

Project Work

Learning objectives	
Teachers will propose class-based project work to their students as a parallel activity to the other four modules. The goal of the project work is to foster active roles for participants in which they can engage in authentic and interesting tasks to achieve a common goal by means of collaborative work and to develop relevant skills. A choice can be made out of the topics presented. The related activities will promote the use of creativity and digital skills for editing audio and videos and for creating digital and non-digital material.	
Topics and activities	
Phase 1	Identify an AI-based technology Chatbots / Image recognition / Spam filter
Phase 2	Discover how it works
Phase 3	Applications in the real world and ethical analysis
Phase 4	Disseminate the results
Digital competences (DigComp 2.1)	
Area 1: Information and Data Literacy - 1.1 Browsing, searching and filtering data, information and digital content	
Area 2: Communication and Collaboration - 2.2 Sharing through digital technologies - 2.3 Engaging in citizenship through digital technologies - 2.4 Collaborating through digital technologies	
Area 3: Digital content creation - 3.1 Developing digital content - 3.2 Integrating and re-elaborating digital content - 3.4 Programming	
Area 4: Safety - 4.2 Protecting personal data and privacy - 4.3 Protecting health and well-being - 4.4 Protecting the environment	
Area 5: Problem solving - 5.1 Solving technical problems - 5.3 Creatively using digital technologies	
DigCompEdu competences	

Area 1: Professional Engagement

- 1.1 Organisational communication

Area 2: Digital Resources

- 2.1 Selecting digital resources
- 2.3 Managing, protecting and sharing digital resources

Area 3: Teaching and Learning

- 3.2 Guidance
- 3.3 Collaborative learning
- 3.4 Self-regulated learning

Area 4: Assessment

- 4.3 Feedback and planning

Area 5: Empowering Learners

- 5.2 Differentiation and personalisation
- 5.3 Actively engaging learners

Area 6: Facilitating Learners' Digital Competence

- 6.1 Information and media literacy
- 6.2 Digital communication and collaboration
- 6.3 Digital content creation
- 6.4 Responsible use
- 6.5 Digital problem solving

Educational goals

Teachers will design and implement original group-based project works based on the topics discussed in the modules and responding to the interests and needs of the specific class. Projects will be designed and planned with students ensuring their active and meaningful participation.

Summary

1. Subject(s): All
2. Topic or Unit of Study: Parallel study of topics discussed in module 1-4
3. Grade/Level: Middle school

4. Objective: application of the learned content in a project focused on a real-life context, with special attention to collaboration and autonomy in the learning process

Implementation

Four phases

The project is carried out in four phases, with each phase thematically linked to the four educational modules. This means that the students will most likely be able to continue to the next activity of the project once they are nearing the end of a module. Using the knowledge and/or skills they learned during the module, they can apply this to their project.

Phase 1: Identify an AI-based technology

Once the groups are identified, students will start to work on a specific AI-technology. The technology that will be analysed in their work can come from the ones identified in the activities of Module 1 or it can be assigned by the teachers (see for instance the examples reported below)

Phase 2: Discover how it works

In the second phase students will discover how this technology works, by creating a small demo or project in Teachable Machine and/or Scratch (see Module2) depending on the types of activities proposed. This part of the project can also be implemented through unplugged activities (pen and paper), replicating the work of the technology using analogical material. The outcome of this phase is to have a first hand-on experience on how the identified technology works, getting the basis for the activities of the following phase.

Phase 3: Applications in the real world and ethical analysis

In this phase the group will explore applications of the technology in different domains (for instance educational, health, entertainment, etc.). The goal of this phase is to promote independent study to analyse possible applications, investigating positive and negative uses and applying the ethical matrix of Module 3 to further analyse the implications of such AI-based technology.

Phase 4: Disseminate the results

The last phase is dedicated to the dissemination of the information acquired in the previous phases, creating digital or non-digital outputs (e.g. posters, documents, videos, slideshow, etc.) for presenting what the students have discovered to their peers or parents.

Advanced level (second project work)

Project work presents many opportunities for students' ideas to be valued, their creativity to be encouraged, their interests to be nurtured, and for their learning needs to be met.

Project investigation for the second year can continue and expand the project work conducted during the first implementation of the DIG4Future modules, giving students the opportunity to enrich and deeper explore more advanced concepts related to AI such as using different tools (e.g. Craiyon, Teachable Machine) or explore ethical concerns around other applictaion of AI (e.g. Face recognition, Deepfake, Language genrator models such as GPT-3, etc.).