content you're comfortable with and that will not marginalise anyone in your classroom. You can do a lot of great work with simple fake online content such as AI-generated images or videos of animals or celebrities.

Tip 14: Use examples of disinformation from your own subject area

If you're a geography teacher, talk about the flat earth theory. Or if you're a music teacher, talk about perspectives and silos created by e.g. Spotify. Above all, don't be afraid to say: 'I don't know'! This space is developing so quickly, it's impossible to come with all the answers. The top priority is to get students thinking and checking.

Tip 15: Make the fight against disinformation part of your regular teaching

Navigating the online information space safely is a lifelong learning skill, one in which your students will need consistent moments in which to practice this skill.

Cautionary note 6: Emotional safety and reflection

Some activities may touch on emotional or ideological sensitivities. Encourage open discussion and allow students to reflect without judgement. Introduce breathing or reflection pauses as a way to handle emotional reactions, especially during emotionally loaded content analysis.

10. Assessing and evaluating digital literacy in school and the classroom

Assessing student progress in education is a basic and necessary part of school reality in Europe and one of the important tasks that you have as a teacher/educator. This also applies to the assessment of students' levels of digital literacy. Since digital literacy is a relatively new area of education this can be a challenging task. The competences associated with digital literacy are composed of knowledge, skills and attitudes, and are elaborated already in Section 5. Any comprehensive assessment of students should be multifaceted and attempt to measure all three. Mastery and progress relating to digital literacy are best connected to both the (final) product and the process. Furthermore, it will make a difference in how to assess mastery and progress if digital literacy is taught across subject areas (transversal) as opposed to being taught as a separate subject.

What can we do and what should we assess?

A core element of digital literacy is **critical thinking**, since this is what allows students to become resilient in a digital environment, where distorted and false news circulates alongside reliable information. Young people can be assessed in terms of their digital literacy along dimensions such as: (1) their ability to separate facts from opinions, (2) their ability to identify manipulative strategies, (3) their ability to fact-check online information, (4) their ability to find, use and create information in critical, constructive, and creative ways, and (5) their ability to use digital devices effectively.

Types of assessment practices

There are many ways to assess students when promoting digital literacy in education. Common ways to assess mastery and progress are tests of knowledge and skills, teacher evaluations and student self-evaluations, as well as reflection on the outcomes of tests or learning experiences. There are many existing resources and reliable assessment instruments to assess students' digital competence. Such tools assess, for instance, adults and students' knowledge and skills to critically analyse, compare, and evaluate the credibility and reliability of online information.

Assessing students' **knowledge** may include test questions asking students to list credible online sources on different topics, to describe the difference between an opinion piece and hard news, to distinguish between media professionals and citizen journalists, and to describe how algorithms may influence searches.

You can test students' digital literacy **skills** by asking them to identify information meant to deceive and manipulate versus information that is neutral or balanced, or to identify what constitutes evidence for a particular claim, analysis, or judgment. This may include assessment questions asking students to rate how reliable they perceive different articles, headlines or posts on social media are; their 'scores' can then be used to discuss how to improve their skills. Students' digital literacy skills can also be assessed by checking out how well they develop products like videos or digital artwork.

Activity 23: Assess students' ability to identify manipulative headlines

Have your students indicate which of the following headlines are true or false:

a. The government is manipulating the public's perception of genetic engineering in order to make people more accepting of such techniques.
b. Attitudes toward EU are largely positive, both within Europe and beyond.
c. Certain vaccines are loaded with dangerous chemicals and toxins.
d. Ukrainian refugees are "parasites", EU member States treat them better than their own citizens and use them to subvert democracy.
e. Spanish PM Pedro Sánchez is responsible for the blackout in Spain in April 2025.
f. Global warming has led and will lead to more extreme weather events (e.g. floods and droughts), melting ice caps, biodiversity loss, plant diseases and pests, food and fresh-water shortages, desertification and disaster displacements.

Now ask your students to justify their responses, ask them why do you consider the headlines to be true or false? How can you find out if the headlines are correct or misleading?

Note: Headlines 1a, 1c, 1d and 1e are fake headlines and 1b and 1F are real news headlines. Headlines 1a, 1c, 1d and 1e are examples of conspiracy theories. 1c and 1d are emotionally manipulative. Asking an expert or fact-checking the information in other credible sources are good ways to find out what is correct.

Students' fact-checking **skills** can be assessed by tasks getting them to engage in lateral reading,[33] their ability to conduct reverse image searches and text searches with multiple search engines and their ability to debunk disinformation (e.g. the level of complexity). Their skills to identify manipulated images and deep fakes can be assessed by examining to what extent they are skilled at using digital resources to debunk misleading information.

Students' **attitudes** towards online information can also be assessed. It is important that students are not 'naïve' when using online information. Many people feel they are 'immune' to disinformation and trust sources with which they are familiar. Therefore, it is important to assess to what extent they consider online information as credible. They also need to recognise the importance of accessing reliable information. Such issues can be assessed by asking students to rate how trustworthy they consider online information, on a scale from 'all' to 'none', as well as a Question asking them to rate how important it is for them to have access to reliable news. Productive attitudes linked to digital literacy are attitudes that Question the veracity of online information and positive attitudes towards access to reliable news.

Activity 24: Assess students' attitudes towards information[34]

Have your student complete a survey to capture their attitudes towards information. This can be first done individually and then used as part of a group discussion. It can be a useful way to assess attitudes at the start of a series of lessons on disinformation and then repeated at the end.

1. How much of the information on the internet do you perceive as trustworthy?

All ---------- None

2. How important is it for you to consume reliable news?

Not at all important---------- Very important

3. I think there are many wrong ways, but only one right way, to almost anything.

Strongly agree ---------- Strongly disagree

4. One should disregard evidence that conflicts with your established beliefs.

Strongly agree ---------- Strongly disagree

5. I believe that the different ideas of right and wrong that people in other societies have may be valid for them.

Strongly agree ---------- Strongly disagree

6. People should always take into consideration evidence that goes against their beliefs.

Strongly agree ---------- Strongly disagree

Note: Question 1 measures if students are naïve or sceptical to online information, Question 2 measures student attitudes towards reliable news, Question 3 measures dogmatism, Question 4 measures fact-resistance, Question 5 measures flexible thinking and Question 6 measures open-mindedness.

Students' active open-mindedness is also an **attitude** that is important to assess since having a positive attitude towards accepting new evidence and multiple perspectives goes hand in hand with peoples' abilities to navigate disinformation. This can be assessed by observing, through various activities, the extent to which students are willing to change their position on

33 Lateral reading is basically the act of verifying what you're reading as you're reading it.

34 Examples from Nygren, T., & Guath, M. (2022). Students Evaluating and Corroborating Digital News. Scandinavian Journal of Educational Research, 66(4), 549-565. doi:10.1080/00313831.2021.1897876; Roozenbeek, J., Maertens, R., Herzog, S. M., Geers, M., Kurvers, R. H., Sultan, M., & van der Linden, S. (2021). Susceptibility to misinformation is consistent across Question framings and response modes and better explained by open-mindedness and partisanship than analytical thinking. Judgment and Decision Making. In press.

issues when they learn that solid evidence goes against their own opinions.

Students' **attitudes** online and their social media etiquette are also important to assess. This entails looking at students' communication styles when, for instance, collaborating with others online or debating with them. Such assessment can include observing whether they launch personal attacks, insults, disrespect and/or show insensitivity to the misfortunes of others. This can include the use of disparaging emojis, coded words or images particular to their social group.

Consider...

- Assessing students' knowledge, attitudes, and skills both before and after teaching takes place.
- Combining multiple measurement instruments, especially those that have been found to be reliable.
- Assessing over time to see whether what your students have learned is still evident after some weeks or even months have passed.
- Using assessment instruments that measure knowledge, attitudes, and skills.
- Staying up to date on new and more effective assessment instruments which can give a better picture of student mastery and progress, especially since the field of digital literacy is evolving fast.
- Giving feedback to students on where improvement is needed, based on the assessment of their competences.
- Using more open questions and assignments, prompting students to search online, before and after lessons.
- Asking your colleagues how they assess attitudes such as open-mindedness and flexible thinking. If they do not do this already, discuss how such assessment could be implemented.

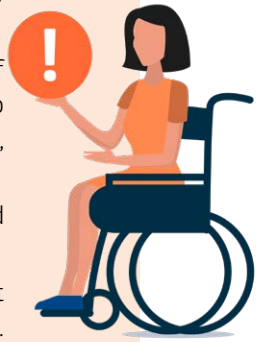
Cautionary note 7: Checking students' understanding during assessment

When using disinformation items during assessment, make sure that students understand which information is accurate versus false. Some might otherwise leave believing the wrong thing. This is all the more important because of the 'continued influence effect', mentioned earlier.

Self-reported measures of digital literacy can be used for discussion, reflection, and observations while bearing in mind that students may be over-confident and not be very good at rating their own knowledge, skills and attitudes. An example of self-assessment statements is given below in Insight 14. These statements come from the European Commission's DigCompSAT (a self-reflection tool mentioned in DigComp)[35].

Insight 14: Examples of statements for self-reflection about digital literacy

- I know that different search engines may give different search results because they are influenced by commercial factors (knowledge/intermediate level).
- When I use a search engine, I can take advantage of its advanced features (skill, intermediate)
- I know how to find a website I have visited before (skill, basic).
- I know how to differentiate promoted content from other content I find or receive online (e.g., recognising an advert on social media or search engines) (skill, intermediate).
- I know how to identify the purpose of an online information source (e.g. to inform, influence, entertain or sell) (skill, intermediate).
- I critically check if the information I find online is reliable (attitude, intermediate).
- I know that some information on the internet is false (e.g., fake news) (knowledge, basic).



The DigComp framework[36] also offers ways to assess students' proficiency through observing and guiding students' learning processes through specific tasks linked to digital literacy. The updated DigComp 3.0 includes competences to tackle disinformation and misinformation as one of its five priorities (along with AI, wellbeing in digital environments, citizen cybersecurity and rights, choice and responsibility). DigComp 3.0 covers key topics related to disinformation including pre-bunking, de-bunking, filter bubbles, bias and social media influencing, as well as new learning outcome statements, which can be used to inspire curricula and education and training content.

The assessment of student learning can take place by observing students' ability to solve (complex) tasks, their level of autonomy, and their cognitive level. The observation of competences requires the development of rubrics. In your assessment you may consider task complexity, level of autonomy, cognitive domain (See the table below) or develop detailed rubrics considering the proposed activity and the specific tasks assigned.

35 https://publications.jrc.ec.europa.eu/repository/handle/JRC123226

36 Digital Competence Framework for Citizens (DigComp) - The Joint Research Centre: EU Science Hub

Level	Complexity of tasks	Autonomy	Cognitive domain
Basic	Simple tasks	With guidance/autonomy and with guidance where needed	Remembering
Intermediate	Well-defined and routine tasks, and straightforward problems/tasks, and well-defined and non-routine problems	On my own/independent and according to my needs.	Understanding
Advanced	Different tasks and problems/most appropriate tasks	Guiding others/able to adapt to others in a complex context	Applying/evaluating/ creating

You can better identify what students need to develop and support the learning process by looking, for instance, at whether students have developed effective search methods for personal purposes (e.g. to browse a list of most popular films), for education purposes (e.g. to research various interpretations of historical events) and professional purposes (e.g. to find appropriate job advertisements). You can also see if they know how to handle information overload (e.g. the increase of false or misleading information during a disease outbreak) by adapting their personal search methods and strategies.

Tip 16: Assess student research skills

Assess students' ability to conduct research into key digital issues. For example, give students an online research assignment to identify the types of technologies used to make cheap fakes and deepfakes. Such research skills will benefit students across all subject areas.

Consider...

- Having students self-assess their level of mastery and progress. Have them also set their own goals relating to their level of digital competence.
- Using internationally developed frameworks such as DigComp.
- Using peer evaluations and portfolios.
- That assessing small group work usually involves both a level of group and individual assessment.
- Having students develop counter-narratives to disinformation campaigns that target certain vulnerable communities. Assess, together with the other students, the 'strength' (how persuasive they are, and why) of the counter-narratives.

Evaluation of effective educational approaches relating to digital literacy

In addition to assessing student competences, it is always good to know whether your teaching approaches are having the impact you hoped. In essence, improvement is always possible. If the lesson, unit, or program has had any effect, then students should be better at some of the assessment questions listed above; for instance, identifying misleading headlines or fact-checking online when the activities are finished. A measurement before you get started and then after you are finished will provide important insights into this issue.

The Question then arises: how do I best evaluate my own and/or the school's digital literacy program (e.g. what tools to use for what purpose? What aspects can and should be evaluated? How to access useful, reliable existing tools? Who to involve in the evaluation)? There are many ways to measure impact but using valid and reliable measurements of student learning is probably the most effective. Asking students to evaluate *how* they have been taught and *what* they have learned can provide useful information but often lacks accuracy, especially if their responses are not anonymous. They might also feel that there is normative pressure to respond in a certain way (social desirability). Thus, evaluating the impact of education to support digital literacy is very important yet also complex. If you have the opportunity, you and your colleagues may benefit from more detailed evaluation in collaboration with researchers interested in learning more about digital literacy in practice.

Tip 17: Connect with universities

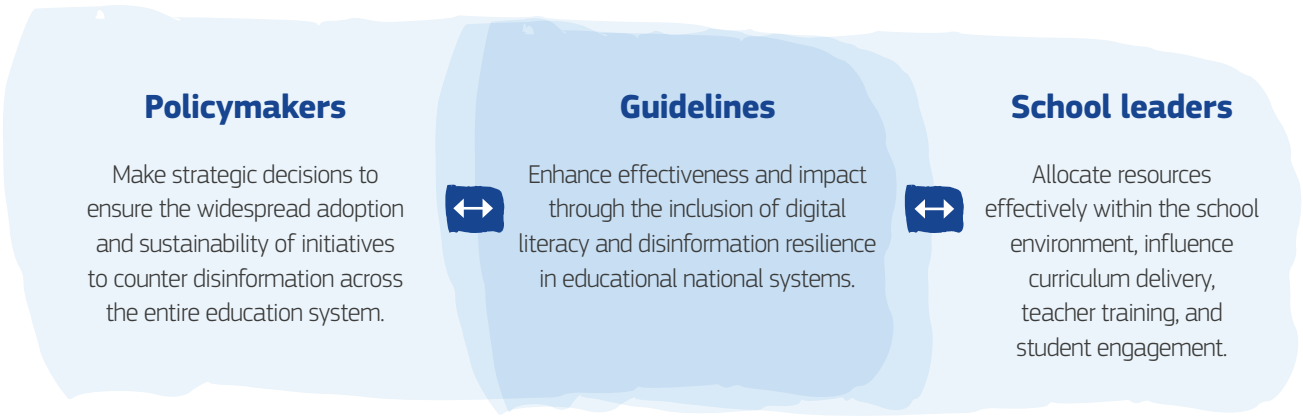
Although perhaps time consuming for teachers/educators, universities are often looking for opportunities to have their faculty or graduate students assess (digital literacy) programmes. It can benefit you and the school to reach out to a local university (e.g., to their Communications Dept) and seek collaboration.

Consider...

- Carrying out or joining an international project through the European Commission's eTwinning programme which connect schools to work on shared projects.
- Researching online what kinds of evaluation tools might be available for the school free of charge or for a very low cost.
- Using the free online SELFIE tool[37] to help your school community improve how it uses technology for teaching and learning?
- Getting in touch with the Safer Internet Centre in your country for training and awareness raising activities.

37 https://education.ec.europa.eu/selfie

11. Recommendations for school leaders and policymakers



This Section provides clear, actionable advice to engage school leaders and education policymakers on fostering digital literacy and building resilience against disinformation.

This Section is specifically designed for school leaders and policymakers, who are uniquely positioned to significantly enhance the effectiveness and impact of digital literacy and disinformation resilience within educational systems. We therefore urge you to read, promote, and use these Guidelines, which offer practical support for teaching in various educational settings - formal and informal alike - rather than providing prescriptions.

The first part of this Section is explicitly tailored for school leaders, who are paramount in this endeavour, given their central role in leading teaching and learning and their ability to allocate resources effectively within the school environment, thereby directly influencing curriculum delivery, teacher training, and student engagement.

The second part is dedicated to education policymakers, at local levels (e.g., municipalities), regional/state (e.g., federal states, autonomous communities/regions; devolved administrations), and central, which are equally vital. They're tasked with making strategic decisions to ensure the widespread adoption and sustained implementation of initiatives to counter disinformation throughout the entire education system.

Given the substantial variations among EU Member States' education systems and different cultural contexts and despite shared concerns about how to tackle disinformation, the recommendations in this Section are designed to be flexible and must be tailored to align with the specific characteristics of each country, region, and school. Crucially, these recommendations consistently align with implementing the Guidelines through a whole-school approach.

Recommendations and tips for school leaders

Pedagogical level

- Encourage and offer basic support to ensure that educators at any level can foster digital literacy with confidence. Teachers don't need to be tech experts—digital literacy is about guiding students to think critically, communicate safely, and navigate digital spaces responsibly.
- Promote active, student-centred teaching methodologies such as project-based learning, flipped classroom, and blended teaching, along with gamification and game-based learning, leveraging games' flexibility and transferability for a more complex understanding of issues.
- Invite teachers to explore practical teaching and learning tips, suggestions for short activities, insights, examples, background notes, considerations, and cautionary notes as some topics can be more challenging and require more preparation to teach.

- Emphasise to educators and other relevant school staff that they can use these Guidelines to foster inclusive learning environments, support dialogue on sensitive topics, and promote emotional wellbeing.
- Champion strategies to counter disinformation, responsibly integrate AI tools in education, deepen understanding of social media's influence, and employ effective assessment methods. Crucially, ensure these efforts are underpinned by available training resources to build robust digital resilience in students.

School policy level

- Develop and implement a comprehensive whole-school approach and cross curricular digital literacy strategy, with clear objectives, a dedicated team, specific activities, robust monitoring and evaluation tools.
- Create a plan for preventing and reacting to disinformation, including media management strategies, school teams and dedicated staff. This plan should underscore that schools are also targets of campaigns that can hugely impact learners' daily life and wellbeing.
- Prioritise more structured pathways for continuous professional development focused on digital literacy, digital citizenship education, tackling disinformation and AI literacy for educators and school support staff.
- Grant dedicated teaching release time to teachers leading projects, enabling them to conceptualise and manage their projects, and effectively involve school leadership to ensure continuous progress and avoid stagnation due to poor time management.
- Consider organising events where teachers and other relevant staff define assessment strategies adapted to the specific context and learners.
- Promote the take-up of self-assessment tools such as SELFIE for Schools[38] and SELFIE for Teachers[39] which are available in all EU official languages and support schools and teachers to take stock of digital capabilities and competences.
- Explore the new European recognition scheme for digital competencies[40] aimed at eTwinning teachers which supports teachers' career progression by acknowledging their learning and development efforts.

38 https://education.ec.europa.eu/selfie

39 https://education.ec.europa.eu/selfie-for-teachers

40 https://school-education.ec.europa.eu/en/learn/recognition-scheme-teachers-digital-competence

Community level

- Link your school's activities to key international and national networks and events, such as Safer Internet Day, Media Literacy Week and International Fact-Checking Day.
- Reach out to local universities or NGOs to seek collaboration for assessing digital literacy strategies, programs or activities.
- Foster school-family partnerships by engaging and supporting parents in developing digital literacy (e.g., parent open house, teacher-parent meetings, parents' workshops etc.).
- Engage with external stakeholders and discuss plans before teaching sensitive topics that might lead to deeper discussions at home.

Tip 18: Explore local, national, or international funding opportunities

For advancing cooperation and exchanges, including job shadowing like the Erasmus+ Programme or European Solidarity Corps.

Tip 19: Update staff on policy initiatives related to digital literacy

Allocate time and input at meetings and development days to informing staff about developments such as the Union of Skills, the Digital Education Action Plan, the Code of Conduct on Disinformation, the Digital Services Act, and the European Democracy Shield.

Recommendations and tips for policymakers

Local level

- Facilitate school-community partnerships and local initiatives by identifying resources to ensure active engagement of parents, wider community members, and relevant external experts (e.g., journalists, librarians, NGOs, reputable influencers, researchers and platform operators.
- Provide a thorough understanding of what these Guidelines suggest for teachers and educators in practice through the establishment of collaborative opportunities for exchanges of practice.
- Support the implementation of comprehensive (self-) assessment tools in schools, using the results in conjunction with the school and community to improve intervention plans.

Regional/State level

- Develop, implement, and regularly review a comprehensive, cross-curricular digital literacy strategy to tackle disinformation, including clear objectives, a dedicated team, specific activities, and robust monitoring and evaluation tools for effective implementation in schools and communities.
- Integrate comprehensive education on disinformation into initial teacher training programs and put in place structured and sustainable pathways for continuous professional development.
- Establish national centres of expertise and resource hubs, including support for gamification and game-based learning, flipped classroom and blended teaching.
- Launch public awareness campaigns targeted at parents and the wider community.
- Support the development and implementation of comprehensive assessment tools that measure not only knowledge but also critical thinking, attitudes, and practical skills.

Central level

- Review existing curricula to assess their current coverage of established digital literacy frameworks, encompassing digital citizenship education, the fight against disinformation, and AI literacy.
- Provide guidelines to support the implementation of cross-curricular integration of disinformation resilience.
- Leverage and raise awareness of existing mechanisms (e.g., via the National Erasmus+ Agency) and funding (e.g., Erasmus+) for projects that can promote the use of the Guidelines in schools and other learning contexts, whether formal, informal, or non-formal.
- Identify resources for initial teacher education and continuous professional development in digital literacy, AI literacy, digital citizenship education and on tackling disinformation.
- Foster pan-European collaboration on digital literacy curricula and resources, leveraging national and international networks.
- Reach out to policy makers in other Member States to share knowledge on how to put in place successful sustainable strategies fostering digital literacy in schools particularly where these have proven to be successful.

Tip 20: Familiarise yourself with the terms in the glossary

Review the definitions and analyse the extent to which national, regional, or local policies and initiatives are aligned with conceptual understandings (e.g., digital literacy encompasses the secure and responsible use of digital technologies to access, manage, understand, integrate, communicate, evaluate, create, and disseminate information.

Tip 21: Organise hackathons for school leaders

Where they can collaboratively develop practical solutions, strategies, and digital tools to enhance digital literacy and combat disinformation within their schools and communities.

12. Resources

In this final section, we have included a selection of sample lesson plans for you to consider using in the classroom as well as a glossary of common terms that you may already have come across in the Guidelines. We have endeavoured as far as possible to ensure that the lesson plans can be used in any classroom setting and do not depend on resources or materials available externally. There are of course multiple resources available online to support teachers in promoting digital literacy in their classroom and tackling disinformation and we strongly encourage you to check out national agencies as well as reputable suppliers including small not-for-profit organisations to see what is available in your own language.

The lesson plans are designed to support teachers and are not designed in a prescriptive manner. They can be used in part or in full i.e. teachers are encouraged to 'dip in' to the plans and utilise the activities most appropriate to their teaching and learning objectives. All plans give an indicative age range for when the lessons might be most suitable. However, as with all teaching resources, teachers are encouraged to exercise their professional judgement and expertise when enacting the plans, based on their specific knowledge of their own classes and context. The plans are designed for 60-minute classes but can be amended accordingly.

The lesson plans are designed with a pedagogy-first approach in mind and utilise several evidence-based inclusive pedagogical approaches. The strategies are not subject-specific and thus, can be used across an array of subjects. The strategies listed below are student-centred and have been shown in the literature to increase students' engagement, sense of belonging and to improve their overall learning experience.

- **Peer Learning** - older students can effectively support younger students in developing online skills through peer learning initiatives. This approach increases the responsible digital usage of older students and enhances their leadership and communication skills while also fostering digital literacy in younger students.
- **Metacognitive strategies** - Metacognition is the awareness and control of our thinking for learning i.e. how we learn best. Metacognition approaches support students to think about their learning more explicitly. For teachers, this means teaching students specific strategies for planning, monitoring and evaluating their learning. For example, exit tickets[41] promote student metacognition, encourage self-reflection, and provide valuable feedback to both students and teachers. Strong metacognitive skills have the power to impact student learning and performance. Hence, supporting the development of metacognition is a powerful way to promote student success.
- **Use of students' own writing/artwork** - making use of students' own writing and/or artwork is seen to improve student engagement with the learning and increase their sense of belonging.
- **Universal Design for Learning (UDL)** - is a framework that aims to make learning accessible and effective for all students by designing flexible learning environments and materials. UDL focuses on providing multiple means of representation, action and expression, and engagement, rather than a one-size-fits-all approach. For example, the lesson plans that follow provide opportunity to respond to the learning in a variety of ways i.e. through writing, art or a piece of drama. For further details please refer to CAST (2024) Universal Design for Learning Guidelines version 3.0[42].
- **Culturally Responsive Teaching** - uses students' customs, characteristics, experience, and perspectives as tools for a better learning experience. Where additional resources are provided to accompany a lesson plan, teachers are encouraged to insert names appropriate to their context (without naming specific students).
- **Jigsaw Method** - is a cooperative learning strategy where students become 'experts' on a specific part of a topic and then teach that knowledge to their peers. This approach fosters collaboration, individual accountability, and deeper understanding of the material.

41 Exit ticket refers to the practice where students answer a Question at the end of the lesson and indicate their level of understanding of the material – they share what they have learned, the insights they have gained and how they can apply the learned.

42 CAST (2024). Universal Design for Learning Guidelines version 3.0. Retrieved from https://udlguidelines.cast.org.

- **Drama in Education** - is a powerful teaching and learning methodology that utilises the creative processes of drama to engage students and enhance their understanding of various subjects. It fosters creativity, collaboration, communication, and critical thinking skills while promoting emotional intelligence and empathy, all within a safe environment.
  Examples of Drama in Education techniques include:
  - **Role on the Wall** - a collaborative activity for developing thoughts and ideas about a character. The outline of a gingerbread figure is drawn on a large sheet of paper which is stuck onto the wall/board. Words or phrases describing the character are written directly onto the drawing or stuck on with sticky notes by students. Teachers are encouraged to engage students' critical thinking skills by asking them to defend *why* they use the specific word to describe a character.
  - **Iceberg Game** - a visual tool used to explore issues by breaking them down into visible and hidden components, similar to how an iceberg has a small tip visible above the water and a much larger mass below. The iceberg can be drawn on the board by the teacher and students provide suggestions as to what is visible above and below the surface.
  - **Forum Theatre** - a form of interactive theatre that encourages student interaction and participation to explore different options for dealing with a problem or issue. Students are given the opportunity to step into a scene, intervene and change the action/outcome. A scenario is presented by several students to the class at least twice. During the second run-through, any member of the class is allowed to shout 'Stop!' when they think a different course of action would produce a more successful outcome. In order to cater for students' different levels of confidence, the student who makes the suggestion, may either replace one of the students who is acting out the scene or, if they prefer, they may provide their suggestion orally and the student(s) already in situ within the scenario, replay the scene in accordance with the suggested change.
  - **Conscience Alley** - also known as Decision Alley or Thought Tunnel is useful for exploring any dilemma faced by a character, providing an opportunity to analyse a decisive moment. The class forms two lines facing each other. Each line should give opposing advice. One student takes on the role of the character making the decision and walks between the lines, as each student speaks their advice. It is important that the student is considered a 'character' to ensure distance between the student and the scenario under discussion. When the character reaches the end of the alley, they make their decision. Younger or less confident participants can walk down the alley in pairs.
  - **Mantle of the Expert** - involves the creation of a fictional world where students assume the roles of experts. For example, students are placed in role as investigative journalists or digital detectives.

Lesson Plan 1: Getting started with Disinformation and Controversial Issues (Linked to Section 4)

Topic	Exploring opinions respectfully through Structured Brainstorming		
Level of Class	Upper Primary (circa 10-12 years old)/Lower Secondary (circa 12-14 years old) [43]	**Duration**	60 minutes

Aim(s)/Objective(s) for the Lesson

To introduce students to collaborating with others respectfully and developing critical thinking skills, which will aid future classwork on prebunking.

Learning Outcomes - By the end of this lesson, students will be able to:

- identify social issues that evoke strong personal responses.
- participate in a structured brainstorming process.
- evaluate and prioritise topics for further analysis.
- formulate arguments respectfully for and against key topics.
- collaborate with others respectfully to generate guiding questions for deeper inquiry.

Resources

Post-its or digital idea board; stickers, markers, or coloured dots for voting; large poster paper or whiteboard; timers or visual aids for transitions; (Optional) digital tool for interactive boards.

Introduction

(5 mins) The teacher asks the question: *What issues at school, in society, online, etc., make you feel strongly, even if people disagree with your views?* The teacher should give 1–2 simple examples to help scaffold the learning (e.g., "*Some people care a lot about animals or about playing fair in games.*").

Development

(5 mins) Silent Idea Generation – the teacher explains silent thinking time and facilitates silent brainstorming. The teacher provides students with paper or sets up online tool and reminds students to write their topic clearly and only one idea per Post-it.

(5 mins) Idea Sharing – The teacher collects the Post-its and reads each one out; the teacher writes all ideas where everyone can see (e.g., board/poster) or screen. Students listen as ideas are read aloud; no commenting.

(15 mins) Clarify & Group – The teacher helps students ask for clarification (*What does this idea mean*?). The teacher facilitates the students as they cluster similar ideas into themes. Students ask clarifying questions and group related ideas. The teacher asks a series of questions such as *Do you agree with this? Why? Why not?*

(10 mins) Voting – The teacher hands out Post-its or stickers and guides students to vote. Students use anonymous Post-its or stickers or coloured dots to vote for favourite topics to discuss in class. Teacher and students count votes and show the top 2–3 topics (depending on the size of the class).

(15 mins) Taking the topics which have emerged, the teacher assigns a topic per group and gives clear roles (e.g., speaker, writer, timekeeper) within each group. The teacher facilitates students to formulate key questions about their topic, and monitors group work; the teacher guides the formulation of arguments and inquiry questions. Within their groups, students list what's good and not-so-good about their topic; and think of 1-2 key questions about it. One student from each group reports back to the class community having identified key questions. The teacher facilitates the presentations and the discussions by asking questions such as: *Do you agree with that statement? Why? Why not?*

Conclusion

(5 mins) The teacher consolidates the learning by asking questions of the class about the material discussed during the class.

Assessment

The teacher will formatively assess students' engagement with the lesson based on idea generation by relevance of ideas; idea sharing – respectful engagement, respectful listening, contributions, relevance; creative thinking - offers an original or thoughtful idea that goes beyond common responses; group discussion - participation (spoken or written); turn-taking - listens and waits for their turn; uses cues like raising hand or group role; argument awareness; use of respectful language; collaboration; question generation - contributes on the creation of open questions related to the chosen topic.

43 Note that here and in the remainder of the lesson plans where age ranges are given, they are purely indicative.

Lesson Plan 2 - Disinformation Detective Challenge (based on a gamified approach linked to Section 4)

Topic	Detecting Disinformation: Become a Digital Detective		
Level of Class	Upper Primary (circa 10-12 years old)/Lower Secondary (circa 12-14 years old)	**Duration**	60 minutes

Aim(s)/Objective(s) for the Lesson

To develop students' critical thinking and digital literacy skills including how to identify common signs of disinformation, understand how false information spreads online and practice respectful online dialogue and source-checking.

Learning Outcomes - By the end of this lesson, students will be able to:

- identify at least three techniques used in spreading disinformation (e.g., emotional language, fake experts, clickbait).
- use critical thinking strategies to evaluate online content.
- engage in respectful discussions about differing interpretations of online content.
- explain the importance of verifying information from multiple sources.

Resources

Projector or shared screen; a fictional 'news website' (teachers should create a basic text-based article); printable or Detective Notebook handouts (below); internet access for fact-checking tasks.

Introduction

(5 mins) The teacher introduces the fictional scenario and shows the news article on screen (created by teacher) with intentional disinformation traits. Utilising Mantle of the Expert, students are introduced to their mission: to become digital detectives. They are told a suspicious news article has been found.

Development

(15 mins) In pairs or small groups, students analyse the article using a checklist (a sample checklist is provided at the end of Lesson 10). The teacher provides guiding questions. Circulates, asks prompting questions, and encourages debate.

(15 mins) The teacher facilitates access to open web resources. If offline, give printed fact cards for students to use. Students fact-check the claims using search engines or teacher-provided resources. They annotate the article together.

(10 mins) Students play the Alternative Story game. Each group rewrites the article from a different angle (satirical, informative, biased, neutral). The teacher guides narrative redrafting. The teacher emphasises how tone, language, and bias affect interpretation.

(10 mins) Groups present their versions and discuss which version felt most convincing and why. The teacher leads the debrief and asks reflective questions: What was hardest to detect? How do emotions affect how we believe things?

(15 mins) Taking the topics which have emerged, the teacher assigns a topic per group and gives clear roles (e.g., speaker, writer, timekeeper) within each group. The teacher facilitates students to formulate key questions about their topic, and monitors group work; the teacher guides the formulation of arguments and inquiry questions. Within their groups, students list what's good and not-so-good about their topic; and think of 1-2 key questions about it. One student from each group reports back to the class community having identified key questions. The teacher facilitates the presentations and the discussions by asking questions such as: *Do you agree with that statement? Why? Why not?*

Conclusion

(5 mins) The students write in their Detective Notebook one thing they learned and one strategy to use when reading online content. The teacher wraps up the session and highlights the key takeaway strategies to detect disinformation online.

Assessment

The teacher will formatively assess students' engagement with the lesson based on informal assessment via discussion and group work; review of Detective Notebooks to assess understanding and personal reflections; optional follow-up homework: bring a questionable piece of online content and analyse it.

Extension

Game Mechanics – Using the table below, the lesson can be turned into a game between students. Teams earn points for completing tasks accurately and creatively. The teacher forms groups of 2-4 students and explains the game mechanics, winning criteria and how to earn points. The teacher can also provide a prize for the winning team and set a leaderboard in front of the class to create extra excitement.

Topic	Detecting Disinformation: Become a Digital Detective		
Level of Class	Upper Primary (circa 10-12 years old)/Lower Secondary (circa 12-14 years old)	**Duration**	60 minutes

Phases of the Game	Activity	Points
1. Mission Briefing	Introduce the fake article ('suspicious news report')	-
2. Analysing Sources	Teams analyse the article with a checklist	+1 per accurate observation (e.g., No author! Loaded language!)
3. Fact-Check Face-Off	Teams fact-check article claims using online tools	+3 for fastest team to verify correctly, +2 for others
4. Taking another angle	Rewrite article from another perspective (satirical, neutral, etc.)	+1–5 based on creativity, insight
5. Reality Check!	Teams compare the original, fake, and rewritten articles, and explain the differences	+1 for each thoughtful insight shared
6. Detective Notebook	Individual write-up on one learned strategy	+2 if completed, +1 bonus for top insight

Lesson Plan 3: Propaganda: All that Glitters is not Gold (linked to Section 6)

Topic	Hate Speech, Disinformation and Propaganda		
Level of Class	Lower and Upper Secondary (circa 12-18 years old)	**Duration**	60 minutes

Aim(s)/Objective(s) for the Lesson

To help students recognise propaganda techniques in messages and images, understand their persuasive intent, and distinguish them from information or factual content.

Learning Outcomes - By the end of this lesson, students will be able to:

- identify common propaganda techniques (e. g. fear, glittering realities, bandwagon).
- learn to analyse media messages critically.
- research and use historical audiovisual information.

Resources

Computers; interactive whiteboard (or a beamer and a screen); Slips of paper or Post-it notes.

Introduction

(15 mins) The teacher introduces students to the key principles of propaganda and common propaganda techniques and explains how audiovisual media, since the early days of cinema and television, have been powerful tools for influencing public opinion. Students also explore historical audiovisual archives, such as those found in public television repositories or platforms like Europeana [44] to find real examples of propaganda in context.

Development

(25 mins) Research – in groups of 3-4, students investigate historical examples of propaganda. They must select the most persuasive one, justify their choice, and present briefly their findings in a public presentation:

- What makes this piece of propaganda effective in your opinion?
- How does this message try to influence the audience's emotions, beliefs, or actions?
- What emotions does it try to evoke (fear, pride, anger, hope...)?
- What colours, symbols, images, sounds, or slogans are used?

(15 mins) Sharing – students present and explain the reasons behind their choices, then vote on which example best illustrates propaganda.

Conclusion

(5 mins) The teacher wraps up the lesson by asking the students to identify common propaganda techniques (e. g. fear, glittering realities, bandwagon) and to identify the methods they used to analyse media messages critically.

Extension

Creation (90 mins) – Each student designs an alternative cover/poster for the propaganda piece they selected, applying key principles of propaganda and artistic/design techniques identified during their research. The cover can be created using traditional art methods or as a digital animation made with AI edition tools.
Gallery Walk & Feedback (10 mins) - students walk around, observe each other's projects, and leave constructive comments (on Post-its or digitally).
Consolidation - the teacher reviews common propaganda techniques and discusses effective counter strategies. Students are then invited to reflect on their work, share what they have learned, and consider whether they can now recognise propaganda in online content.

Assessment

The teacher will formatively assess students' ability to accurately identify the main persuasive elements, visual, audiovisual, and written, in the selected message; to interpret the message's intent, techniques, and target audience; to recognise bias, emotional appeals, or manipulation strategies; active participation in group work; contributions to researching and discussing different sources or examples; clearly explaining their analysis during the presentation or digital post; presenting information in a well-organised, engaging way; using digital or physical tools (art techniques) effectively.
Summative assessment can assess the end product (cover/poster) with a rubric considering relevance to propaganda techniques; creativity and originality; visual/technical quality; message clarity and impact and historical awareness.

44 www.europeana.eu

Lesson Plan 4: AI & Deepfakes (Linked to Section 7)

Topic	AI & Deepfakes		
Level of Class	Lower & Upper Secondary (circa 13-18 years old)	**Duration**	60 minutes

Aim(s)/Objective(s) for the Lesson

To introduce students to the impact that AI is having on everyday life (including the risks associated with AI-generated disinformation and deepfakes, as well as how these are spreading on social platforms and news sites).

Learning Outcomes - By the end of this lesson, students will be able to:

- recognise that an increasing amount of online content, including images, sounds, text and web pages, might be generated by AI software.
- understand that it can be difficult to distinguish AI-generated content from authentic content.
- recognise that AI is also used to produce deliberately misleading and false content, e.g. disinformation and online scams.
- help students understand the biases, fakes and distortions associated with AI.
- encourage students to think critically when verifying materials created using AI tools.
- reflect on the ethics and accuracy of AI-generated content.

Resources

Look for age-appropriate AI-generated fake images, videos, or audio clips from sources like Wikipedia. Another option is to ask students to find and share deepfakes they've come across on social media. Just be sure to verify the content yourself before it's shown to the class. You can also simply ask any search engine to generate sample images by inserting 'famous AI-generated fake images/ deepfakes'.

Introduction

(15 mins) Teacher asks an opening question: Have you seen deepfakes in your social media streams during the last week? Presents examples of video, image and content produced with AI software.

Development

(15 mins) The teacher divides students into small groups of 3-5 to discuss the following questions:

- What advantages or disadvantages could there be in using generative AI?
- When can AI be trusted? What are the advantages and disadvantages of AI?
- How should we deal with online content if a significant part of the texts, images, videos and audio is in one way or another generated by AI?
- How can we ensure that the information we encounter is true and undistorted?

(10 mins) The teacher advises groups to gather their comments using the board or appropriate in class software. The teacher asks the groups to present their findings to everyone. Groups make their verbal presentations.

(10 mins) The teacher leads a feedback discussion about the findings.

Conclusion

(10 mins) Q&A session - Finish the lesson by making sure that learners have understood the lesson objectives by asking a series of recap questions based on the class content. At the end of the lesson, the teacher asks students to reflect on how deepfakes could be used for good purposes.

Assessment

The teacher will formatively assess students' engagement with the lesson based on engagement with opening discussion; teamwork - collaboration and engagement with collaborative teamwork (to include working respectfully and effectively with others); presentation skills.

Lesson Plan 5: Using Generative AI to Tackle Disinformation (Linked to Section 7)

Topic	Using Generative AI to Tackle Disinformation		
Level of Class	Lower & Upper Secondary (circa 13-18 years old)	**Duration**	60 minutes

Aim(s)/Objective(s) for the Lesson

To introduce students to the idea that, when used thoughtfully, AI tools can be a powerful tool in the fight against disinformation.

Learning Outcomes - By the end of this lesson, students will be able to:

- understand how AI tools can help to identify and respond to disinformation.
- use digital tools responsibly and safely.
- apply critical thinking to discuss the ethical use of technology.
- recognise the importance of technology and human judgement in overcoming online challenges.

Resources

AI tool approved by the school management and a set of real or simulated social media posts or news extracts, some of which contain true information and some of which feature disinformation.

Important! Choose presentation materials in advance and check they are suitable for the age group.

Introduction

(10 mins) The teacher begins with a short discussion about what disinformation is, why it is a challenge in digital environments, and how it can be countered. Briefly demonstrates how generative AI can both contribute to and counter disinformation. Q&A session with students on their prior experiences.

Development

(25 mins) The teacher divides students into small groups and assigns each group an AI-based tool approved by the school management for use with students. The teacher provides each group with a set of real or simulated social media posts or news extracts, some of which contain true information and some of which feature disinformation. Students should use their assigned AI tool to analyse the given examples to identify which posts or claims are likely to be disinformation. Students then examine how the AI tool supports their analysis, for example by extracting facts, verifying sources, or highlighting manipulative language or logical fallacies. Students are encouraged to critically assess the strengths and limitations of the AI tool and prepare to share their findings with other groups.

(20 mins) The teacher organises a debate: Can AI help to identify disinformation? The teacher divides students into groups and assign roles. Some groups will argue for the usefulness of AI in tackling fake news, while others should highlight the risks and importance of human judgement.

Conclusion

(5 mins) The teacher concludes the lesson by reflecting on what worked well (or not) when using AI tools; when and why human critical thinking remains essential, reinforcing the idea that AI should complement, rather than replace, careful judgement and lateral thinking; discussing ethical considerations in using AI to moderate or flag online content.

Assessment

The teacher will formatively assess students' engagement with the lesson based on engagement with required tasks and teamwork - collaboration and engagement with collaborative teamwork (to include working respectfully and effectively with others).

Lesson Plan 6 Tackling Cyberbullying (Linked to Section 8)

Topic	Cyberbullying		
Level of Class	Upper Primary (circa 10-12 years old) and/or Lower Secondary (circa 12-14 years old)*	**Duration**	60 minutes

* This lesson plan can be used across classes within second level i.e. where upper secondary students may work with lower secondary students or across education sectors i.e. where lower or upper secondary students work with primary school students. The decision should be made at local level.

Aim(s)/Objective(s) for the Lesson

To introduce the topic of cyberbullying to students, focusing on students' own interpretations of cyberbullying.

Learning Outcomes - By the end of this lesson, students will be able to:

- describe what cyberbullying looks like to them.
- create an artefact which captures what cyberbullying looks like to them.
- explain how someone who is being cyberbullied might feel.
- participate respectfully in a class discussion on cyberbullying.
- collaborate with peers in a respectful manner.
- present in front of the class (either individually or as part of a group).

Resources

Poem**; large sheet of paper; Post-it notes; paper and/or small wipeable whiteboards; markers; Post-it notes for exit tickets.

Introduction

(5 mins) The teacher slowly reads out a poem about cyberbullying to the class. (**Teachers may use a specific poem that suits their own context, or they may use GenAI to create a poem using the following prompt – "Please write a poem on cyberbullying for upper primary school students which details how cyberbullying makes the victim feel" [amend accordingly]).

Development

(10 mins) When the teacher has finished reading the poem, they hold a discussion with the students asking them several questions. The teacher asks the students, having heard the poem - how do you think the student in the poem feels? The teacher utilises Role on the Wall and invites students to write some words on Post-it notes and place them on the paper. The teacher then moves on to some further questions:

- What do you think cyberbullying is?
- Have you ever seen anyone being cyberbullied? What did it look like?
- What advice would you give the student in the poem?
- What questions do you have about cyberbullying? What are you worried about in terms of cyberbullying?

The teacher utilises the board or suitable in class software which allows students to record their responses. (This activity can be completed as a whole class discussion, or within small groups).

(5 mins) The teacher provides students with some statistics i.e.: Cyberbullying occurs on every social media platform, for example on Instagram, Snapchat, TikTok, and Facebook; students of all ages become victims of cyberbullying, but the risk increases as they grow older; cyberbullying is more prevalent than most people think; 15% of adolescents (around 1 in 6) have experienced cyberbullying; the rates are closely aligned between boys (15%) and girls (16%); this represents an increase from 2018, from 12% to 15% for boys and 13% to 16% for girls (Cosma et al., 2024[45]).

(15 mins) The teacher explains that each student has 15 minutes to consider this question: 'What cyberbullying looks like to me'. (This task can also be completed using pair work or small groups). The teacher explains that students can respond to this question through writing a prose piece, a poem or a song, through art, by drawing a picture or through drama, presenting a short scene. The teacher facilitates the work and moves about the room supporting the students and keeping them on task.

(20 mins) At the end of the 15 minutes, either each individual student must present their work to the class, or, if students are working in groups, one student from each group must present their work to the class. The teacher facilitates the presentations. (Artefacts produced can be used as stimuli in a follow up lesson plan).

45 Cosma A, Molcho M, Pickett W. (2024). A focus on adolescent peer violence and bullying in Europe, central Asia and Canada. Health Behaviour in School-aged Children international report from the 2021/2022 survey. Volume 2. Copenhagen: WHO Regional Office for Europe; 2024.

Topic	Cyberbullying		
Level of Class	Upper Primary (circa 10-12 years old) and/or Lower Secondary (circa 12-14 years old)*	**Duration**	60 minutes

Conclusion

(5 mins) The teacher consolidates the learning by asking questions having spent the class discussing the students' views on cyberbullying such as: How would you describe cyberbullying now? Has your view of cyberbullying changed since the start of the class? If so, how? The teacher signposts that, since students have started to discuss cyberbullying, it is important that we know what to do if we face cyberbullying or if we witness it. The teacher signposts that in the next class, the class will work on how to recognise cyberbullying, how to deal with it and how to get support.*** Students are given Post-it notes to complete exit tickets as they leave the classroom. Students write down any remaining questions which they have about cyberbullying. The teacher can use these notes to plan for the following class.

Assessment

The teacher will formatively assess students' engagement with the lesson through the Post-its produced for the Role on the Wall; through the artefacts which are produced; through use of oral questions throughout the lesson and use of exit tickets.

Extension for Upper Secondary

***This lesson plan links with a Cyberbullying Senior lesson plan below, created for upper secondary students which uses peer learning to teach digital skills to younger students, either at lower secondary or primary level. Used in this manner, this lesson plan prepares younger students for exploring cyberbullying in more depth. This can be done by linking in with more senior classes.

Extension for Upper Primary

If the teacher does not wish to engage with senior secondary classes, they may progress to a second lesson on cyberbullying with this class. The class could focus on the impact cyberbullying can have on an individual; recognising cyberbullying and its many forms; exploring challenging scenarios and their appropriate responses and explaining where to seek support and advice on cyberbullying. Teachers can use the artefacts from the above lesson as stimuli for discussion (reading and viewing the work to recap how someone experiencing cyberbullying may feel) and the four scenario cards below (in groups students can consider What would they do? What should they do? in each scenario). The scenarios and responses can be used as the basis for creating a pamphlet/newsletter/ezine which will be distributed amongst other students/ school community/parents.

Scenario Cards
(For use with Lesson Plan 6 and/or Lesson Plan 7)

Teachers' notes: Teachers should insert names appropriate to their own context.

Scenario 1 Addresses how to recognise cyberbullying.

Scenario 2 Addresses the effects of cyberbullying.

Scenario 3 Addresses the importance of reporting, who to report to and how to help someone who is experiencing cyberbullying.

Scenario 4 Addresses how to be safe online.

Scenario 1

_____ is unsure if they are being cyberbullied or not. They have seen some comments posted by their classmates online about them. But they are not sure – maybe is it a joke? They don't want to overreact.

Scenario 2

_____ often posts comments about their classmates and friends online. They think that it isn't doing any harm.

Scenario 3

_____'s friend is being cyberbullied. They don't know what to do, how best to help their friend or whether they should encourage their friend to tell someone or not.

Scenario 4

_____ used to enjoy going online to chat with their friends. But now, they have heard about so many bad things happening online, that they are afraid to go online anymore.

Lesson Plan 7 Tackling Cyberbullying for Upper-Secondary (Linked to Section 8)

Topic	Create a fake to learn how to detect its flaws		
Level of Class	Lower and Upper Secondary (circa 12-18 years old)	**Duration**	60 minutes

Aim(s)/Objective(s) for the Lesson

To empower students to critically reflect and to detect flaws in online content (picture and video).

Learning Outcomes - By the end of this lesson, students will be able to:

- discuss various techniques that can be used to deceive an audience.
- collaborate with peers to work on an in-class activity.
- evaluate content (picture and video) to determine its authenticity.
- present with a classmate.

Resources

Anonymised artefacts produced in lesson plan above with a junior class; (if the teacher teaches this class as a standalone class, teachers can use GenAI to produce a poem on cyberbullying); scenario cards (above); Post-it notes; devices to use a collaborative whiteboard (if this is not feasible, the teacher can record responses themselves).

Introduction

(10 mins) The teacher advises the students that the work that they will read out and show them (or that is hanging about the room) has been created by a junior class in the school (or in a local primary school). The teacher slowly reads out a selection of anonymised poems, songs, piece of writing and artwork, created by the junior classes or allows students to take some time to review the work for themselves. Alternatively, if the teacher does not have artefacts from a junior class, the teacher uses a Gen AI tool to create a poem on cyberbullying to include how it makes the person feel.

Development

(10 mins) When the teacher has finished, they hold a discussion with the students asking students several questions. The teacher asks the students, having heard and viewed the artefacts:

- What do you think having read and viewed the artefacts?
- How do you think the students feel? What is the impact of cyberbullying on individuals?

To help to answer the above questions, the teacher uses the iceberg game and draws an outline of an iceberg template on the board.

The teacher continues to ask the following questions:

- Have you ever seen anyone being cyberbullied? What did it look like?
- What advice would you give the students?
- What questions do you have about cyberbullying? What are you worried about in terms of cyberbullying?

(5 mins) The teacher provides students with some statistics i.e.: Cyberbullying occurs on every social media platform; students of all ages become victims of cyberbullying and cyberbullying is more prevalent than most people think; 15% of adolescents (around 1 in 6) have experienced cyberbullying; the rates are closely aligned between boys (15%) and girls (16%); this represents an increase from 2018, from 12% to 15% for boys and 13% to 16% for girls (Cosma et al., 2024). The teacher asks the students what do they think can be done to help younger students who are trying to handle cyberbullying? The teacher guides the students towards creating a podcast/ presentation which can be shown to junior classes and which will help them tackle cyberbullying.

(20 mins) The teacher provides the students with four scenarios (above) which the students play out using Forum Theatre. The teacher should insert relevant names appropriate to their context into the scenario cards. Students are advised that the aim is to provide advice for students who may be facing each of the four scenarios above.

Topic	Create a fake to learn how to detect its flaws		
Level of Class	Lower and Upper Secondary (circa 12-18 years old)	**Duration**	60 minutes

(10 mins) Having worked through each scenario, the teacher marks up the board with four columns, one for each of the following headings:

- How to recognise cyberbullying
- The effects of cyberbullying
- How to help someone who is being cyberbullied and the importance of reporting
- How to be safe online

Students are grouped into four groups (or more depending on the size of the class), each taking responsibility for a heading. Students use a collaborative whiteboard to provide advice for their specific heading.

Conclusion

(5 mins) The teacher consolidates the learning by asking a series of question such as: How would you recognise cyberbullying? What are its effects? What advice would you give to someone who is being cyberbullied? How can students be safe online? The teacher concludes by signposting that, in the next class they will begin creating the presentation for the junior classes.

Assessment

The teacher will formatively assess students' engagement with the lesson through oral responses; Post-it notes on the iceberg; engagement with forum theatre and responses on the collaborative whiteboard.

Lesson Plan 8 Gender Stereotypes (Introduction to Misogyny) (Linked to Section 8)

Topic	Gender Stereotypes		
Level of Class	Upper Primary (circa 10-12 years old) and/or Lower Secondary (circa 12-14 years old)	**Duration**	60 minutes

Aim(s)/Objective(s) for the Lesson

To introduce gender stereotyping to the class.

Learning Outcomes - By the end of this lesson, students will be able to:

- describe gender stereotyping and its impact.
- recognise gender stereotyping.
- respond to a range of complex scenarios.
- explore appropriate responses to gender stereotyping.

Resources

Photographs of Kathrine Switzer being pulled off the course of the Boston marathon in 1967 (if the teacher prefers, they can substitute with a stimulus that is more relevant to their context); two empty Role on the Walls; Post-it notes.

Introduction

(10 mins) The teacher opens the class asking the students how many of them like running or to be involved in sports? The teacher questions the students:

- Would you believe that there was a time that women were not allowed to run in some sports races?
- What are your thoughts on that?

The teacher shows photographs of Kathrine Switzer, the first woman to run the Boston Marathon in 1967. The photos show her being pulled off the course as it was considered a male only event. (Teachers may choose another example that is more relevant to their context). Students review the photograph(s). Students answer the questions.

Development

(15 mins) Using two Role on the Walls, one to represent a girl and the other to represent a boy, the teacher gives students a series of words on Post-it notes. The teacher invites students to come up to the Role on the Walls, one by one, to place a post it on the Role on the Wall. As the student places the Post-it on the board, the teacher questions the class as to why specific words are assigned to the girl, and why certain words are assigned to the boy. Words such as the list below can be used. Teachers can add other words to the list as suits their own context. If doing so, teachers can consider, for example, colours, professions, activities. The teacher can also ask students to write words on the Post-its themselves (exercising caution).
For example: Burping, Yelling, Rescuing, Dancing, Cooking, Pink, Doctor, Nurse, Cars, Diet drinks, Scientist, Blue, Cleaning, Lawyer, Engineer, Computer programmer, Red, Glitter, Mathematician etc.
Once all the Post-it notes have been placed on the Role on the Walls, the teacher asks the students to look at both Role on the Walls and asks them, what do they notice? Why are certain words here and others there? This leads the teacher to introduce gender stereotyping and its impact.

(30 mins) The teacher explains that the class is now going to use Conscience Alley to make decisions about what to do when they see gender stereotyping. Students work through the scenario cards. (Alternatively, students can come up with scenarios themselves.)

Conclusion

(5 mins) Teacher consolidates the learning by using questions such as: What is gender stereotyping? How can it affect people? What can we do when we see it? Students answer the teacher's questions.

Assessment

The teacher will formatively assess students' engagement with the lesson through oral responses to questions in class; participation with Role on the Wall and engagement with Conscience Alley.

Scenario Cards
(For use with Lesson Plan 8)

Teachers' Notes: These scenarios are designed to encourage empathy, critical thinking, and discussion around equality, respect, and challenging stereotypes. Teachers should insert names that are relevant to their own local environment.

Scenario 1

The class is working on a project. The teacher assigns the students into groups and says each group must choose a leader. When _____ (a girl in the class) volunteers to be the leader, one of the boys in the group, _____, says, 'Girls aren't good at leading. Let someone else do it.'
What could _____ the girl in this scenario do?
What could others in the class do?

Scenario 2

During a school career talk, a visiting speaker says, 'Nursing is a caring profession. Girls are more suited to this as boys don't have that same level of care for others. The boys should think of a career like Engineering as they are better at Maths.'
How could the boys in the class handle this?
How could the girls in the class handle this?
How could the school handle this?

Scenario 3

_____ wants to try out for the local youth football club. When she arrives, some of the boys start laughing and shout 'Football is for boys. You'll only get hurt and start crying.'.
How could she handle this?
How could other boys who are looking on, handle this situation?
How could the coach/club handle this situation?

Scenario 4

The class has been divided into groups to prepare for a presentation at an upcoming parents' evening. In one of the teams, when any of the girls on the team are talking, _____, one of the boys continually interrupts them.
What could the girls in the group do?
What could the other boys in the group do?
What could the teacher do?

Scenario 5

One of the boys, _____, gets emotional in school when he is talking about a personal experience to his friends. One of them responds, 'Stop crying you girl! Man up!'.
How could he handle this?
How could the others in the group handle this?

Scenario 6

One of the girls, _____ wins several prizes at the school sports day. One of the boys, _____, says 'Wow – that was amazing! You did great – for a girl'. He thinks it is a compliment, but _____ doesn't feel that way.
How could she handle this?
How could onlookers handle this?

Scenario 7

One of the boys, _____, is very creative. He loves fashion design and make up and he hopes to work within the fashion industry. When he tells his friends, both the girls and boys laugh at him. One of the girls, _____, says 'Don't be silly! That's only for girls. What would a boy know about fashion and make up?'.
How could he handle this?
How could the girls in the class handle this?
How could the boys in the class handle this?

Scenario 8

The school has just started a new lunchtime Coding Club. There are posters for the club, seeking new student members all over the school. _____, one of the girls notices that there are not any photos of girls featured on the poster. All the images are of boys. She wants to join the club, but she doesn't feel very welcome.
What could she do about this?
What could the school do?

Lesson Plan 9: Create a fake to learn how to detect its flaws (Linked to Section 8)

Topic	Create a fake to learn how to detect its flaws		
Level of Class	Lower and Upper Secondary (circa 12-18 years old)	**Duration**	60 minutes

Aim(s)/Objective(s) for the Lesson

To empower students to critically reflect and to detect flaws in online content (picture and video).

Learning Outcomes - By the end of this lesson, students will be able to:

- discuss various techniques that can be used to deceive an audience.
- collaborate with peers to work on an in-class activity.
- evaluate content (picture and video) to determine its authenticity.
- present with a classmate.

Resources

Access to an AI tool allowed within the school, devices for students.

Introduction

(5 mins) The teacher uses an AI tool that the school allows, and which can generate pictures or videos. Show the students how to write a prompt that says what picture/video you would like to generate.

Development

(5 mins) Together with the teacher, the students look at the picture/video together. The teacher discusses with the students if the outcome is what everyone had pictured in their mind, and they refine the prompt until satisfied. The teacher asks the students 'Can anyone spot something that tells that this is AI-generated?'

(10 mins) The students work in pairs to write prompts that they guess will generate a certain picture/video they have in mind. The objective of the content produced is to deceive the audience (the classmates) that it is real. The teacher instructs the students that they are to present the picture/video as an imagined news article or social media content, together with a few sentences describing the picture.

(10 mins) Each pair presents their picture/image to the class and the class discusses which example is most persuasive in making the class think that it is real.

(5 mins) The teacher shows samples of fake images generated simply by inputting 'famous false images' into a browser.

(10 mins) The students create AI-generated pictures/ videos from the prompts they created. The students must write a few sentences about their pictures/videos so it will look like an imagined news article or social media content. Let them paste their work into a joint document or upload it to a specific folder, which the teacher can access.

(10 mins) The teacher shows the students' pictures/videos to the class and reads the texts describing the content. The teacher asks the students what they spot that might tell them that the pictures/ videos are AI-generated.

Conclusion

(5 mins) The teacher wraps up the lesson by asking the students what they have learnt.

Assessment

The teacher will formatively assess students' engagement with the lesson through oral responses to questions in class; engagement with pairwork/teamwork; presentation skills and argumentative/persuasive skills.

Lesson Plan 10 News Challenge (Linked to Section 9)

Topic	Using critical thinking skills and tools to identify fake news in online content		
Level of Class	Lower and Upper Secondary (circa 13-18 years old)	**Duration**	60 minutes

Aim(s)/Objective(s) for the Lesson

To empower students to determine fact from fake.

Learning Outcomes - By the end of this lesson, students will be able to:

- discuss various journalistic techniques that can be used to determine if content is fact or fake.
- collaborate with peers to work on an in-class activity.
- evaluate exemplars to determine its authenticity.

Resources

Tool cards (below); internet access; devices; locally relevant examples.

Introduction

(5 mins) The teacher opens the class by using Mantle of the Expert. The students are placed in the role of experts as journalists. The teacher outlines that we can find lots of photos, videos, and articles about just about any topic imaginable online. We can trust many of them. Others are misleading - sometimes intentionally so. The students will learn about ten separate tools, each one corresponding to one of the actions in the Disinformation Checklist below, and, acting as expert journalists, they will work on some examples to identify if the examples are fact or fake and what clues help to figure out if a piece of content is true or fake.

Development

(20 mins) The teacher divides the class into ten groups and gives each group one tool card. The teacher uses the Jigsaw method to help the students to 'teach' each other the tool that is on the card. The teacher identifies one student in the group who will 'teach' the card and move (clockwise) after reviewing the first tool card. Each group takes two minutes to understand the clue card, being 'taught' by their peer. Then the student who is to move in each group, moves clockwise and takes the tool card with them. Once they arrive at the 'new' group, the student 'teaches' the new group about the tool. This continues until all groups have seen the ten tools. At the end of the jigsaw cycle, the teacher asks questions of the class to ensure that they fully understand the tools before moving on with the next part of the task.

(15 mins) Some people said the 2025 Los Angeles wildfires happened only because of human mistakes, not because of climate change. This idea was shared by some media and public figures, including President Donald Trump. False stories, like claims that the Hollywood Sign had caught fire, made the fires seem sudden and chaotic, suggesting mismanagement was to blame. Yet while human actions can affect fires, climate change also makes them worse by making it hotter and drier, which helps fires spread faster.

The teacher tells the students they are now ready for their first challenge - 'Hollywood sign on Fire'.

Lots of people are sharing this story on X and TikTok. It says that the famous Hollywood sign is burning, during the Los Angeles wildfires in January 2025. Source: https://x.com/valueandtime/status/1877215657437123046.

As determined by the teacher, students either as a class discussion or in their groups, using their journalistic toolbox must determine if the example is true or fake and if fake, what are the clues that show that it is fake?

The teacher asks the students a series of questions to scaffold the learning:

- Can you see who wrote the text? what can you find out about the author? Do you think s/he is trustworthy?
- What do you notice about the spelling and grammar? Are the words and punctuation all in the right places?
- If students have access to the internet, use a search engine (e.g. Google) and find out if someone else, or another news organisation, has written anything about this post. Compare the results. What do you notice at first glance?
- Do you think that the information in this content is fact or fake?
- How did you come to this conclusion?
- Give two reasons why you think this post went viral on the internet?
- Explain why you think it is important to double check these types of stories before sharing them with friends. Describe the consequences of forwarding them along without doing some investigative work first.
- Take another look at the toolbox. Which of the tools did you use to investigate the story?

Students are given 10 minutes to work through the example. Allow at least 5 minutes for a discussion afterwards.

Topic	Using critical thinking skills and tools to identify fake news in online content		
Level of Class	Lower and Upper Secondary (circa 13-18 years old)	**Duration**	60 minutes

(15 mins) The teacher provides a second example of a fake image to discuss. Similar to the above, the teacher asks the students a series of questions to scaffold the learning (as above). Students are given 10 minutes to work through the example. Allow at least 5 minutes for a discussion afterwards.

Conclusion

(5 mins) The teacher wraps up the lesson by asking the students what they have learnt.

Assessment

The teacher will formatively assess students' engagement with the lesson through oral responses to questions in class; engagement with teamwork and their argumentative/persuasive skills.

Disinformation Checklist

 **SOURCE CHECK** **By source we mean: where did it come from?** Where did you read or see this piece of news? What do the contact details tell you? Is the author credible?	 **DIG DEEPER** **Don't just read the headline:** What's the whole story? Headlines often exaggerate to attract clicks. Are there links in the text you can click that could tell you more?	 **COMPARE** **Take a look at other sources and compare them:** What do others say about the issue? This is very easy to do with a search engine such as Google, Bing or others.	 **DATE CHECK** **Take a look at the date:** Is this a recent piece of news or has somebody just copied an image or story?	 **HA HA** **Is it a joke?** Does the report seem a bit crazy? It could be a joke or satire, so the true meaninig might be different. Check the source and the authors.
 **EXPERT** **Talk to the experts:** What do weel-informed people say about it?	 **KNOW YOUR OWN MIND** **It's really important to think for yourself!** What are your own instincts telling you? Have you already formed an opinion about this issue that might be influencing you?	 **IMAGE SEARCH** **Where does the image or video come from?** A reverse image search is easy to do and sometimes reveals a lot about the image.	 **CHECK YOUR EMOTIONS** **Does a post make you feel angry or anxious?** Are you emotions shaping your view? Social media manipulates emotions - breathe before you react.	 **MIND THE ALGORITHMS** **Online algorithms show you what you like:** Are you seeing a balanced range of content? Are you actively engaging with different viewpoints? Adjust your settings to broaden your perspective.

Definitions of key terms used in these Guidelines

The following definitions have been taken primarily from international policy documents and frameworks but have been shortened for reading purposes.

Algorithms: are mechanisms on digital platforms that select what content is displayed for users based on relevance and preferences.

Artificial Intelligence (systems): machine-based systems designed to operate with varying levels of autonomy and may exhibit adaptiveness after deployment. They may for explicit or implicit objectives, infer, from the input received, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments.[46]

AI Literacy: understanding the opportunities and risks related to AI usage as well as the technical knowledge, durable skills, and future-ready attitudes required to thrive in a world influenced by AI. It enables learners to engage, create with, manage, and design AI, while critically evaluating its benefits, risks, and ethical implications.[47]

Bot: an autonomous program on the internet or other network that can interact with systems or users.

Cancel culture: a cultural phenomenon in which an individual thought to have acted or spoken in an unacceptable manner is ostracized, boycotted, shunned or fired, often aided by social media.

Cheapfakes: altered media that have been changed through conventional and affordable technology (e.g., face swapping).

Clickbait: content whose main purpose is to attract attention and encourage visitors to click on a link to a particular web page.

Deepfakes: AI-generated or manipulated image, audio or video content that resembles existing persons, objects, places, entities or events and would falsely appear to a person to be authentic or truthful.

Digital citizenship: the capacity to participate actively, continuously, and responsibly in digital environments (local, national, global, online) at all levels (political, economic, social, cultural, and intercultural).

Digital footprint: traces of data left by individuals using the internet, including websites visited, emails sent, and other information shared. A digital footprint can be used to track an individual's online activities and devices.

Digital literacy: the ability to access, manage, understand, integrate, communicate, evaluate, create, and disseminate information safely and appropriately through digital technologies. It includes competences that are variously referred to as information literacy and media literacy, computer, and ICT literacy.

Disinformation: verifiably false or misleading information that is created, presented, and disseminated for economic gain or to intentionally deceive the public. It can cause public harm.

Echo chambers: environments in which the opinion, political leaning, or belief of users about a topic gets reinforced due to repeated interactions with peers or sources having similar beliefs and ideologies.

Emoji: a small digital image or icon used to express an idea or emotion.

Filter bubble: a situation in which people only hear or see news and information that supports their existing beliefs and preferences. This effect can be heightened online depending on which persons or what pages users choose to follow or connect with, as well as algorithms displaying content based on past online behaviour, preferences, and settings.

46 This definition is in alignment with EU AI Act, which defines 'AI systems' as "a machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments."

47 This definition is in alignment with the draft AI literacy framework for primary and secondary education, and builds on the EU AI Act , which defines "AI literacy' as 'the skills, knowledge and understanding that allow providers, deployers and affected persons, taking into account their respective rights and obligations in the context of (the) Regulation, to make an informed deployment of AI systems, as well as to gain awareness about the opportunities and risks of AI and possible harm it can cause."

Malinformation: Factually accurate information that is intentionally used to cause harm.

Media literacy: the skills, knowledge and understanding which allow citizens to use media effectively and safely and which are not limited to learning about tools and technologies but aim to equip citizens with the critical thinking skills required to exercise judgment, analyse complex realities and recognise the difference between opinion and fact.

Meme: an image, video, piece of text, etc., typically humorous in nature that is copied and spread rapidly by internet users, often with slight variations.

Metacognition: comprises both the ability to be aware of one's cognitive processes (metacognitive knowledge) and the ability to regulate them (metacognitive control). Metacognitive knowledge encompasses knowledge of oneself as a learner (such as strengths, weaknesses, preferred time of day for study, preferred study location) and how the human brain stores, organises, and retrieves information as well as effective strategies to complete the task. Students with more metacognitive knowledge learn better than those with less metacognitive knowledge.

Misinformation: verifiably false information that is spread without the intention to mislead and often shared because the user believes it to be true.

Phishing: an attack that aims to steal a person's money or identity, by getting somebody to reveal personal information - such as credit card numbers, bank information, or passwords - on websites that pretend to be legitimate.

Polarisation: as a social phenomenon refers to the process in which individuals' attitudes, beliefs, or opinions become more extreme in opposition to one another.

Prebunking: a process where people are warned in advance of the mechanisms and behaviour used to spread disinformation to build resilience. It builds on the reasoning that 'an ounce of prevention is worth a pound of cure'.

Propaganda: the spreading of ideas, information, or rumour for the purpose of helping or injuring an institution, a cause, or a person.

Source: the starting place or the origin of a piece of information.

Troll: a person who deliberately tries to offend or directly attack people by posting derogatory comments. **Troll farms** or **Troll factories** are an institutionalised group of internet trolls that seeks to interfere in political opinions and decision-making.

Verification: the process to ascertain that a site, an address, an account, or information is authentic and real.

NC-01-25-183-EN-N

Publications Office
of the European Union

ISBN 978-92-68-32865-1