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STEAME GOES HYBRID: Blueprint Guidelines and Policy Recommendations

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Training program for selected STEAME subject teachers or others interested in the implementation of STEAME – HYBRID L&C Plans in the context of the STEAME GOES HYBRID project

Module Number and Area/ Topic:

Module 3: How teachers and students can work together in hybrid environment

Introduction and Broad Description of the Context and Goal of the area/ topic addressed:

During lockdown the teachers found themselves managing a Hybrid learning environment. Such situations can recur for various reasons.

Teaching in a hybrid environment is a new way of teaching and for many teachers and students it can seem overwhelming. As in all new environments, to move effectively, it is necessary to know spaces, possibilities, resources, risks.

Teachers should keep students' attention and participation alive in a blended learning environment that moves between online and classroom learning. They must also redesign the educational relationship. But when teachers struggle to work in this new school environment, we must also try to avoid burnout.

Teachers therefore need support when managing a hybrid learning environment, not only technical but also pedagogical support.

To avoid constant stress it is necessary to provide them with the necessary communication tools to navigate hybrid learning environments.

A great help comes from project-based learning (PBL) and problem solving, recognized as a learning system that can combine the acquisition of standard content material with significant tasks and activities for the direct involvement of students.

The PBL methodology implies a well planned and well organized process to guide the teachers in the different phases of the planning and it adapts to the Hybrid mode. This way teachers have an outlined work plan that somehow avoids guiding them throughout the process.

The importance of this methodology is the ability to promote motivation, enhance critical thinking and push students to use the skills of everyday life. Problem solving is the process of analyzing a specific problem situation and finding a solution.

Learning Outcomes: With the completion of this module the trainees will be able to

1. Improve their and students' digital skills
2. Use new digital tools in hybrid environments
3. Use new and different strategies to suit different learning modes
4. Use Project Based Learning in remote learning

Content and Resources (providing information on the various constituents/ dimensions of the topic under consideration):

The attempt to help teachers, students and parents to work in a hybrid environment goes through several steps. First of all, communication channels must be made agile. Promote an authentic connection that facilitates the relationship between people. Teamwork must be encouraged, making a resource bank truly usable and ensuring that everyone has access to the hybrid environment.

Another fundamental aspect is to support parents by providing them with easily usable resources.

Also not to be overlooked is the need to provide teachers with the tools to navigate even in stressful situations.

an example could be the development of PBL that provides teacher a powerful tool Climate Change is considered by many researchers the most important challenges of our times.

This project is aiming at increasing the awareness of the student about environmental sustainability, getting to know the fundamentals, the regulatory framework, the science behind and the possible approach to solve it.

Knowing the problem is surely the first step but with this project we aim at creating a Podcast to share the knowledge that has been developed and increase the awareness around the topic.

The publishing of the podcast is not merely an opportunity to reach a broader audience, it is also a way to boost the student's engagement. Since they are the ones that have to explain the topics, they are pushed to become active promoters.

The final outcome is a Environmental Sustainability Podcast in 4 episodes:

1. Introduction to Climate Change
2. The Paris Agreement
1. Carbon Footprint
4. Carbon Neutrality

Methodology and approaches for the module training presentation:

1. PBL and problem solving.
2. Preparation of the space and setting by providing the two possibilities at the same time: Physical Presence or On-line/ at distance.
According to activities students will work individually, in groups or in plenary sessions through collaboration and communication cloud platforms (GSuite tools)
2. Hybrid learning scenarios
 - using a camera to show the presentation
 - using the sharing screen to show a slideshow
 - onsite students sit in front of their screen and adapt to online students
 - using 2 cameras: one showing what the students are doing and reacting and one showing the teacher
3. Make resources, tools, materials, attachments and equipment available
4. Using cloud tools / platforms to implement the L&C plan
5. It involves the primary interest of the learners and includes:
 - investigation: to find out about the world
 - communication: to enter into social relationships
 - construction: to create things and change the world
 - reflection: to extract meaning from experience
 - What is Environmental Sustainability, and why is it impacting all of us?

Instruments/ Tools/ Supporting Material/ Resources to be used: (list of files, web links, videos, PPT.... use file names inserting the Module number)

- Tablets , laptops , digital cameras or cell phones will be necessary for students working from home or at a distance , in order to research the topics
- video-conferencing equipment
- Support material
- Instructional videos and lesson plans for various situations
- Cards for activities and evaluation
- Gsuite for education and Miro: apps and collaboration tools

- Video conferencing platforms: Meet, Zoom, Teams
- <https://resilienteducator.com/classroom-resources/steam-inquiry-based-learning/#:~:text=When%20a%20topic%20triggers%20curiosity,every%20step%20of%20the%20way>
- <https://everfi.com/blog/k-12/stem-education-and-entrepreneurship-5-big-skills-that-overlap/>
- [How to structure an Inquiry Based Lesson – YouTube](#)
- <https://www.youtube.com/watch?v=IOWn6DZrQ40>
- [1. Observatory Outputs – STEAME](#)
- <https://www.pblworks.org/what-is-pbl>
- <https://www.edutopia.org/blog/pbl-and-steam-natural-fit-andrew-miller>
- <https://www.schooloutfitters.com/article/entrepreneurship-in-project-based-learning>
- <https://education.microsoft.com/en-us/learningPath/e9a3beec>
- https://books.google.gr/books/about/Learning Through Real World Problem Solv.html?id=HIOdAAAAMAAJ&redir_esc=y
- https://books.google.gr/books/about/Learning Through Real World Problem Solv.html?id=HIOdAAAAMAAJ&redir_esc=y

Pedagogical/Learning Sequencing and Activities Plan:

Introductory activities (creation of interest, reference to real value issues, relation to background experiences etc)

Activity Number and broad Description:	
Development	The first step of the Project is dedicated to introducing the content, the methodology, the targets and to deep dive into the problem.
Materials	PowerPoint Presentation
Resources	Computer, projector, internet connection
Estimated Time	45 min.
Environment/Room Setting	Classroom
Trainees' role	Discussion. Group work.

Development activities

Activity Number and broad Description:	
Development	This activity is related to the familiarization with Miro, an online tool useful in group activities. Trainees are invited to watch a short video on using Miro. They are then invited by email to enter the platform and try to familiarize themselves with the tools.
Materials	Cell phones, laptops, computers
Resources	MIRO, Gsuite, Google, https://www.youtube.com/watch?v=7L1-0DOGHY
Estimated Time	15 minutes
Environment/Room Setting	online
Trainees' role	Watching the video and trying the platform

Development activities + Practicing Activities (hands-on activity)

Activity Number and broad Description:	
Development	The aim of this task is simply to familiarize with the tool through some ice-breaking questions through the Miro platform. In this activity the Trainees will start entering into the active phase of the activities, focusing on the Step 3 of the project, which is deep dive into Carbon Neutrality. Why is the climate challenge so important? <ul style="list-style-type: none"> ● What are the most important effects that end their impact on the economy, health and society? ● Explanation of the working method that will be used across the all steps
Materials	Cell phones, laptops, computers
Resources	MIRO, Gsuite,
Estimated Time	10 minutes.
Environment/Room Setting	Classroom, online
Trainees' role	Discussion.

Development activities + Practicing Activities (hands-on activity)

Activity Number and broad Description:	
Development	In this activity Trainees will be divided into 4 groups throughout the platform. They will watch some videos about the LCA (Life Cycle Assessment) and they will answer some questions related to the video. The link to the video is on top of your group box on the right.
Materials	Cell phones, laptops, computers
Resources	MIRO, Gsuite,
Estimated Time	10 minutes
Environment/Room Setting	Classroom/online
Trainees' role	Discussion. Group work. Draft content of the podcast.

Development activities + Practicing Activities (hands-on activity)

Activity Number and broad Description:	
Development	It is dedicated to a deep dive into the quantitative measurement of the carbon footprint. The Trainees have to check your Household consumption, fill the carbon calculator (https://www.carbonfootprint.com/calculator.aspx) In the last section the calculator will give them the total CO2 that they generate. They have to report on the spreadsheet (in MIRO) on the right I for each dimensions
Materials	Cell phones, laptops, computers
Resources	MIRO, Gsuite,
Estimated Time	15 minutes
Environment/Room Setting	online
Trainees' role	Discussion. Group work. Draft content of the podcast.

Development activities + Practicing Activities (hands-on activity)

Activity Number and broad Description:	
Development	The final task will be Podcast creation. This is the Episode 3. This task is finalized by creating a draft content of the episode using the info they have saved during the activity.
Materials	Cell phones, laptops, computers
Resources	MIRO, Gsuite,
Estimated Time	10 minutes
Environment/Room Setting	online
Trainees' role	Discussion. Group work. Draft content of the podcast.

Reflection and Evaluation of Learning Outcomes

Activity Number and broad Description:	
Development	To reflect on the tools and the module
Materials	Discussion
Resources	Computer, projector, internet connection
Estimate Time	10 minutes
Environment/Room Setting	Classroom environment
Trainees' role	Active. To participate and share ideas.