COMPUTATIONAL THINKING AND CREATIVE LEARNING: CODING, MAKING, AND EDUCATIONAL ROBOTICS WHILE WORKING ON MEANINGFUL PROJECTS

DESCRIPTION

A learning path developed by *Fondazione LINKS* and inspired by the *Creative Learning approach of the MIT Media Lab* aims to explore the rich connections between creativity, making, and coding, and reflect on the relationship between technology and learning.

Using OctoStudio, Scratch, and micro:bit as tools to express themselves, the participants explore and experiment with block-based programming language in an intuitive and accessible way. Using a hands-on and playful approach, they discover how it is possible to connect the digital and analog (unplugged) worlds, in a collaborative and playful learning environment. The learning experience also integrates Artificial Intelligence tools used as "building materials" and explores the potential of educational robotics. Each individual session of the path follows the structure based on the Creative Learning spiral: imagine, create, play, share, reflect.

At the end of the journey, teachers and educators will create a learning activity inspired by their own experience in the workshops, promoting students' logical thinking, creativity, and collaborative problem solving, while adapting it to their specific subject area.

LEARNING OBJECTIVES

- Promote the development of students' **logical** and **critical thinking skills** by integrating and adapting **making** and **coding** activities into their own discipline.
- Develop **digital** and **coding skills** in teachers and students.
- Explore the **Creative Learning** approach as a framework for meaningful, student-centered education.
- Design and recreate a learning experience inspired by the principles of **Creative Learning**.
- Design, deliver, and document **learning units** that incorporate Creative Learning as an educational approach.

COMPETENCES DEVELOPED (DigCompEdu)

- Creatively using digital technologies
- Collaborative learning
- Active participation
- Developing digital content
- Coding
- Identifying needs and technological responses
- Collaborating through digital technologies

PARTICIPANTS REQUIREMENTS

- B1 English level required
- Personal computer

PROGRAMME

DAY 1

- Introduction to Fondazione LINKS, EdTech Unit and its LAB.
- The principles of Creative Learning from the MIT Media Lab (the "4Ps," "floors, ceilings, walls," the Creative Learning spiral, ...).
- OctoStudio as a creative tool.
- Analog and... digital tinkering!
- Scratch as a programming language and as an online learning community.
- Discovering and learning through the "Remix" of a Scratch project.

DAY 2

- Discovering Scratch extensions and using the webcam to interact with our project.
- "Ideas" section and Scratch Cards: useful work cards for activity design.
- Scratch integrated with artificial intelligence.
- Discovering the micro:bit extension for Scratch.
- Experimenting with the simulator, without the need for the micro:bit!
- Exploring possible developments with educational robotics.

DAY 3

- From lived experience to the design of a learning path inspired by the principles of Creative Learning.
- Adapting the teaching activity to one's own teaching discipline.
- Feedback and peer review among participants.

LOCATION

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INFORMATION

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