Joint development, piloting and validation of entrepreneurial mindset and key skills curricula and training materials for third countries

Entrepreneurial Mindset and Key Skills for All

ERF CURRICULUM: [SCIENCE & TECHNOLOGY] – METHODOLOGICAL TOOLS

TASK ID AND TITLE 2.2: JOINT DEVELOPMENT OF THE CURRICULA AND TRAINING MATERIALS FOR ERF

PARTNER RESPONSIBLE FOR THIS ACTIVITY: MMC MEDITERRANEAN MANAGEMENT CENTER

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

PROJECT MAIN DETAILS

Programme:	Erasmus+
Key Action:	Lump Sum Grants
Project title:	Joint development, piloting and validation of entrepreneurial mindset and key skills curricula and training materials for third countries
Project Acronym:	EMSA
Project Agreement Number:	101092477
Start Date:	01/01/2023
End Date:	31/12/2025

COORDINATED BY

MMC Mediterranean Management Centre

PROJECT PARTNERS

Cyprus Certification Company

DIMITRA educational organization

have a dream

ARAB COLLEGE OF APPLIED SCIENCES

Jordan Youth Innovation Forum
المـلتقى الأردنـي للإبـداع الشـبابي

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

TABLE OF CONTENTS

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

SUMMARY OF THE METHODOLOGICAL TOOLS

Competence Title	ERF Competence: SCIENCE & TECHNOLOGY
Learning Outcomes for the Competence	• ***Learners will understand the fundamental scientific and technological concepts and recognize their relevance in addressing societal challenges.*** • *Understand the principles and applications of the scientific method and technological tools in problem-solving and decision-making processes.* • *Recognize the impact of science and technology on individual empowerment and societal advancement* *In terms of **skills:*** • ***Demonstrate the ability to use basic technological tools responsibly and analyze the social and ethical implications of science and technology in society.*** • *Apply scientific methods and technological tools to identify problems, formulate hypotheses and support data-informed decision-making.* • *Apply strategies to overcome technology-related anxiety and build confidence in technology use* *In terms of **competences:*** • ***Develop curiosity and ethical behavior on technology use, including data privacy and social equity.*** • *Demonstrate responsibility and ethical awareness when applying technological solutions* • *Take initiative in setting personal goals for technology skill development and maintain a positive approach*

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Methodological tool Type	Number of Methodological tools
☒ Lecture (compulsory)	1
☐ Open-ended questions	
☒ Closed questions	**1**
☒ Group discussion	**2**
☐ Brainstorming	
☒ Individual exercise / Case study	**1**
☒ Group exercise	
☐ Experiential workshop	
☐ Role play	
☐ Video projection and analysis	**1**
☐ Other (Please indicate)	
Total Number of Methodological tools:	

Referencing the Methodological tools

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

PPT for PowerPoint Presentation/MT for other Methodological Tools + Competence number_Number_of_methodological_tool

Example:

PPT2.1_0 = PowerPoint presentation, on ERF competence Science & Technology, 1st tool

MT2.1_1 = Methodological tool, on ERF competence Science & Technology, 2.1 Topic

MT2.1_2 = Methodological tool, on ERF competence Science & Technology, 2.1 Topic

MT2.1_3 = Methodological tool, on ERF competence Science & Technology, 2.1 Topic

MT2.1_4 = Methodological tool, on ERF competence Science & Technology, 2.1 Topic

MT2.1_5 = Methodological tool, on ERF competence Science & Technology, 2.1 Topic

MT2.1_6 = Methodological tool, on ERF competence Science & Technology, 2.1 Topic

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

COMPULSORY METHODOLOGICAL TOOLS

1. POWERPOINT PRESENTATION

Methodological tool Code and Title	Science & Technology 2.1_0 PPT
Competence Title	Science & Technology
Learning Outcomes covered by the Methodological tool	1. *Learners will understand the fundamental scientific and technological concepts and recognize their relevance in addressing societal challenges.* 2. *Demonstrate the ability to use basic technological tools responsibly and analyze the social and ethical implications of science and technology in society.* 3. *Develop curiosity and ethical behavior on technology use, including data privacy and social equity*
Methodological tool Aim	To deliver a lecture on the topics and subtopics of the module.
Hints and tips for the trainer to use the Methodological tool	*The competence in Science and Technology involves understanding the basic principles, methods, and applications of scientific knowledge and technological innovation, and recognizing their impact on society. It also includes an awareness of the ethical, and social implications of technological advancements, encouraging responsible and informed decision-making.*
Attachment for the usage of the Methodological tool	PPT2.1_0

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

ADDITIONAL METHODOLOGICAL TOOLS

5. GROUP EXERCISE

Methodological tool Code and Title	SCIENCE & TECHNOLOGY MT2.1_1 Group Exercise
Competence Title	SCIENCE & TECHNOLOGY
Learning Outcomes covered by the Methodological tool	1. *Learners will understand the fundamental scientific and technological concepts and recognize their relevance in addressing societal challenges.* 2. *Demonstrate the ability to use basic technological tools responsibly and analyze the social and ethical implications of science and technology in society.* 3. *Develop curiosity and ethical behavior on technology use, including data privacy and social equity*
Methodological tool Aim	E.g., To practice individuals to reflect on the most important scientific and technological inventions
Hints and Tips for the trainer to use the Methodological tool	✓ E.g., Ensure that the participants understand the instructions for the activity fully before they start; clarify if necessary.
Attachment/s for the usage of the Methodological tool	Provided in the activity description below (if applicable).

Methodological Tool Title
MT2.1_1
Group Exercise/Individual Exercise Title (if different from the MT title)

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Reflect on the most important scientific and technological inventions— Telephone, and TV. **Choose one of the following inventios and share your perspectives on why do you consider this invention most important for the development of our society.**
Description of the Group Exercise/Individual Exercise
*Reflect on the most important scientific and technological inventions— **Telephone,** and **TV.*** ***Choose one of the following inventios** and share your perspectives on why do you consider this invention most important for the development of our society.*
Estimated Duration (broken down into steps, if necessary)
20 Minutes
General Guidelines (for the trainer)
*Reflect on the most important scientific and technological inventions— **Telephone,** and **TV.*** ***Choose one of the following inventios** and share your perspectives on why do you consider this invention most important for the development of our society.*
Instructions (for the participants)
*Reflect on the most important scientific and technological inventions— **Telephone,** and **TV.*** ***Choose one of the following inventios** and share your perspectives on why do you consider this invention most important for the development of our society.*

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Online Classroom Setting ***(if applicable)***
You use a mentimeter and set an open ended question to see their reaction

CASE STUDY

Methodological tool Code and Title	SCIENCE & TECHNOLOGY MT2.1_2 Case Study
Competence Title	SCIENCE & TECHNOLOGY
Learning Outcomes covered by the Methodological tool	1. *Learners will understand the fundamental scientific and technological concepts and recognize their relevance in addressing societal challenges.* 2. *Demonstrate the ability to use basic technological tools responsibly and analyze the social and ethical implications of science and technology in society.* 3. *Develop curiosity and ethical behavior on technology use, including data privacy and social equity*
Methodological tool Aim	E.g., To provide the trainees with a real-life example on the topic and give them the opportunity to study the conditions, actions taken, consequences…
Hints and tips for the trainer to use the Methodological tool	For many third countries, technological progress is often dependent on partnerships with more developed countries, international aid, or adapting more accessible, traditional technologies instead of cutting-edge solutions.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Attachment/s to use the Methodological tool	Provided in the activity description below (if applicable).

Methodological Tool Title
MT2.1_2 Case Study
Case Study Title (if different from the MT title)
European Union's role in empowering developing nations like Kenya
Case Study Content
The European Union partnered with Kenya to implement a solar energy project in rural areas. The project involved: • **Infrastructure Support**: Installing solar panels and creating a reliable electricity grid in remote villages. • **Skills Training**: Training local technicians to maintain the solar panels and manage the energy grid. • **Education**: Providing digital tools and internet access to schools powered by the solar energy system. This initiative not only supplied renewable energy to rural areas but also improved education, created jobs, and helped bridge the digital divide between urban and rural regions.
Estimated Duration (broken down into steps, if necessary)
Duration 30 Minutes

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

General Guidelines (for the trainer)

Question 1:

How did the EU's solar energy project in Kenya address both infrastructure challenges and the digital divide in rural areas?

Answer:
The EU's solar energy project in Kenya tackled infrastructure challenges by:

Providing Reliable Energy Access:

Installing solar panels in rural areas that previously had little or no access to electricity.

Establishing a decentralized energy grid to supply power to homes, schools, and businesses.

Improving Digital Connectivity:

Using the newly established solar-powered infrastructure to provide electricity for internet connectivity in schools and community centers.

Enabling rural communities to access online resources and participate in the digital economy.

By addressing these challenges, the project helped reduce reliance on fossil fuels, bridged the gap between urban and rural areas, and empowered communities with digital tools for education and economic development.

Question 2:

In what ways can skills training and local capacity building contribute to the sustainability of EU-supported projects in developing nations?

Answer:
Skills training and local capacity building ensure sustainability by:

Creating Local Expertise:

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Training local technicians to maintain and repair solar panels and energy systems reduces dependency on external expertise.

Building a workforce skilled in renewable energy solutions enhances long-term project viability.

Empowering Communities:

Educating community members about energy management and digital tools fosters self-reliance.

Promoting entrepreneurship opportunities, such as small businesses using reliable electricity, helps communities thrive.

Encouraging Ownership:

When locals are actively involved in managing and maintaining projects, they develop a sense of ownership, increasing their commitment to the project's success.

Facilitating Knowledge Transfer:

Sharing knowledge and best practices ensures that the project benefits extend beyond the initial implementation, enabling replication in other regions.

These efforts ensure that the benefits of EU-supported projects continue long after the initial investment.

4o

Instructions (for the participants)

After reviewing the case study please answer to the following questions.

- *How did the EU's solar energy project in Kenya address both infrastructure challenges and the digital divide in rural areas?*
- *In what ways can skills training and local capacity building contribute to the sustainability of EU-supported projects in developing nations?*

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Methodological Tool Title
MT2.1_3 Group Discussion
Group Exercise/Individual Exercise Title (if different from the MT title)
Raise awareness among participants about the types of personal information shared on social media and discuss ways to protect it.
Description of the Group Exercise/Individual Exercise
Raise awareness among participants about the types of personal information shared on social media and discuss ways to protect it.
Estimated Duration (broken down into steps, if necessary)
20 Minutes
General Guidelines (for the trainer)

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Raise awareness among participants about the types of personal information shared on social media and discuss ways to protect it.

Write down answers on a board or digital tool to highlight common responses (e.g., name, photos, location).

- *"What is the first thing you usually share when creating a social media profile?"*
- *"Which of these pieces of information do you think are the riskiest to share? Why?"*

Divide participants into small groups and provide them with this prompt:

"List all the types of personal information someone might share on social media, intentionally or unintentionally."
Example categories could include:

Name

Birthday

Photos

Location (check-ins)

Relationship status

Contact details

Work and education history

Instructions (for the participants)

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

"What is the first thing you usually share when creating a social media profile?" *"Which of these pieces of information do you think are the riskiest to share? Why?"*
*Online Classroom Setting **(if applicable)***
You use a mentimeter and set an open ended question to see their reaction

VIDEO PROJECTION AND ANALYSIS

Methodological tool Code and Title	**MT2.1_4**
Competence Code and Title	SCIENCE & TECHNOLOGY
Learning Outcomes covered by the Methodological tool	Develop curiosity and ethical behavior on technol-ogy use, including data privacy and social equity
Methodological tool Aim	General Data Protection rules
Hints and tips for the trainer to use the Methodological tool	
Attachment/s to use the Methodological tool	Provided in the activity template below (if applicable).

Methodological Tool Title
MT2.1_4

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Video Title (if different from the MT Title)
EU GDPR summary |What is the GDPR?
Video Source (e.g., URL)
https://www.youtube.com/watch?v=I-VuonciKWk
Video Creator (Person/Organisation/Authority)
IT Governance Ltd
Video Duration (if a segment of the video should be projected, please indicate also start and end time)
7:21
Estimated Duration (of the Activity) (broken down into steps, if necessary)
30 Minutes

General Guidelines (for the trainer)

The General Data Protection Regulation (GDPR) came into effect on May 25, 2018, marking the first major update to European data protection laws in over 20 years. Its primary purpose is to give individuals, referred to as "data subjects," greater control over their personal data and to ensure organizations handle such data responsibly and transparently. Personal data includes any information that can identify a living person, such as names, location data, email addresses, and health records.

Key GDPR terminology includes the concept of "processing," which refers to any operation performed on personal data, whether automated or not. Data controllers are entities responsible for determining the purposes and methods of data processing, while data processors act on behalf of data controllers. GDPR outlines six key principles for data processing, including the requirements that data be processed lawfully and transparently, collected for explicit and legitimate purposes, and secured to prevent unauthorized access. Data should also be kept accurate and retained only for as long as necessary.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

The regulation establishes six lawful bases for processing personal data, including fulfilling legal obligations, protecting vital interests, performing tasks in the public interest, pursuing legitimate business interests, or obtaining explicit consent. Consent, while commonly used, is considered the weakest basis since it can be withdrawn at any time. Organizations must have robust systems in place to handle consent withdrawal and must erase data upon request unless other lawful reasons justify its retention.

Instructions (for the participants)

Please review the following video and answer the following questions.

Debriefing Questions

When did the General Data Protection Regulation (GDPR) come into effect?
A) January 1, 2016
B) May 25, 2018
C) July 15, 2020
D) December 31, 2019

Which of the following is NOT considered personal data under GDPR?
A) Email addresses
B) Location data
C) Anonymous survey responses
D) Health records

What must organizations do if a data breach affects individuals' rights and freedoms?
A) Inform the data subjects immediately, regardless of the breach's impact
B) Report the breach to the relevant authority within 72 hours
C) Wait until the breach is resolved before notifying the data subjects
D) Anonymize the data retroactively to mitigate the breach

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Which of the following rights does GDPR grant to data subjects? A) The right to unrestricted data retention B) The right to data portability and erasure C) The right to automated decision-making without oversight D) The right to deny organizations lawful data processing
Remarks by the Trainer
1. **Correct Answer:** B) May 25, 2018 2. **Correct Answer:** C) Anonymous survey responses 3. Correct Answer: B) Report the breach to the relevant authority within 72 hours 4. **Correct Answer:** B) The right to data portability and erasure

Methodological tool Code and Title	SCIENCE & TECHNOLOGY MT2.1_5 Group Exercise
Competence Title	SCIENCE & TECHNOLOGY
Learning Outcomes covered by the Methodological tool	*Develop curiosity and ethical behavior on technology use, including data privacy and social equity*
Methodological tool Aim	To practice individuals to reflect on the ethical behavior on technology use

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Hints and Tips for the trainer to use the Methodological tool	Ensure that the participants understand the instructions for the activity fully before they start; clarify if necessary.
Attachment/s for the usage of the Methodological tool	Provided in the activity description below (if applicable).

Methodological Tool Title
MT2.1_5 Group Discussion
Group Exercise/Individual Exercise Title (if different from the MT title)
Encourage participants to review their own social media behavior and identify one way they can make their use of social media more fair and respectful.
Description of the Group Exercise/Individual Exercise
Encourage participants to review their own social media behavior and identify one way they can make their use of social media more fair and respectful.
Estimated Duration (broken down into steps, if necessary)
25 Minutes
General Guidelines (for the trainer)

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Present the following scenarios to participants: *A friend posts photos of an event and tags people without their consent.* *A social media influencer promotes a product but doesn't disclose it's a paid ad.* *Someone shares misinformation about a trending topic without checking the source.* *"Is this fair? Why or why not?"* *"What could the person have done differently to ensure fairness?"*
Instructions (for the participants)
"What is the first thing you usually share when creating a social media profile?" *"Which of these pieces of information do you think are the riskiest to share? Why?"*
*Online Classroom Setting **(if applicable)***
You use a mentimeter and set an open ended question to see their reaction

MT2.1_6 True or False

Please indicate whether the statement(s) below is/are true or false.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Statement: **The European Union emphasizes ethical considerations, sustainability, and inclusivity in its scientific research and technological innovation programs.**	
True	
False	
Correct Answer	True
Level of Difficulty	☒ Low ☐ Medium ☐ High

Statement: **One of the societal responsibilities in technological advancements includes addressing issues like data privacy and environmental impact.**	
True	
False	
Correct Answer	True
Level of Difficulty	☒ Low ☐ Medium ☐ High

Statement: **The definition of technology in the training is limited to simple tools and does not include advanced systems like medical devices or renewable energy solutions.**	
True	
False	
Correct Answer	False
Level of Difficulty	☒ Low ☐ Medium ☐ High

Statement: **The digital divide refers to the equal distribution of access to technology and the internet across all social and economic groups.**	
True	
False	
Correct Answer	False
Level of Difficulty	☒ Low ☐ Medium ☐ High

Statement: **According to the training, understanding the ethical and social implications of technological advancements is part of the key competencies in Science and Technology.**

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

True	
False	
Correct Answer	True
Level of Difficulty	☒ Low ☐ Medium ☐ High

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.