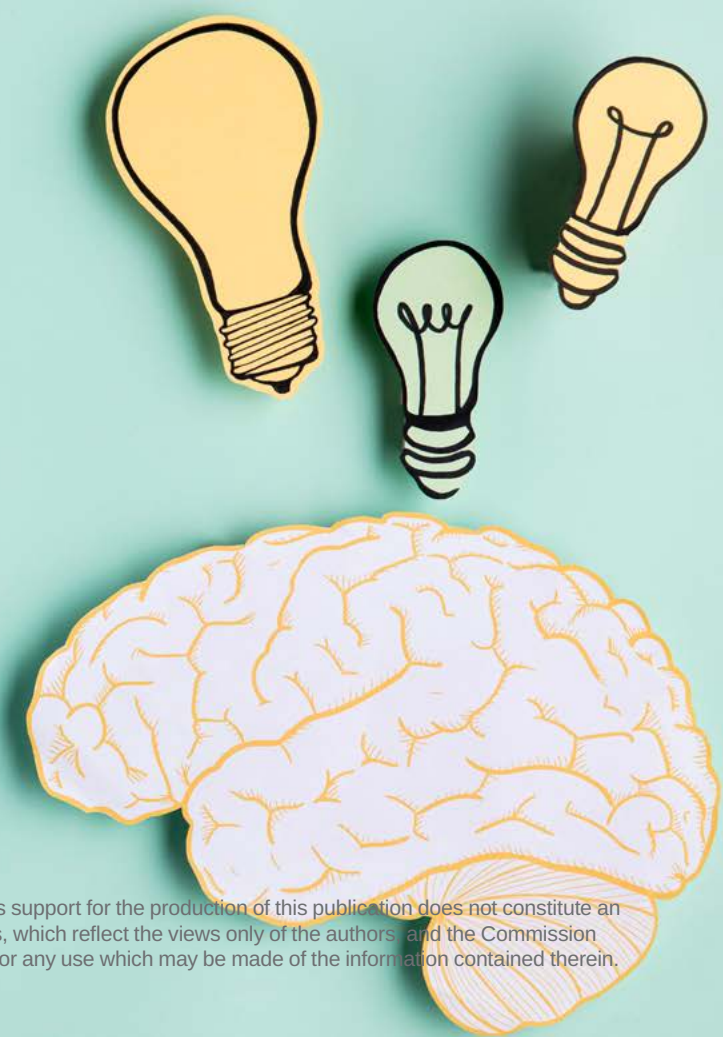
NERDVET

LEARN SMART THINK SMARTER

Educational Toolkit Guide



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1. Glossary

TERM	MEANING
COGNITIVE PSYCHOLOGY	Scientific study of human thinking and information processing (e.g. decision-making, memory, attention, problem solving, etc.)
HEURISTICS	Mental strategies or processes used to solve/simplify problems, allowing to quickly make judgements
iVET	initial Vocational Education and Training
LEARNER	Any individual in the process of gaining knowledge or skills; hereinafter used interchangeably with the term "student"
METACOGNITIVE SKILLS	“One’s knowledge concerning one’s own cognitive processes or anything related to them” (Flavell, 1976, in Kaplan et al., 2013)
TECHNICAL SKILLS	Abilities and specialised knowledge that are needed to perform a practical task or job
SOFT SKILLS	"Dynamic combination of cognitive and metacognitive skills, interpersonal, intellectual and practical skills" (Haselberger et al., 2012)
TOOLKIT	Curated set of tools and resources designed to provide guidance and practical instructions on a specific matter
TRAINER	Teacher; individual who teaches or trains someone[1]
VET	Vocational Education and Training

[1] The term “trainer” is adopted in this Guide in order to better reference the iVET perspective.

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Introduction

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2. Introduction

Critical thinking and media literacy are particularly important topics for initial Vocational Education and Training, as they are

the basis of students' autonomy and a key factor in preparing students for success in life and for a proactive and democratic citizenship (Hitchcock, 2018; Tommasi et al., 2021).

Indeed, in the current times of social and labour transformation, in addition to changed professional competences, soft skills and metacognitive competences are increasingly necessary for young learners, which raises the question of how to properly equip them with the tools and knowledge to best respond to these needs.

The present Educational Toolkit Guide is developed within the Erasmus+ KA3 "NERDVET - THINK SMART! ENHANCING CRITICAL THINKING SKILLS & MEDIA LITERACY IN VET" project, whose scope is to develop and test an **Educational Toolkit to support teachers in improving critical thinking and media literacy in iVET students.**

Within the NERDVET project, the Educational Toolkit was first designed with a bottom-up approach ("from trainers for trainers"), then tested by a group of trainers, engaging students from five EU countries (Italy, Spain, Portugal, Greece, The Netherlands)[2] and, finally, fine-tuned according to the results of its implementation on the field.

The Educational Toolkit represents a unique and **action-oriented training model developed by the NERDVET partnership** to address gaps and challenges concerning students' capacity to think and behave critically, being able to identify and manage fake news, biases, and irrational beliefs.

[2] For full reference to the outcomes of the NERDVET pilot action, please consult the "Report on the testing of the Educational Toolkit" available in the "Results" section of the NERDVET website.

FINAL AIM

1. Offer VET staff a tailored training pathway, including a wide range of complementary resources with the aim of supporting VET providers in the integration of critical thinking and media literacy training in their educational programmes;

2. Enhance students' critical thinking when they use/interact with digital technologies, increasing – at the same time – their media literacy;

3. Contribute to spread knowledge and raise awareness amongst the identified target groups (iVET trainers and students, and policy makers) on the benefits that critical thinking and media literacy skills' enhancement can have for the overall society.

The purpose of this document is therefore to present the full range of theoretical, methodological and practical knowledge and resources that form the NERDVET Educational Toolkit, guiding its direct users, trainers, in the implementation with the final beneficiaries, students.

2.1 Training implementation

In order to provide a first introduction for the users of the NERDVET Educational Toolkit, the present section aims at describing the complimentary tools that it encompasses, particularly focusing on how to best exploit them to transfer the identified training approaches and practices in VET providers' training curricula.

Starting with the next chapters of this Guide, the following resources are provided:

1 Identification of the Toolkit's **key targets**, i.e.
a) direct users: teachers and trainers and
b) final beneficiaries: students.
In this section, the intended key targets of the Toolkit are presented, highlighting in which ways they can be involved in its integration in training activities, as well as how to promote their engagement and perceived impact.

2 Introduction to the **theoretical background** underpinning the NERDVET model, whose presentation is preliminary to the understanding of the developed training approaches and practices, as well as of the needs that they aim to fulfil. The context in which the NERDVET project operates is described by identifying valuable sources from the scientific literature devoted to the study of critical thinking and media literacy and to the analysis of the iVET system.

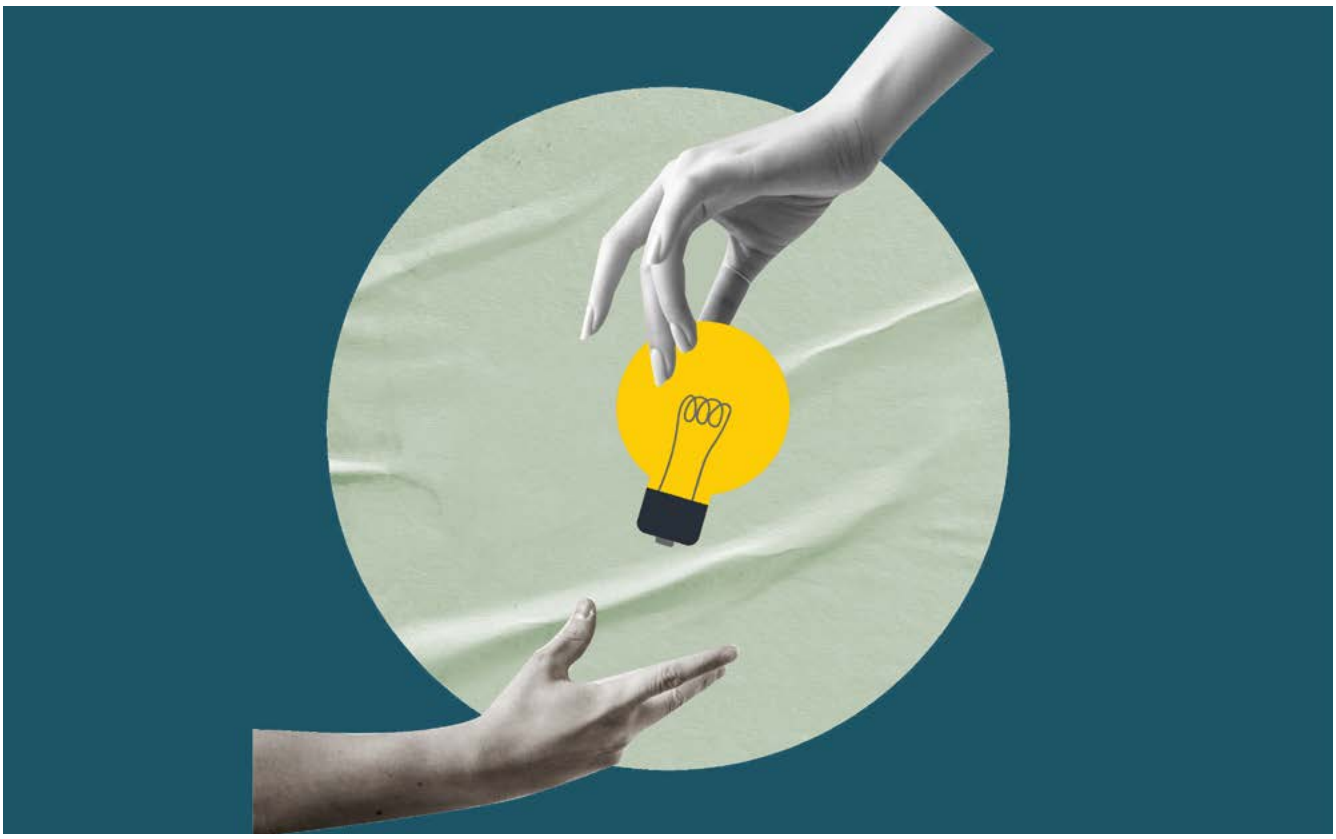
3 Presentation of the **training approaches** and description of how they can be used and integrated in VET training curricula by means of **practical applications and exercises.** The practical exercises are organised in 9 lessons around 3 training approaches and are designed to be easily adapted (in length and complexity) and used with a varied (in terms of age, educational needs and contexts) beneficiary group of iVET students.

This section is the result of a collaborative work carried out by the VET provider partners of the NERDVET project. Coupling the knowledge gathered at internal level, through external resources, and by means of the NERDVET pilot action, the training approaches are exemplified and translated in concrete applications with simple, practical instructions for the implementation of training interventions meant to foster critical thinking and media literacy.

4 Suggestions of **assessment methods** aimed to evaluate the impact of the proposed critical thinking and media literacy training on students.

5 A **bibliography** of the most relevant resources that fed the theoretical background of the Toolkit.

6 The NERDVET **Directory**, a collection of useful links and online materials/resources in English and national languages, for further exploration and additional insights on critical thinking and media literacy.



The NERDVET Educational Toolkit is not, however, composed of this Guide only, as more training materials have additionally been developed to support teachers and trainers in the integration of critical thinking and media literacy training in their didactical curricula.

Such materials are all available in a dedicated **NERDVET e-learning platform** for trainers *(https://www.schoolplus.it/en/categories/nerdvet)*, accessible upon the registration and enrolment to the course by interested users. The platform, acting as a comprehensive repository of all training materials produced by NERDVET, hosts:

7 An interactive course designed around the topics addressed in the Toolkit. Within the course, the following resources are proposed:

- Ten **video tutorials**, animations designed by the NERDVET partnership to summarise, explain or describe briefly a concept, a process or a situation related to critical thinking and media literacy. Their structure is based on a storytelling approach: they include exemplifications/applications of concepts to be dealt with during the training, similes and metaphors to promote group or individual reflections, and a conclusive remark with a synthesis of the concepts or with a question aimed at starting a discussion and/or another activity. Each animation lasts from one to two minutes and is available with voice-overs, subtitles and transcripts in English, Italian, Spanish, Portuguese, Dutch and Greek language.

- A **resource centre** where users will find a variety of materials complimentary to the implementation of the Educational Toolkit, among which are:

    - additional outputs produced within the project, such as the “NERDVET Research report on the state of the art of the scientific literature on critical thinking and media” and the “Guidelines for implementing critical thinking skills in VET”;
    - supporting resources, materials and documents that were collected or directly developed by the trainers that have tested the Toolkit in its piloting phase.

- Dedicated **spaces for discussions**, to allow trainers to have a place to exchange views and opinions on the Toolkit implementation and related matters with other peers that are also experiencing the process.

8 The video recordings of two **webinars,** aimed to further expand on the concepts of critical thinking and media literacy, as well as on the cognitive psychology approach used to develop the three training techniques, entitled:

- Critical Thinking and Media Literacy in the Context of iVET: State of the Art & Training Agenda
- NERDVET Educational Toolkit: Focus on Training Techniques

2.2 Toolkit key targets

2.2.1 The Direct Users: Teachers and Trainers

The role that trainers can play in enhancing critical thinking and media literacy skills of learners is of paramount importance because, by working on these competences in regular training - including technical subjects - students can acquire or further develop them for a transversal use, from educational to personal contexts. Consistently, one of the ultimate goals of the NERDVET Toolkit is to offer **VET teachers a training pathway, created by trainers for trainers, to unleash their fullest potential as amplifiers of innovation.**

In order to successfully perform this role of facilitators, trainers should have:

MOTIVATION

To have a genuine interest and willingness to work on these topics.

FLEXIBILITY

To adapt the contents of the Toolkit to fit specific learning needs, based on the subject matter and the characteristics of individual students or classes.

EMPATHY

To listen to their students and understand their points of view, considering their experiences, life contexts and expectations.

OPEN MIND

To consider and discuss different teaching approaches and perspectives, regardless of prior knowledge or conceptions.

CREATIVITY

To imagine and invent new ways of approaching training topics, making them interesting and appealing to learners.

OPERATIONAL AND METHODOLOGICAL HINTS

Before trainers are left to integrate the NERDVET training in their daily professional activity, paying particular attention to some operational and methodological aspects has proved to be positive in support of the entire process:

PLANNING AND PREPARATION

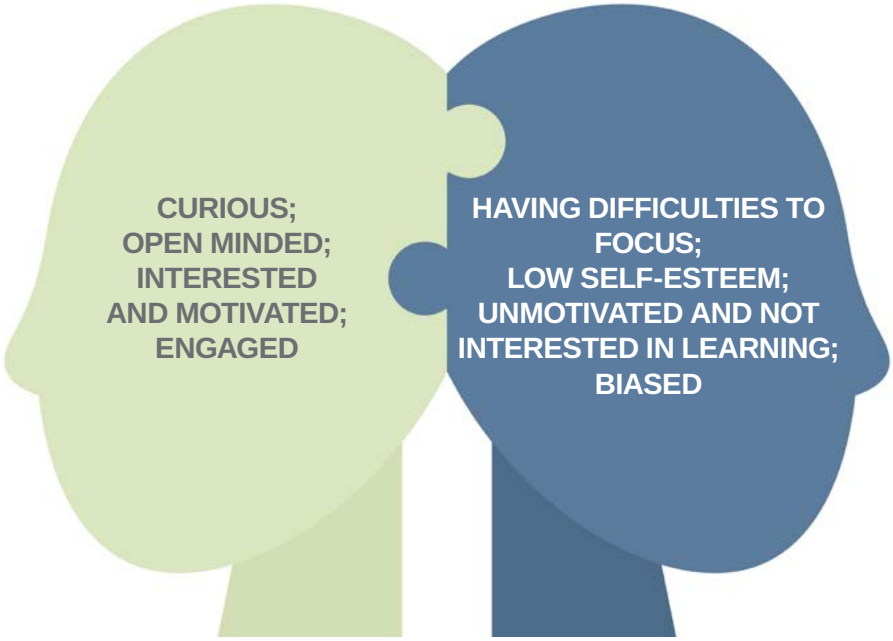
SELF-TRAINING	• Read carefully through the NERDVET Educational Toolkit Guide and supporting materials, available in the Schoolplus e-learning platform. • Search for additional sources, if necessary.
COLLABORATIVE WORK	• Discuss with other trainers, even from other subject matters, about their practices. • Combine the outcomes of the discussion and enrich them with any pre-existing training material. • Establish collaborations with other colleagues to make critical thinking and media literacy a cross-curricular training content and also with any technical support staff, in case the use of specific technologies is foreseen.
SUBJECT INTEGRATION	• Connect and integrate the Toolkit with other subjects of the curriculum, as critical thinking and media literacy are transversal to all areas of knowledge. • Devote time to gradually develop the subject in the class.
ADAPTATION	• Identify and consider learners' characteristics. • Adapt the exercises to the characteristics of the group of learners. • Try to connect the activities with actuality and real-life experiences.
ANTICIPATE DIFFICULTIES	• Pay attention to time management. • Identify in advance any lack of or difficulty with potentially needed technical equipment. • Plan different types of approaches and exercises in view of possible resistance or difficulties from learners.

IMPLEMENTATION

LEARNERS' ENGAGEMENT	• Anticipate that leaners cannot always be mentally available to deal with such issues and duly consider this. • Start from what learners already know or from their personal experiences. • Create relations between their lives or interests and the topics of the proposed lesson. • Involve learners actively in all activities, leave them room for expressing themselves and encourage them to ask questions.
ACTIVITIES STAGES	• Briefly introduce the topic and let students share their prior knowledge on it. • Use online or interactive platforms to trigger learners' engagement and reflection. • Use the NERDVET video tutorials to kick off a discussion with the learners. • Apply the training approaches and practical exercises from the Toolkit.
CARRYING ON	• Make sure to draw conclusions from all activities carried out. • Use the assessment suggestions provided in Chapter 4.4 of the present guide. • Show learners the benefits of developing the capacity of solving problems on their own, their independence and their ability to later identify useful resources for their educational career.

2.2.2 The beneficiaries: students

Motivation and active engagement are two key factors for any successful learning process, but this may be even more crucial in the VET sector - where students often are teenagers or young adults that come from disadvantaged socio-economic backgrounds and/or have learning difficulties.
Consequently, it is important to start from the assumption that, in a group of learners, there will be individuals with different characteristics such as:



Therefore, in order to fully benefit from the NERDVET training, **learners must be put at the very centre of the learning process, with a motivational approach**, for the twofold purpose of:

> Focusing not only on technical skills, but also on soft ones, as the latter are crucial for the individual to accomplish their personal and professional goals and be proactive citizens. Indeed, an important added value of the **proposed training activity is closely connected to the acquisition of soft skills**, which are more and more required in the current fast-changing world, where technical skills can quickly become obsolescent.
>
> Allowing the **trainer to be perceived as a proactive actor or positive "influencer"**, who is capable to turn teaching into a mutual learning process, where dialogue and support paves the way for learners' personal and professional development.

To conclude, providing the right tools to think critically and use media information successfully represents a unique opportunity for VET students, who are to face a societal and working context in constant change. As nowadays the internet and social media are the environments where young people are more likely to spend their time in accessing information, communicating, learning, playing, watching videos and so on, it is key to train them to adopt a critical approach when moving or acting within these contexts.

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Scientific background

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3. Scientific background of the Toolkit

To shed light on the theme of enhancing critical thinking and media literacy in the context of iVET, as the NERDVET project aims to do, it is important to first present its underpinning scientific model.
The purpose of this section is indeed to provide an overview of the NERDVET scientific background, which is strictly linked and necessary to the understanding of the training approaches later proposed.

Below is therefore a summary of the findings of the research and review of the available scientific literature[3] that were carried out as preliminary steps to the development of the NERDVET Educational Toolkit. Continuing with the project's proposed definition of critical thinking and media literacy, a common framework is set by recalling the cognitive psychology approach, which was adopted for the identification of the psychological and behavioural factors that contribute to increasing these skills.

3.1 The context of iVET

Due to the nature and purpose of Vocational Education and Training programmes to equip students with competences and skills that can successfully lead to employment in alignment with the labour market's needs, learning pathways are majorly associated with the supply of technical and practical skills. However, this entails that the promotion of such hard skills can overweigh the development of transversal, soft ones, as critical thinking skills and media literacy are.

In more detail, **VET curricula do not contemplate neither a systematic or integrated teaching of critical thinking and media literacy** - either as specific training contents or as a cross-cutting ones – nor dedicated competence standards. Adopting effective initiatives is therefore left to VET centres, which – however – often do not have the means and opportunity to act independently. Although some transversal skills related to critical thinking are embedded in some training subjects, they are not sufficiently highlighted, integrated or presented in a structured form, i.e. they are limited to sporadic interventions that tend to focus exclusively on circumscribed aspects.

Nowadays, such competences are not only crucial in young people's vocational training pathways (iVET), but also in a wider and wider portion of their personal, professional and social life. Digital technologies are indeed systematically used to access unprecedented amounts of information and news, which shape the way in which behaviours and opinions form.

Against this prevailing background at European level, competent institutions and policy makers have introduced several policy and financial tools[4] to put emphasis on critical thinking and media literacy as key objectives for the education and training sectors, as well as to guide and support concrete initiatives from practitioners and scholars. It is in this context that the NERDVET project aims to give its contribution to address this call for action.

[3] For full reference to the outcomes of these activities, please see the "NERDVET Research Report" available in the resource centre of the NERDVET e-learning platform.
[4] E.g., Council Recommendation on Key Competences for Lifelong Learning, New European Skills Agenda, Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030), Digital Education Action Plan (2021-2027), Digital Skills and Jobs Coalition.

3.2 Definitions of critical thinking and media literacy

Promoting the **integration of critical thinking and media literacy** as a key issue in the context of iVET means:

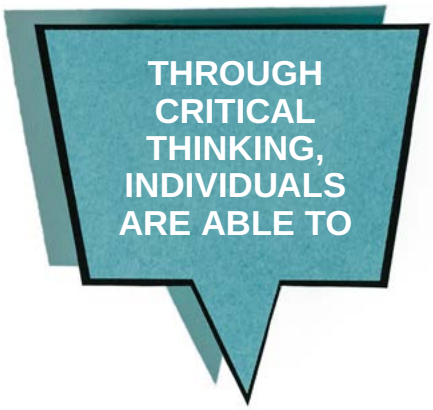
ENHANCING STUDENTS'

Autonomy

Personal and social responsibility

Self-fulfilment

The NERDVET model embraces the widely accepted approach for which critical thinking is a cognitive process, which consists in observing, describing, analysing, interpreting and evaluating information, problems or situations for the purpose of drawing reliable conclusions, which are at the base for rational decisions and solutions.



- Understand logical connections between ideas
- Identify and evaluate arguments
- Detect inconsistencies and common mistakes in reasoning
- Achieve other fundamental daily processes, such as decision- making, problem-solving, etc.

"Critical thinking can therefore be understood as a central element both for the individual and for the society, being a metacognitive competence concerning the abilities of reflection, analysis and questioning of information, which are all abilities that are requested for proactive behaviour and citizenship."

Critical thinking is also crucial to move through the wide world of news that individuals are exposed to every day avoiding judgment errors, as it helps to evaluate and better understand them. In this context, critical thinking is viewed at the same level of optimal decision-making competence, which relates to the ability to avoid cognitive errors and the use of heuristics (Kenyon, 2014). Moreover, it is also a prerequisite for developing positive social skills related to issues such as body image, racial stereotypes and gender (Bergstrom et al., 2018).

Since, nowadays, people get most of the written and visual information necessary to form their opinions and ideas from the internet and social media, it is not surprising that **the notion of critical thinking is often linked with the term of media literacy**, which is the ability to identify different types of media and understand the messages they are sending. Though until 15 years ago media literacy referred mostly to printed media such as newspapers, magazines, posters, and to the analogue television, nowadays it primarily linked to digital and social media. In the context of the NERDVET project, media literacy is therefore interpreted as digital and social media literacy.

"Given the need for a comprehensive definition, media literacy is the equivalent of media information literacy, meaning the ability to access media messages, to analyse and evaluate the accessed media from a critical point of view and to create one's media messages. Media literacy encompasses the knowledge and skills to think critically about media information through an understanding of media representations, structures and implications. Through this skill, individuals can recognise the differences between real and fake news, critically analyse the content of information presented to them on a daily basis and make correct decisions in digital environments (Tommasi et al., 2021)."

As a result, the main analysed factors to support the development of critical thinking and media literacy in iVET students and meet the need of developing flexible and widely accessible training tools are:

1. **The role of trainers in creating the necessary conditions**
2. **The use of worthy examples to exemplify the benefits of mastering such skills**
3. **The provision of stimuli and cognitive strategies to be acquired**

3.2.1. Enhancing critical thinking and media literacy with a cognitive psychology approach

The knowledge gathered from the review of scientific literature in the context of iVET shares similarities with cognitive psychology models. Indeed, cognitive psychology has a long historical interest in themes related to rationality and information processing and has therefore developed a series of studies and strategies to help individuals think and act critically, and to make more informed choices and decisions.

The complementarity of these concepts with cognitive psychology models inspired the definition of specific educational approaches to be used by iVET trainers to efficiently support critical thinking and media literacy in their students. Indeed, one of the most successful programs developed in cognitive psychology for eradicating cognitive biases and heuristics over judgment and decision-making processes is based on the enhancement of critical thinking. Such training is based on making the individual gain more and more consciousness of the automatic processes that are activated when evaluating information to make a decision/form an opinion: in other words, the aim of this training is to help the individual to suppress the automatic responses that comes without deliberative thinking (i.e. without careful and rational thought). This training promotes the development of cognitive reframing in order for the individual to be able to consider other perspectives of a given situation and learn new coping strategies to counter heuristic responses. Such training was recently developed in new research programmes (e.g., Debiasing and Self-nudging), which indeed aimed at reducing heuristics and cognitive biases in judgment and decision-making (Croskerry et al., 2013).

Approaching critical thinking and media literacy from a cognitive perspective means focusing on how individuals understand information and concepts. According to this perspective, using critical thinking to analyse information coming from digital media implies helping people understand connections between concepts, break down information and rebuild it with logical connections, as – in so doing – their understanding of that piece information/concept will increase.
Therefore, if these considerations are transferred to the educational context, it can be inferred that teaching students about biases, including their taxonomy, is an effective way of enabling them to reduce and identify the distortions or biases in their thinking.

Coupling these cognitive aspects with the previously mentioned factors related to the development of critical thinking in iVET, the following three training approaches are placed at the core of the NERDVET training:

Debunking misinformation by using reliable sources

Supporting the use of specific procedures to understand whether a piece of information is fake or for real.

Raising awareness on biases and irrational beliefs

Raising awareness on the existence of cognitive biases, based on the assumption that all individuals can be irrational, as irrationality is embedded in human beings (since it is linked to emotions), but that it can be reduced by becoming aware of where it originates from.

Self-nudging

Enhancing individuals' ability to develop personal strategies and procedures to process information objectively.

These approaches will be described and explained in the following section of this Guide.

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Training approaches

Practical exercises

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4. Toolkit training approaches and practical exercises

4.1 Debunking misinformation by using reliable sources

Debunking refers to the ability that someone has to establish whether a piece of information is real or fake. In order to develop this skill, the first step is to learn how to question or doubt what one reads and sees, not taking the reliability of every source of information for granted.
The second step is to identify tools/resources that help detecting reliable information and opinions.
By doing so, learners will:

- Become familiar with the concept of source-checking and be able to confirm the accuracy/ reliability of a piece of information.
- Be able to compare the sources of a piece of information with widely-recognised reliable sources or through debunking websites.

It is therefore crucial to raise awareness on the importance of using reliable sources to interpret a phenomenon, rather than to trust any information gathered on the web, social media or from hearsay. As a result, by learning to debunk, not only will learners be able to access more qualitative information, but their understanding of such information will also increase.

Learning Objectives:

- Improve awareness on the existence of false, inaccurate, or misleading information (e.g. fake news, conspiracies, deepfakes).
- Understand the importance of reliable sources and cultivate the ability to distinguish them from unreliable ones.
- Foster students' habit to check the source of the information they are exposed to.
- Spread knowledge on and promote the use of debunking tools and initiatives that offer reliable sources, e.g., online websites and agencies that provide information on a variety of different topics, specifying what facts are fake or not, international organisations, etc.

Main applications:

1. Identify reliable sources by being able to distinguish good quality information, becoming aware of the danger of fake news and false information and how to avoid them. ***(Lesson 1)***
2. Locate credible sources for assignments or general searches on the web, accelerating the speed and quality of research for online information by creating a catalogue of trusted sources for future use. ***(Lesson 2)***
3. Learn about different types of fake news, also by letting students create their own. ***(Lesson 3)***

?

Useful questions for discussion:

Who created this content?
Is there any proof of this piece of information?
Where am I used to read information, news and opinions?
Are they reliable sources?
Is this believable, based on what else I already know about this topic?

Introduce these topics with the NERDVET video tutorials:

- Debunking fake news and checking source
- Freedom of choice on the internet: being aware of threat
- Safe use of the Internet and social network

4.1.1 Practical Exercises

LESSON 1
A mini guide for reliable sources

FOCUS

This lesson is meant to help learners become more aware of the importance of using reliable sources, given the dangers implied by the exposure to false or inaccurate information, online and offline.

This activity can be applied with students who have little knowledge about fake news, misinformation and the need of fact-checking and using reliable sources, as it aims at progressively build such awareness in learners.

LEARNING OUTCOMES

- Understanding and identification of reliable sources and good-quality information by using some shared techniques
- Ability to compile a list of trusted sources to be regularly updated for future reference
- Capacity to make a presentation to guide others in debunking misinformation

DURATION

120 minutes

(or more, depending on how many groups are made; the lesson can be broken down in smaller, connected tasks).

METHODS

- Preliminary reflection to establish a common ground on issues such as respect for the opinion of others, respect for speaking time, active listening, etc.
- Participatory approach through
  - Interaction between students and trainer in an environment of mutual trust and respect.
  - Open discussions.
  - Plenary or group brainstorming sessions, etc.

TASK 1

Warm-up

1. The trainer introduces a topic to be analysed during the exercise, which is in some way related to the training curriculum, the learners' life experience or their motivations (e.g. job advertisement, food waste reduction, hygiene and safety rules at work, carrying out electrical installations with a technical gutter, evaluating soil fertility, etc.).

2. The trainer divides the learners in small groups (of 4/5 students) and asks them to look for sources of information that provide contents related to the theme at hand, and then to choose one in order to form their opinions.

EXERCISE

1. The trainer presents the set of questions below (that can be adapted based on the chosen theme and the learners' characteristics) to guide the groups' work. This can be done by printing and distributing the grid, or by using online tools to create surveys **(*see the supporting materials&resources box*)**:

   - Can I believe to the information presented by this source?
   - Why can I say that? How can I prove it?
   - Where am I used to read information, news and opinions?
   - Are they reliable?
   - Could Facebook or similar social networks be a good source of information?
   - Why can I say that? How can I prove it?

2. The trainer asks each group to discuss their answers and write their conclusions.

3. The trainer asks each group to present their chosen source, their answers to the proposed questions and the opinion they have formed on the research topic based on the information they have collected.

Wrap-up

1. The trainer promotes a collective discussion among the students to comment on the results of the questionnaire (that can be visually presented, in case an online tool was used).

2. The importance of knowing how to validate information presented by the media can be further exemplified by showing students examples of misinformation and fake news spread by unreliable sources on the research topic. In order to reinforce how easily fake news spread, the trainer can further select a fake news article and ask the learners to try and see how many different websites have reposted that piece of information within a specific time frame (e.g. 2 days).

3. The main conclusions are summarised in writing or via a digital presentation, and other source options can be shared by the learners and by the trainer, who can also introduce additional online resources to validate media information. Optionally, the task can be repeated focusing on different research topics, in order to test whether the students are able to identify reliable sources and stay away from those that are not. This allows the trainer to measure if learners assimilated and are able to apply the previously-shared techniques.

TASK 2

Warm-up

1. The trainer divides the learners in small groups (of 4/5 students) and asks them to imagine that they were invited to talk to a group of people (e.g. younger learners/their parents/workers of a certain profession).

2. The trainer explains that, during these talks, students will have to present a mini guide entitled “The importance of using only reliable sources for my future”.

EXERCISE

1. The trainer asks each group to prepare their mini guide through a written text or digital presentation by answering to the set of questions/statements below:

   - What is a good or reliable source?
   - What is a bad or unreliable source?
   - List 3 great examples of reliable sources.
   - List 3 great examples of unreliable sources.
   - List the dangers (at least 3 items) of not using a reliable source.

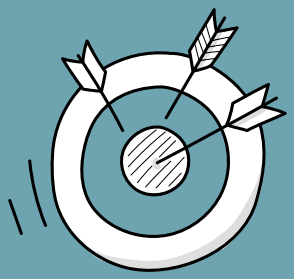
2. After discussing their answers and coming to some shared conclusions, the groups present their mini guides to the class (in 5 to 8 minutes each).

3. The mini guides are commented by the trainer through a discussion with the students, in order to reflect on the meaning and importance of using reliable sources. The trainer can also introduce additional resources, such as guides on how to flag suspicious stories on social media networks, list of websites that have carried false or satirical articles or, on the contrary, a list of websites that carefully monitor public news alerting when something is not true or not entirely true, etc. For some examples, ***see the supporting materials/resources box.***

Wrap-up

1. The learners vote to elect the best mini guide; an online tool for creating polls can be used to ensure anonymity in the voting process.

2. If the circumstances allow it, the best mini guide can actually be presented to a different audience by the group that created it.



ASSESSMENT

Observation can be used to evaluate the quality of the discussion in the groups, i.e.:

- The trainer can follow the first task and see what is happening in the work groups (who is participating, what kind of ideas they are sharing, etc.).
- The trainer can evaluate their students' works and assess if the learning outcomes were achieved.
- Online surveying/polling tools can also be useful references to provide "visual evidence" and allow the trainer to synthesize the main ideas emerged from the discussion.

SUPPORTING MATERIALS & RESOURCES

- ***Online surveying/polling tools***
  - Wooclap
  - Slido
- ***News-checking websites***
  - The Consensus Project
  - Skeptikal science
  - Digital Scherlocks
  - Hoaxy

LESSON 2

Build your thematic database

FOCUS

This lesson is meant to help learners accelerate the speed and quality of their searches for information online by relying on a selected database of sources to be easily consulted and updated.

This activity can be applied with students who have little knowledge about using online search engines and techniques, as it provides basic instructions to be capitalised also for contexts outside of the classroom environment.

LEARNING OUTCOMES

- Capacity of integrating tools from several knowledge areas to improve efficiency in gathering information
- Ability to easily locate credible sources for assignments or general searches on the web

DURATION

120 minutes

METHODS

- Preliminary reflection to establish a common ground on issues such as respect for the opinion of others, respect for speaking time, active listening, etc.
- Participatory approach through
  - Interaction between students and trainer in an environment of mutual trust and respect.
  - Open discussions.
  - Plenary or group brainstorming sessions, etc.

TASK

Warm-up

1. The trainer divides the learners in small groups (of 4/5 students) and introduces a topic to be analysed during the exercise, which is in some way related to the training curriculum. In order to carry out the exercise, an interdisciplinary approach can also be adopted by integrating some ICT training aspects in the creation of the database.

2. The trainer distributes worksheets with different search techniques and tips (***see the supporting materials & resources box*** for some examples) to each group, asking students to read and assimilate the information.

3. The trainer asks the students to demonstrate the different search techniques to the other groups of students with the use of real search examples.

4. Starting from a real assignment they might have, students can work again in groups and train their capacity of locating information.

EXERCISE

1. The trainer proposes the learners to build a "Personal Thematic Database" of reliable sources of information using a spreadsheet, where students can research, compile and sort the sources that they came across. The database can be integrated with additional fields – music, books, news, science, arts, etc.

2. The trainer invites the students to publish or share the Database with their peers in order to mutually exchange knowledge.

3. The trainer illustrates a PDCA process for a regular revision and update of the Database:

    - **P**lan which categories will figure in the database
    - **D**o the database and feed it with information, sources, links
    - **C**heck the reliability of the sources
    - **A**ct to correct any errors, misses, redundancy, etc.

Wrap-up

1. The trainer promotes a debate among the students to draw the main conclusions of the exercise.

2. In order to follow up with the upkeep of the shared Database, the trainer makes sure that all learners have access to it and that some “Database Administrators” are nominated in a rotational procedure.

3. The trainer instructs all the learners to permanently alert the administrators of any significant change or mistake observed in the sources.

ASSESSMENT

This exercise can be evaluated through questionnaires administered to the students at the beginning and at the end of the activities with questions relating to their knowledge, confidence and capacity of locating and evaluating resources.

Additionally, the trainer can also directly observe the impact of the activity as students will put to use their knowledge through their assignments.

SUPPORTING MATERIALS & RESOURCES

- ***Online search techniques***
  - Seven Ways to Find What You Want on the Internet
  - Online Search Techniques

LESSON 3

What is fake news?

FOCUS

This lesson is meant to help learners understand what fake news are and how to distinguish them from reliable facts. Students will also learn about different types of fake news, firstly by means of direct observation and secondly by creating their own.

This activity can be applied with students who have little knowledge about media literacy and/or awareness on fake news and misinformation, as it focuses on developing them for a transversal use, from personal to educational contexts.

LEARNING OUTCOMES

- Understanding of the meaning and phenomenon of fake news, misinformation, and deliberately misleading information
- Capacity to distinguish reliable facts from false ones
- Knowledge of the main types of fake/ misleading news

DURATION

120 minutes

METHODS

- Preliminary reflection to establish a common ground on issues such as respect for the opinion of others, respect for speaking time, active listening, etc.
- Participatory approach through
  - Interaction between students and trainer in an environment of mutual trust and respect.
  - Open discussions.
  - Plenary or group brainstorming sessions, etc.

Warm-up

1. In order to break the ice and introduce the topic of fake news, the trainer proposes this set of questions to the students, divided in small groups or couples:

- Tell your classmate(s) something about yourself and include one lie. Can the other(s) tell what the lie is?
- Why do you think we lie?
- When is a lie legitimate, and when does it cross the border?
- Do you know of any books or movies in which fake news/fake lives are the main topics?
- What is fake news?
- Are lying and fake news the same?
- Is there deliberate fake news? Why yes or why not?
- What is the underlying reason for lying? And for fake news?

2. The students discuss their answers first in groups or couples, and then comment their conclusions with the whole class, guided by the trainer. Optionally, the placemat working method (***see the supporting materials & resources box***) can be used to further work on the students' communication skills.

EXERCISE

TASK 1

1. The trainer dives deeper into the topic of fake news by proposing a variety of interactive resources for students to experiment with (***see the supporting materials & resources box***):

- "What is real and what is fake" quiz competition
- "What types of fake news exist?" analysis

2. The trainer divides the learners in small groups and asks them, using the pieces of news from the previous quiz, to identify the type of fake news that they represent.

EXERCISE

TASK 2

1. The trainer asks the students to choose a topic that is in some way related to the training curriculum, the learners' life experience or motivations, and to carry out some online research on it.

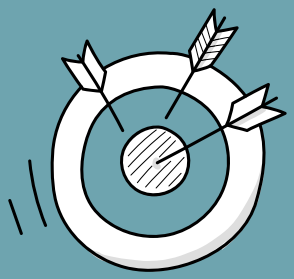
2. After having gathered all necessary information, the trainer asks the students to individually write two short articles or social media posts - one containing real and the other fake information - on the topic they chose.

3. The students read their articles or posts to their classmates, who are left to discuss about them, deciding which one of the two versions is unreliable and to which category of fake news it belongs.

Wrap-up

1. The trainer asks the learners what is the most important thing that they have learned today and if anyone is going to change something based on what they learned.

2. The answers are commented together with the whole class.



ASSESSMENT

This exercise can be evaluated through questionnaires administered to the students at the beginning and at the end of the activities.

The questionnaire can contain simple questions to measure the students' perception and understanding of fake news and misinformation.

SUPPORTING MATERIALS & RESOURCES

- ***Placemat working method***
  - Differentiation – the placemat and jigsaw methods
- ***Fake news-spotting***
  - Not Real News | The Week in Fake News – Associated Press
  - Fake or real headlines quiz | The Guardian Foundation
  - Break the Fake: News | MediaSmarts
- ***Types of fake news***
  - Infographic: Beyond Fake News – 10 Types of Misleading News

4.2 Raising awareness on biases and irrational beliefs

Cognitive biases are a sort of simple, easy, and unconscious errors that individuals may make when they try to interpret information about something they are not widely knowledgeable about.

Debiasing is therefore a process that aims at reducing the influence of cognitive biases on individuals' decision- and judgement-making, with the main goal of making people more aware and rational in their thinking process.

Irrational beliefs are similar, as they cover what is lacking in an individual's reasoning around a phenomenon. However, irrational beliefs are rooted within the individuals, as they often are related to emotions or values, which may be connected to religious beliefs, cultural values, or personal experiences. Irrational beliefs indeed concern a prejudicial habit through which individuals might discriminate and avoid different or alternative ways of thinking, thus widely impacting on the quality of their decision-making processes (e.g., stereotypical thought, prejudice etc.).

Learning Objectives:

- Develop awareness on the existence of biases and irrational beliefs and become capable of recognizing them.
- Understand whether a reasoning process is biased or not by making it explicit, outlining what evidence is available and how it influences the adoption of specific conclusions.
- Research and consider alternative explanations/interpretations.
- Raise awareness on the importance of others' opinions and ways of being.

Main applications:

1. Learn to verbalise and then self-regulate one's own decision-making and interpretation process and the possible emotions, bias and prejudice linked to it by being aware of the different types of biases that may occur. ***(Lesson 1)***
2. Support learners to openly express their beliefs and identify which ones could derive from bias, highlighting the importance of taking into account different opinions and values, in order to avoid possible forms of discrimination. ***(Lesson 2)***
3. Understand that individuals with different appearances, opinions, characteristics and beliefs exist, highlighting how "empathic bridges" can still be built by recognising one's irrational emotions and reactions. ***(Lesson 3)***

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Useful questions for discussion:

Am I biased in my reasoning?
How did I reach this conclusion?
What is my reasoning? Am I able to outline it?
Is this the only possible interpretation or are there any alternatives?
Am I able to interpret differently?
Am I expressing personal beliefs that I really chose for myself/that I really believe in?
Do I have any prejudice around this fact/ person?
Am I able to identify my personal beliefs?
What is the origin of my belief?

Introduce these topics with the NERDVET video tutorials:

- Behaving critically
- Why is critical thinking important for your everyday life?
- Bias and prejudice
- Take action on your irrational beliefs

4.2.1 Practical Exercises

LESSON 1
What is cognitive bias?

FOCUS

This lesson is meant to help learners analyse different types of cognitive bias, as well as to evaluate and reflect on ways to recognize and act on it. Students will therefore increase their capacity to detect how thoughts are being conditioned before they turn into actions, applying a conscious decision-making process. At the same time, they will learn how to empathize with the cognitive biases that others might have and help them become aware of them.

This activity can be applied with students who have little knowledge about critical thinking and/or awareness on cognitive biases and how these influence their beliefs and thoughts, as it focuses on building them for a transversal use, from personal to educational contexts.

DURATION

90 minutes

LEARNING OUTCOMES

- Awareness on the existence of cognitive bias and their effect on individuals' thinking and decision-making processes
- Knowledge of the main types of bias and instances in which they could occur

METHODS

- Preliminary reflection to establish a common ground on issues such as respect for the opinion of others, respect for speaking time, active listening, etc.
- Participatory approach through
  - Interaction between students and trainer in an environment of mutual trust and respect.
  - Open discussions.
  - Plenary or group brainstorming sessions, etc.

TASK

Warm-up

1. The trainer asks students to describe

- a time when they tried to change someone else's mind, either about a decision they made or about their opinions about a problem. Were they successful? Why or why not?
- a time when someone else tried changing their mind about an opinion or choice. How did they feel?

2. Students are given some time to note down their thoughts before answering the questions in small groups or as a class.

EXERCISE

1. The trainer introduces the meaning of bias and provides the following “Key vocabulary Sheet”, in form of a printed sheet or through a digital presentation, so for students to learn about the most common types of cognitive biases and what they imply:

Confirmation bias	Favours information that conforms to pre-existing beliefs and discards evidence that does not conform to them.
Halo effect	One’s overall impression of a person influences how you feel and think about them. This especially applies to physical attractiveness, which influences how you rate her other qualities.
Self-service bias	Tendency to blame external forces when bad things happen and give yourself courage when good things happen.
Attention bias	Tendency to pay attention to some things while ignoring others.

EXERCISE

Observer actor bias	Tendency to attribute your actions to external causes and, at the same time, attribute behaviours to external causes.
Negativity bias	Focusing on negative events at the expense of positive or neutral events.
Anchoring bias	Tendency to rely too much on the first information that is learned.
Disinformation effect	Tendency of post-event information to interfere with the memory of the original event. It is very easy for your memory to be influenced by the opinion of others on a topic.
Outcome bias	Making a decision based on the outcome of a previous event without any regard to other factors involved.
False consensus effect	Overestimating the degree of agreement that others have with you.
Blind-spot bias	Recognising bias in others, but failing to recognize it in yourself.
Optimism bias	Leads you to believe that bad things are less likely to happen to you and that you are more likely to succeed than the people around you.

2. Having exemplified how cognitive bias works, the trainer explains why some opinions or choices might be influenced by prior life experiences or mental processes; this is why having a certain standpoint or trying to change someone's mind might be linked to bias, which affects us and others.

3. Following the examples they made in the warm-up, the trainer asks the students the following questions:

- Do you now think you were biased when trying to change someone's mind?
- Could the person trying to change your mind have been biased?
- If the answers are "yes", what type of bias do you see in those occasions?
- What can you do in the future to recognise and respond to your own prejudices and those of others?

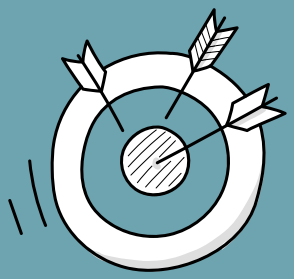
EXERCISE

4. The trainer tests the students' understanding by means of a quiz aimed at recognising types of bias starting from real-life situations. The quiz can be taken, individually or in small groups of students, via
    - the dedicated section of the "The Lowdown" article (***see the supporting materials & resources box***), or
    - a printed sheet, digital presentation, online service for creating personalised quizzes (***see the supporting materials & resources box***), using questions prepared by the trainer also based on the students' competence level and/or training subject in which the lesson takes place.

Wrap-up

1. The trainer asks the students to comment on their answers (that can be visually presented, in case an online tool was used) and exchange opinions on them.

2. The trainer asks the students to share what they learnt during the lesson individually or in groups. This can either be done verbally or through interactive supports.



ASSESSMENT

This exercise can be evaluated through questionnaires administered to the students at the beginning and at the end of the activities.

The questionnaire can contain simple questions to measure the students' perception and understanding of the main cognitive biases.

SUPPORTING MATERIALS & RESOURCES

- ***Quiz to recognise types of biases***
  - The Lowdown Quiz: How Good Are You At Detecting Bias?
  - Lesson Plan: How to Recognize Bias (PDF)
- ***Online surveying/polling tools***
  - Wooclap
  - Slido

LESSON 2

Managing irrational beliefs

FOCUS

This lesson is meant to help learners become aware of the existence of irrational beliefs and of how they condition individual's thinking, learning how to identify and manage them. By acquiring analytic strategies, the learners will increase their capacity to resolve conflicts that are generated by irrational behaviours.

This activity can be applied with students who have little knowledge about critical thinking and/or awareness on irrational beliefs. The developed competences can be applied in a variety of contexts, from personal to educational ones, to improve individual decision-making processes.

LEARNING OUTCOMES

- Capacity to elaborate and apply ways to make decisions and support standpoints that are not based on irrational beliefs
- Awareness on the existence of irrational beliefs and how they condition cognitive processes, producing limiting behaviours
- Understanding of how unverified sources, common knowledge and personal emotions condition individuals' thoughts and beliefs

DURATION

120 minutes

METHODS

- Preliminary reflection to establish a common ground on issues such as respect for the opinion of others, respect for speaking time, active listening, etc.
- Participatory approach through
  - Interaction between students and trainer in an environment of mutual trust and respect.
  - Open discussions.
  - Plenary or group brainstorming sessions, etc.

TASK

Warm-up

1. Based on the type of chosen activity/activities (moral dilemma, news analysis and discussion, role play), the trainer starts introducing the topic that will be at the centre of the lesson, in order to provide a general framework and preliminary knowledge to the students. The topic can be chosen among:
    - (current or past) online or printed news articles,
    - themes that are dealt with by the training subject in question (e.g. an historical event in case of a history lesson; a technological advancement in case of a technical subject like mechatronics), or
    - topics that involve two or more subjects interdisciplinarly (e.g. a piece of news regarding a health-related matter can be complimentary examined in a mixed biology and civic education class).

2. The trainer asks some general questions on the chosen topic to motivate students to start thinking and reflecting, identify their own pre-conceived beliefs and standpoints and favour an initial exchange in small groups or as a class.

EXERCISE

1. The trainer chooses one or more activities among the ones proposed below, aimed to work with students to identify irrational beliefs and build their own thoughts:

    - **Moral dilemma:**
      In this dynamic, a brief narrative is presented with a problematic situation that poses a conflict of values. Some examples of moral dilemmas can be found in the ***supporting materials & resources box.*** Students are asked to take a position and answer what they would do in such a situation according to their scale of values. With this activity, students can reflect on their own beliefs, decide what their ultimate action will be, and argue why.

EXERCISE

- **News analysis and discussion:**
  Students are asked to analyse and compare their opinions on a controversial news item (from newspapers, web article, television or radio channels, video, etc.) from different perspectives. This can help students build their own knowledge, starting from a reflection and the information provided by different sources.
- **Role play:**
  This activity consists in representing a situation of cognitive conflict and agreeing with the group on a solution. With this, the students are asked to discuss which is the best solution, argue it, and present it to the rest of the class to discuss if they had solved it in the same or in another way.

2. In order to guide the discussion with and among the students, which is best carried out in small groups, the trainer can use the following grid, applicable to any of the proposed activities:

Topic identification

- Can you briefly present the topic at hand?
- What is your position after having read/listened/talked about it?
- Is your position any different from what you thought before reading/ listening/talking about it?
- Are there any alternative positions on it?

Topic analysis

- Can you present at least two conflicting standpoints on the topic at hand?
- Motivate how each of the standpoints can be critically supported by proposing a reflection or providing back-up information.
- Explain how the standpoints/answers were developed.

The grid can be provided in form of a printed sheet or through a digital presentation, leaving students to share their inputs orally, after having firstly exchanged and noted down their views and, secondly, agreed on a common response. In alternative, the trainer can ask students to use a digital tool to present their work to the whole class.

Wrap-up

1. After all groups have presented their work, the trainer proposes to verbalize what are the beliefs that lead the identification of alternative standpoints/resolution of the problem in one or the other way.

2. To guide a final reflection, the trainer asks the following questions to the students:

- Why do you think your position has evolved, changed, or stayed the same before and after finding out more about the topic at hand?
- What might have influenced your standpoint before finding out more about the topic at hand? Was it personal, preconceived beliefs? Were they linked to your emotions or to some information that came from unreliable, inaccurate sources or popular opinions?
- In retrospect, could these beliefs have limited your perception of the subject at hand?
- Do you think there are more personal or educational standpoints that you might review, in case some beliefs are limiting your perception?

ASSESSMENT

This exercise can be evaluated through trainers' observation of the students' behaviours when standing up for their opinions and beliefs, before and after completing the activity.

Additionally, a self-reflection/evaluation moment can be implemented by students, guided by the trainer, through the wrap-up part of the exercise, which also allow to measure the students' perception and understanding of irrational beliefs.

SUPPORTING MATERIALS & RESOURCES

- ***Examples of moral dilemmas***
  - 25+ Moral Dilemma Examples, Questions, and Scenarios
- ***Bonus exercise for trainers' preparation "Our Irrational Beliefs": available on the resource centre of the***
  - NERDVET e-learning platform

LESSON 3

Through your eyes

FOCUS

This lesson is meant to help learners become aware of their own bias, especially linked to prejudice based on individuals' outer appearance. As a result, learners will increase their capacity to detect how thoughts are being conditioned before they turn into actions, thus increasing their attention to a conscious decision-making process.

This activity can be applied with students who have little knowledge about critical thinking and/or awareness on prejudice and how these influence their beliefs and thoughts, as it focuses on building them for a transversal use, from personal to educational contexts.

LEARNING OUTCOMES

- Capacity to look at things from different sides
- Awareness of how pre-judgement and stereotypes may influence individuals' choices

DURATION

100 minutes

or 2 lessons of 50 minutes

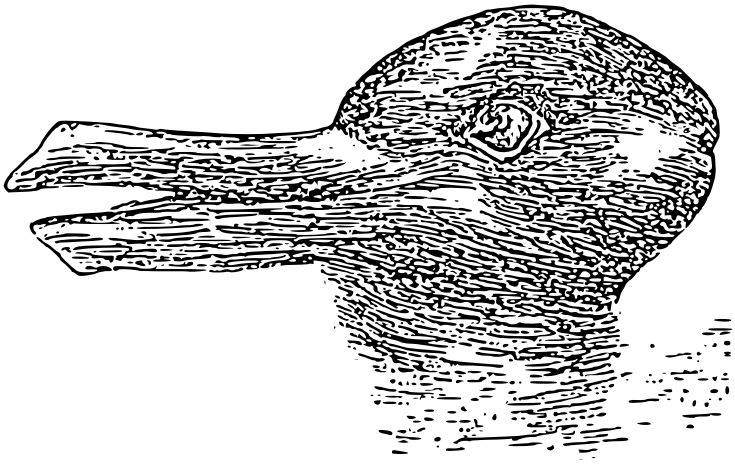
METHODS

- Preliminary reflection to establish a common ground on issues such as respect for the opinion of others, respect for speaking time, active listening, etc.
- Participatory approach through
  - Interaction between students and trainer in an environment of mutual trust and respect.
  - Open discussions.
  - Plenary or group brainstorming sessions, etc.

TASK 1

Warm-up

1. The trainer starts introducing the subject by showing the following pictures (or similar ones) and asking the students: “What do you see from your own perception?”



2. The answers are commented together with the class and the trainer explains the phenomenon of optical illusions and how two different persons can perceive images in different ways.

EXERCISE

1. The trainer provides the students with pictures form a variety of people to observe. Some examples of websites providing copyright-free pictures can be found in the ***supporting materials & resources box***. Alternatively, the object of observation can be the trainer themselves and an additional colleague, who might teach a different subject matter.

2. The students have to guess (in small groups or as a class) which feature among the following ones belongs to whom. The list can be altered or integrated based on the classroom context.

   - Has a motorcycle
   - Practices horse riding
   - Has a police dog
   - Is married
   - Lives in […]
   - Lived in […]
   - Has children

3. The students and trainer(s) discuss the answers given by the small groups or class and reflect on why they linked certain features to the provided pictures or to their trainer(s).

Wrap-up

1. The trainer asks the students to discuss the following questions:

   - What do you see, what do we see?
   - Why do you see it like that, and the others do not?
   - Does your background influence your interpretation?
   - What happens if you are not open for other interpretations?

2. To conclude the activity, the trainer asks the students to tell the most important thing they have learned today. Is there anyone who is going to change something based on what they learned?

TASK 2

Warm-up

1. In order to prepare the materials for this exercise, trainers are free to re-purpose any card game that is based on the depiction of people's faces or to create their own version of the cards, printing pictures of individuals as described below.

EXERCISE

1. The trainer divides the students in small groups (of 3-4 people), gives them a first set pictures of different types of people with varying facial expressions/ physical features and asks for the students' answers to the following prompt:

   - Imagine you are entering a bus. There are free seats, but you have to sit next to one of the persons depicted in the pictures.
   - Who are you going to sit next to? Why? On what basis?

2. The trainer gives the second set of pictures with the same people, who are now looking happy and smiling. The trainer asks for the students' answers to the following prompt and discusses them with the class:

   - Will you still sit next to the same person as before? Why or why not?
   - Do you think differently now? Has your opinion changed? What effect do their facial expressions have?
   - Do you ever do something yourself based on people's outer appearance? Or are you sometimes treated differently based on prejudices?

3. The trainer gives another set of cards with personal characteristics written/printed on them, e.g. SPORTY – VAIN – MUSLIM – GAY – NOT OF […] NATIONALITY (based on the country), etc. and asks the students to associate them to the individuals in the previously showed pictures, answering to the question: "Which personal characteristics belong to whom and why do you think this is?"

Wrap-up

1. In order to wrap-up the exercises and evaluate of the impact of the game with the students, the trainer makes a line in the class and asks the students choose to place themselves either on the left or right side of the line.

2. The trainer poses the following questions to the students and asks them to re-place themselves on the left side if their answer is “yes” and to the right side if their answer is “no”:

   - Do you think some prejudices based on people’s outer appearance were affecting your perception of them during the exercise?
   - Did your background influence your interpretation/opinion of people?

3. The students’ choices are commented together.

ASSESSMENT

This exercise can be evaluated through the comparison of the students' observations and opinions before and after completing the activity.

Additionally, a collective evaluation moment can be implemented with students, guided by the trainer, through the wrap-up part of the second task.

SUPPORTING MATERIALS & RESOURCES

- ***Copyright-free pictures***
  - Unsplash
  - Max Pixel

4.3 Self-nudging

Based on the "**nudge**" notion (according to which there are certain cues in the environment that lead humans to make specific choices), self-nudging implies that individuals can create by themselves a simple set of stimuli that can support and "remind" them to apply specific reasoning and behaviours.

Self-nudging is therefore linked to the idea that individuals can adjust or alter their own behaviour through the use of personal nudges. For example, a self-nudge may be a checklist that a person has developed and uses each time that they have to take an important decision.

Learning Objectives:

- Learn how to create self-nudges to be used in everyday life.
- Use pro-active thinking for pro-active behaviours by autonomously implementing nudges.
- Understand the importance of being critical overall and the processing and assessment of information.
- Foster the importance of rational reasoning and reflection.

Main applications:

1. Stimulate self-initiated processes to reflect on topics and form opinions. ***(Lesson 1)***
2. Support students in translating positive and proactive intentions into actual behaviours in their daily lives. Automatic self-nudged processes can be promoted by helping them identify specific elements that encourage their self-fulfilment and capacity to rationally express opinions and points of view. ***(Lesson 2 and Lesson 3)***

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Useful questions for discussion:

How can I better choose or behave next time?
What can I do to prevent a bad decision or behaviour?
What can simply and easily help or influence me in making a choice?
How can I use/transform this into a positive self-nudge?

Introduce these topics with the NERDVET video tutorials:

- Behaving critically
- Why is critical thinking important for your everyday life?
- Freedom of choice on the Internet: being aware of threats
- Safe use of the Internet
- Improve your organisation and focus
- Staying positive on social media
- Making decisions

4.3.1 Practical Exercises

LESSON 1
How to take a stand

FOCUS

This lesson is meant to help learners build a routine of steps to process information before forming their opinions. It also includes some stimuli to exchange their points of view with others in order to pick up additional perspectives that they might have not considered.

This activity can be applied with students who have little knowledge about critical thinking and/or conscious decision-making or pro-active thinking. The developed competences can be applied in a variety of contexts, from personal to educational ones.

LEARNING OUTCOMES

- Application of standard routine in decision-making and opinion formation processes
- Understanding of the importance of respecting others' opinions

DURATION

90 minutes

METHODS

- Preliminary reflection to establish a common ground on issues such as respect for the opinion of others, respect for speaking time, active listening, etc.
- Participatory approach through
  - Interaction between students and trainer in an environment of mutual trust and respect.
  - Open discussions.
  - Plenary or group brainstorming sessions, etc.

Warm-up

1. The trainer starts introducing the topic that will be at the centre of the lesson, in order to provide a general framework and preliminary knowledge to the students.

   The topic, which should be thought-provoking or controversial to some extent, can be chosen among:
   - (current or past) online or printed news articles,
   - themes that are dealt with by the training subject in question (e.g. an historical event in case of a history lesson; a technological advancement in case of a technical subject like mechatronics), or
   - topics that involve two or more subjects interdisciplinarly (e.g. a piece of news regarding a health-related matter can be complimentary examined in a mixed biology and civic education class).

Some examples of moral dilemmas can be found in the ***supporting materials & resources box***.

2. The trainer shares detailed information on the topic through a printed sheet or digital presentation and explains to students that they will be using the steps of the “Take a Stand” routine in order to learn how to navigate dilemmas or situations in which controversial topics are the focus.

   “Take a Stand” is a thinking routine for exploring perspectives on dilemmas about community and civic life developed by the Harvard Graduate School of Education (for more information ***see supporting materials & resources box***).

EXERCISE

1. After having let them acquire sufficient information on the topic at hand, the trainer presents and goes through each of the steps of the routine with the students, according to the grid below.

2. The students are left to implement the routine in small groups (of 4/5 people).

STEP	HINT	GUIDING QUESTION	TO DO
1	Take a stand	What is your opinion?	On your own - think about and explain your perspective
2	Stand back	What is other people's opinion?	Listen to your classmates and their perspective
3	Look again	Are there new elements to form your opinion?	On your own – re-formulate or consolidate your opinion based on the perspectives shared by your classmates (maybe you changed your mind, maybe you did not – that is ok!)
4	Look beyond	Look beyond this specific topic	Reflect on how you can apply this routine to other past or future situations

3. The trainer calls on groups to see if and how steps foreseen by the routine impacted on the students' opinions.

Wrap-up

1. The trainer asks the learners to take a moment to reflect on the activity and then respond to the following prompt: "I used to think _____, and now I think _____."

2. The trainer acknowledges that not everyone in the group needs to agree and that the point of reflecting on the topics was to create a fixed set of steps to form personal opinions and share points of view with others.

ASSESSMENT

This exercise can be evaluated through trainers' observation of the students' behaviours when and if using the "Take a Stand" thinking routine in other situations, also with the support of a generic observation grid.

SUPPORTING MATERIALS & RESOURCES

- ***Examples of moral dilemmas***
  - 25+ Moral Dilemma Examples, Questions, and Scenarios
  - Digital Dilemmas to Teach Digital Citizenship
- ***Take a Stand routine***
  - Take a Stand - Project Zero
  - Take a Stand - Educator Guide

LESSON 2

Fixed mindset vs growth mindset

FOCUS

This lesson is meant to allow learners to gain consciousness of their main standards of thinking and their implications, promoting the adoption of a “Growth mindset” as an automatic mechanism for self-realisation and fulfilment.

This activity can be applied with students who have little knowledge about critical thinking and/or conscious decision-making or pro-active thinking. The developed competences can be applied in a variety of contexts, from personal to educational ones.

LEARNING OUTCOMES

- Development and adoption of self-induced stimuli to overcome personal challenges
- Understanding that individuals’ way of thinking can affect their choices and achievements

DURATION

60 minutes

METHODS

- Preliminary reflection to establish a common ground on issues such as respect for the opinion of others, respect for speaking time, active listening, etc.
- Participatory approach through
  - Interaction between students and trainer in an environment of mutual trust and respect.
  - Open discussions.
  - Plenary or group brainstorming sessions, etc.

TASK

Warm-up

1. The trainer introduces the concepts of “Fixed Mindset” and “Growth Mindset” using the following grids, which can be provided as a printed sheet or through a digital presentation:

A person with a Fixed Mindset:

- Believes that talented people were born with some great skills and those who did not have that “luck” cannot achieve great things;
- Believes that regular people have no capacity to learn and achieve exceptional levels of performance in a defined area;
- Thinks that when they have a bad performance in something, they cannot improve and become expert at it or develop the skills to do it better;
- Avoids challenges to hide their weaknesses;
- Looks at a bad result as a failure and does not try to learn with that experience;
- Does not try to improve themselves on a daily basis and often gives up challenges.

A person with a Growth Mindset:

- Believes that they can always improve their skills by making the necessary efforts;
- Believes that they can achieve anything with motivation and dedication;
- Searches for and embraces challenges to improve their performance and skills;
- Looks at a bad result as their own responsibility and as learning opportunities to do better next time;
- Depends on themselves;
- Is persistent and tries to improve themselves on a daily basis.

2. The concepts can be further exemplified by showing students interactive resources (see examples in ***the supporting materials & resources box***) that provide comparisons between growth and fixed mindset or examples of how having a growth mindset can lead to achieving positive outcomes, with real-life references.

EXERCISE

1. In order to dive deeper at the core of the topic, the trainer asks the following questions to the learners:

   - Which is your predominant mindset?
   - What can you do to develop your growth mindset?
   - What are some situations in which you can adopt a growth mindset?

2. The students are left to reflect individually on their answers, which can then be shared and commented in small groups.

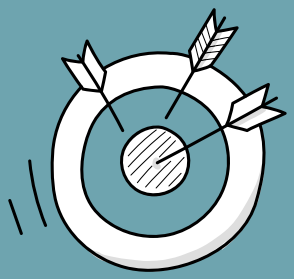
3. Based on the answers received to the previous questions, the trainer shares a selection of automatic questions that students can ask themselves when trying to adopt a growth mindset. For example:

SITUATION	THINK IT THIS WAY
I made a mistake / I am not satisfied with my grade	What can I do in order to improve next time? What can I learn for a future occasion?
I cannot understand a concept/subject at school	Why is it? Who or what could help me in my learning process? Can I try harder or some different approach to understand this concept/subject?
I am not being successful in reaching this goal I set for myself	Am I putting some consistent efforts everyday towards this goal? What would help me put more effort tomorrow?

Wrap-up

1. The trainer explains that using these automatic questions can be useful in triggering more practical reflections about individuals' mindset, increasing self-realisation and self-responsibility.

2. The students are invited to come back to these questions anytime they need, and to even add more for other situations in which they would like to apply a growth mindset.



ASSESSMENT

This exercise can be evaluated through trainers' observation of the students' behaviours on occasions of challenging educational or personal moments, in order to see whether the suggested positive nudges are applied autonomously.

SUPPORTING MATERIALS & RESOURCES

- ***Fixed vs Growth mindset examples***
  - 20 Famous People with a Growth Mindset
  - Developing a Growth Mindset with Carol Dweck

LESSON 3
Think and tell

FOCUS

This lesson is meant to support learners in building and retaining a personal checklist of steps to go through when they are trying to interpret pieces of information, news articles or any type of online content.

This activity can be applied with students who have little knowledge about critical thinking and/or conscious decision-making or pro-active thinking. The developed competences can be applied in a variety of contexts, from personal to educational ones.

LEARNING OUTCOMES

- Capacity to follow and use autonomously a mental checklist to guide pro-active thinking processes
- Improvement of participation rates and of the communication mechanisms within the classroom

DURATION

between 30 and 60 minutes

METHODS

- Preliminary reflection to establish a common ground on issues such as respect for the opinion of others, respect for speaking time, active listening, etc.
- Participatory approach through
  - Interaction between students and trainer in an environment of mutual trust and respect.
  - Open discussions.
  - Plenary or group brainstorming sessions, etc.

TASK

Warm-up

1. In order to promote a successful implementation of this exercise, the trainer should ensure that:
    - some key values are shared and agreed on in the communication dynamics in classroom,
    - a safe environment for the learners is set up to encourage their participation,
    - the students are provided with a set of tools for issue analyses,
    - there is some degree of mediation in the brainstorming activity.

2. The exercise is thought to be carried out as a simple but regular (e.g. taking place once/twice a week) activity in order to help students acquire some fundamental thinking schemes when approaching news items.

3. More trainers from different training subjects can additionally collaborate in order to define some common topics to be interdisciplinarly linked during their lessons.

4. Before the lesson, the trainer selects a topic for discussion with students (***see the supporting materials & resources box*** for examples of websites to collect inputs and ideas from).

EXERCISE

1. At the beginning of the lesson, the trainer asks the learners about any news they might have seen, read or been told, with a prompt along the lines of “Has anyone see on TV…”,” Did you hear or read the news about…”.

2. The trainer invites the students to share their ideas and elaborate on the proposed subject by using a brainstorming methodology. Before they can contribute with their own opinions, students are asked to verbalise their thought process by commenting their answers to a checklist.

EXERCISE

3. In order to provide a standard checklist for students to organise their thinking, the trainer shares a set of guiding questions, which can be either printed or shown in a digital presentation:

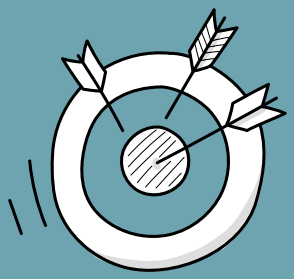
- Do I have all the elements I need to understand this piece of news?
- What kind of sources can help me build my opinion?
- Did I consider enough of them?
- Am I willing to read/hear opinions that are different than mine?
- Can I see alternative interpretations/points of view on this topic?
- Can I share a constructive comment that actually adds to the conversation?

4. By using this checklist over and over again, the trainer supports the students in memorising and applying in a progressively automatic way some nudges when forming opinions and expressing beliefs.

Wrap-up

1. The trainer enhances the different points of view that are brought up and keeps a record of the students' valid statements.

2. Additionally, the trainer can award positive points for the most consistent contributors, e.g. accuracy recognition points, humoristic tokens, etc. to foster motivation and participation.



ASSESSMENT

This exercise can be evaluated through trainers' observation of the students' behaviours, in order to see whether the suggested nudges are applied autonomously.

SUPPORTING MATERIALS & RESOURCES

- ***Ideas for brainstorming topics***
  - The New York Times - Current Events Conversation
  - The Independent - Conversation

4.4 Assessment

At International level, there is more and more consensus on the need to update the evaluation paradigm in education by integrating traditional and summative approaches with formative and learner-centred ones (Grion et al., 2017; OECD/CERI 2008). In particular, in a context where **life-long learning and the "learning to learn" competence are deemed to be crucial for the individual** to adapt to work and societal fast changes, assessment plays a great role and, consequently, the active participation of the individual in the assessment process becomes of paramount importance.

Alternative/learned-centred techniques have proved to be particularly effective in helping students develop their metacognitive skills, their autonomy in managing and monitoring their own learning process, and their ability of making constructive judgments and providing qualitative feedbacks (Di Stasio et al., 2019; Pagani,2020). The two main non-traditional techniques which are used in this perspective are a) self-assessment and b) peer-assessment.

Self-assessment can be defined as "a process by which students a) monitor and evaluate the quality of their thinking and behaviour when learning and b) identify strategies which can improve their understanding and skills. […] Thus, self-assessment is conceptualized as the combination of three components related in a cyclical, ongoing process: self-monitoring, self-evaluation, and identification and implementation of instructional correctives as needed" (McMillan & Hearn, 2008).

Peer assessment can be defined as "an arrangement for learners to consider and specify the level, value or quality of a product or performance of other equal-status learners" (Topping, 2009).

Self- and peer-assessment are often used together, in order to amplify the benefits that both techniques bring to students, which are: to stimulate learners' reflective skills and critical thinking (Robasto et al., 2020), to better understand the criteria used to evaluate their performance (Logan, 2009), and to develop a greater sense of responsibility towards their learning process (Yorke & Longden, 2004).

For these reasons, since the NERDVET Toolkit is about the development of critical thinking in iVET students, it is recommended to trainers that will adopt it in their classrooms to use these two techniques, possibly in a combined manner, to evaluate the impact of their training on their students. To this aim, the following **suggestions on how to use self- and peer-assessment** in order to maximize their positive effects on learners can be considered:

- Taking the time to discuss with students about the meaning, aim and role of the evaluation, underlining that being able to assess a product/process is a skill that needs training (it improves with time and effort) and that is a complex process that entails the development of reflective, social, communication and metacognitive skills (Li & Grion, 2019).
- Setting clear evaluation criteria to be shared with students from the start, so to make sure that they have clearly understood them. There are many ways to do so: for example, starting from inputs given by the trainer, evaluation criteria can be discussed with students and co-constructed with them, or you can use "exemplars[5]" explaining how they meet or do not meet the evaluation criteria (Serbati & Grion, 2019).
- When using peer assessment, this can be done anonymously, so as to limit the influence of personal relationships in the evaluation process (digital technologies can be useful in this). Alternatively, peer assessment can be used to evaluate groups' products instead of products delivered by a single person. In general, in order to foster objectivity, the use of written evaluation has proved to be more impartial (Pellegrini, 2020) and can be combined with face-to-face discussion, where the assessor further motivates their evaluation to the assessed. The latter is a very stimulating process for both parties, as – when done among peers – it involves a greater level of negotiation than in traditional evaluation techniques (where the trainer evaluates the students).

Additionally, **qualitative and quantitative self- assessment tools**, designed to allow trainers to evaluate their critical thinking and media literacy competences before and after having trained themselves with the NERDVET Educational Toolkit, **are available in the resource centre of the NERDVET e-learning platform.** The questionnaires can be further used to monitor students' progress after having received training on the approaches proposed in this Toolkit, in order to foster self-analysis and reflection.

[5] Exemplars are examples of best or worst products, generally produced by former students or created by the educators themselves, which trainers use to better explain and articulate evaluation criteria or standards of performance.

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Annex II – Directory of links

Key for associated training approaches:

- Debunking misinformation by using reliable sources
- Raising awareness on biases and irrational beliefs
- Self-nudging

Resources in English language

RESOURCE TITLE		RESOURCE TYPE
A portable mnemonic to facilitate checking for cognitive errors	●	Article
Charlie Chaplin's Honorary Award: 1972 Oscars	●	Video
Council Recommendation on Key Competences for Lifelong Learning		Policy Document
Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030)		Policy Document
CURRY Project	●	Project
Digital Education Action Plan (2021-2027)		Policy Document
Digital Skills and Jobs Coalition		Platform
European Digital Media Observatory (EDMO)	●	Platform
Greta Thunberg to world leaders: 'How dare you? You have stolen my dreams and my childhood'	●	Video
It’s Getting Harder to Spot a Deep Fake Video	●	Video
Learn English with Emma Watson's Speech on the HeForShe Campaign		Video
New European Skills Agenda		Policy Document
Quackwatch	●	Website
Seeing & being - Stories That Move	●	Website
Skeptical Inquirer	●	Website

Stories that move - toolbox against discrimination	●	Toolbox
Teaching About Fake News: Lesson Plans for Different Disciplines and Audiences	●	eBook
The Skeptics Society	●	Website
This is not Morgan Freeman - A Deepfake Singularity	●	Video
What is Critical Thinking?		Video
Why Do Our Brains Love Fake News?	● ●	Video
Why do people lie and how often are you lied to?	●	Video

Resources in Italian language

RESOURCE TITLE		RESOURCE TYPE
OER: Alfabetizzazione alle notizie - Perché l'educazione degli adulti all'alfabetizzazione alle notizie è importante in questo momento?	●	Article
Men In Black - Test d'Intelligenza		Video
Privacy e Diritto d’autore Highlights		Video
Social Hosting Hub		Website
Szalontüdő (Szirmai Márton, 2006)	● ●	Video
Un italiano su tre si 'informa' solo sui social network	●	Article
VACCINO: i dubbi più grossi	● ●	

Resources in Spanish language

RESOURCE TITLE		RESOURCE TYPE
Ejemplos de dilemas morales	●	Article
El Programa TREVA		Website
El pulpo de árbol no existe	●	Article

Ideas Irracionales en la conducta de riesgo adolescente		Scientific article
Manual para el manejo de Pensamientos irracionales		Presentation
Preguntas para pensar | Melina Furman | TEDxRiodelaPlataED		Video
Repositorio Ethazi - aprendizaje colaborativo basado en retos		Website
STOP, BASTA, PARA: La técnica de parada de pensamiento		Article

Resources in Portuguese language

RESOURCE TITLE		RESOURCE TYPE
Pensamento crítico		Video
Quiz Verdade ou Mentira		Interactive game
Vidente adivinha com base nas redes sociais - Legendado		Video

Resources in Dutch language

RESOURCE TITLE		RESOURCE TYPE
Anne Frank Stichting - Educatie		Website
De online fabeltjesfuik		Video
Hoe bewust ben jij je van je vooroordelen?		Video
Op het eerste gezicht		Game
Mbo Mediawijs - Desinformatie		Website
Mediawijsheid		Website
Nepnieuws, wat betekent dat nou precies?		Video
Practoraat Mediawijsheid		Website

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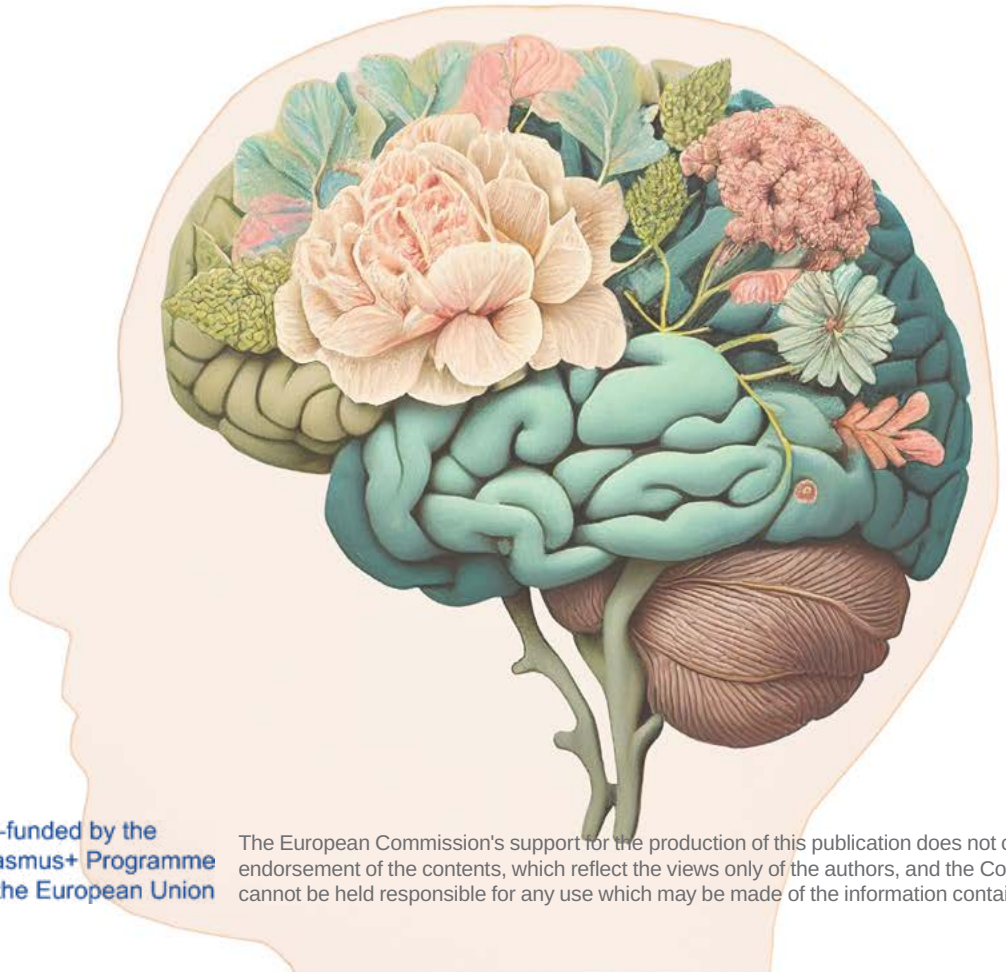
Educational Toolkit Guide



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