STORYCODE

Training course syllabus

Storycode: The Narrative Coding Approach for Teaching and Learning.

Designing, implementing, and assessing narrative coding practices.

KA220 – SCH - Cooperation Partnerships for school education

Official Partners:

BASIC INFORMATION

Course	Adopting the STEAM narrative coding approach for education in kindergarten and primary school
Project / EU Programme	STORYCODE 2023-2026, Erasmus+ KA201 Cooperation Partnerships for innovation
Country	Spain, Italy, Netherlands, and Lithuania
School Year	2023-2024
EQF / DigComp 2.2 / DigCompEdu	EQF (Level 6) / DigComp 2.2 (Intermediate) / DigCompEdu (B2)
Hours	18 hours
Credit type	Permanent teacher training
Language(s)	English, Spanish, Italian, Lithuanian, Dutch.
Delivery mode	100% Online (synchronous and asynchronous).
Training period	01/03/2024 - 01/06/2024
Training team	Computer Learning (Italy), STRIPES Onlus (Italy), Scuola Ladina di Fassa (Italy), Universidad Europea de Madrid (Spain).

1. COURSE ABSTRACT

STORYCODE is a 3-years research-action project is aimed at improving the quality of childhood education in **kindergarten** and **primary school** by the co-design and **development of innovative laboratory practices** and **training resources** based on the **STEAM paradigm** and the emerging **narrative-based coding** laboratory approach: introducing pupils aged 3-8 years to new digital literacies and computational thinking skills while fostering children's skills towards all targets of competence development. It is a **transnational** project promoted by the European Commission (Erasmus+ Programme KA201 - Cooperation Partnerships for innovation).

The project involves **7 official partners** (3 schools, 1 learning hub/gateway to schools, 1 training agency, 2 research partners) from **4 EU Countries** (IT, SP, NL, LT), as reported here below:
· 	P1-IT: Scuola Ladina di Fassa: SLF
· 	P2-IT: Computer Learning: CL
· 	P3-IT: STRIPES Onlus: STRIPES
· 	P4-SP: Universidad Europea de Madrid: UEM
· 	P5-SP: Fundacion Educativa Francisco Coll: FEFC
· 	P6-NL: Learning hub Friesland: LHF
· 	P7-LT: Kauno Simono Daukanto progimnazija: KSDP

The project STORYCODE offers to teachers a **free online training course** aimed at **adopting and implementing the novel STEAM based, narrative and tangible coding approach** in curriculum practices, while being able to **encompass and effectively use the best valuable strategies** and **digital tools** for their use in the classroom.

The training course for teachers is mainly developed by professionals from Italy and Spain, leveraging on a **synergy of competencies** between training agency (CL), center of research (STRIPES), school (SLF) and university (UEM) (mainly, but taking into account the contribution of all partners), hence ensuring appropriate quality standard and seeking the inclusion of students with difficulties or special educational needs using technology, storytelling, and collaborative paradigms.

The training course is designed to be delivered **totally online** on a **blended e-learning** methodology, thus allowing a large teacher participation and towards further exploitation: with activities ranging from **interactive synchronous meetings in virtual room with expert trainers** (essential to raise motivation, foster the spirit of a

community of practice, solve doubts and technical issues), to **asynchronous contents available on the online platform in form of video-lessons** for the most theoretical parts, to a large time dedicated to **autonomous exercise and project-based work** developed by participants. For all the course duration, a **tutoring service** will be available, both for technical/instrumental and methodological/pedagogical aspects. The project also allows the access and monitoring of training activities through a dedicated LMS platform.

The course will be aimed to increase teacher digital skills, for the design and development of new narrative and coding-based learning paths, in particular **target competencies** are:

1. Digital competencies (be able to use tablet, app, coding/computational thinking)
2. Design competencies (be able to design novel practices of narrative coding)
3. Methodological skills (be able to manage PBL, cooperative and peer learning, socio-relational dynamics, narrative skills)
4. Evaluation & Assessment competencies (be able to manage tools for assessment & feedback, tools for observation and documentation of learning paths)

Furthermore, in a **face-to-face LTTA** (Learning, Teaching and Training Activity) session, participants will deepen the approach by means of experience-based learning activities by using coding tools and setting adopted. As such, the structure of the course is provided here below.

The STORYCODE training course for teachers raises a **total duration of about 18 hours** of training, distributed in three blocks:

1. **Unit 1 – INTRODUCTION** (1 hour, synchronous). *Introduction to the training course. Welcome meeting with expert trainers with the goals of building a good group climate, share training course program and methodology, perform an ice-breaking activity.*
2. **Unit 2 – NARRATIVE CODING LABORATORY** (10 hours, synchronous + online contents + practical experimentation by participants and final feedback meeting with trainers). *The second unit, practical, is aimed at using coding tools as i-Code and Scratch Jr. for collaborative narrative programming within the STEAM paradigm in kindergarten and primary school. Hence, allowing teachers to perform some learning-by-doing experiences, from guided ones to project-based, aimed to manage technological and traditional tools, creating inclusive and collaborative educational activities.*
3. **Unit 3 – PEDAGOGICAL TOOLS AND RESOURCES** (2 hours, asynchronous video lessons). *The third unit, theoretical, is aimed to understand the pedagogical premises that support the STEAM based narrative and tangible coding approach. It reinforces the essential pedagogical premises to implement this approach in concrete daily practices, as: (a) digital languages, computational thinking, (b) cooperative and PBL learning, (c) narrative thinking, (d) resources for design and assessment.*
4. **Unit 4 – CO-DESIGN OF NEW LEARNING PATHS** (4 hours, problem-based activity/autonomous exercise performed by participants). *The fourth unit, practical for participants, consists of developing an educational project using the STEAM based narrative and tangible coding approach. The activity will be performed in a co-design spirit and tailored/personalized to specific educational needs. It could be developed individually or in a multi-interdisciplinary team of teachers.*
5. **Unit 5 – SKILLS BALANCE** (1 hour, synchronous). *Final skills balance of the course in a session with expert trainers, aimed at fostering critical sense and a self-evaluation of the level of competencies acquired by participants.*

2. TEACHER TRAINING NEEDS AND TARGET COMPETENCIES

This course is aimed to increase teachers' digital skills for the design and development of new narrative and coding-based learning paths, starting from digital competencies, pedagogical design competencies, and methodological skills. For this reason, **the European Qualifications Framework (EQF)**, **the European Framework for the Digital Competence of Educators (DigCompEdu)**, and **the Digital Competence Framework for Citizens (DigComp 2.2)** have been considered. The learning outcomes and competencies indicated below are based on the descriptors defined in Level 6 of the European Qualifications Framework (EQF)[1] and the B2 level of the European Framework for the Digital Competence of Educators (DigCompEdu)[2] and the Intermediate level of the digital Competence Framework for Citizens (DigComp 2.2).[3]

Core Competencies:

- C1. Participants should be able to demonstrate knowledge and understanding about narrative coding, collaborative and cooperative learning, promoting students' computational thinking (CT) and storytelling skills in school environments (kindergarten and primary school).
- C2. Participants should be able to apply their knowledge to their work in a professional way and should possess the competencies that are usually demonstrated when preparing and defending arguments and resolving problems in their area of study.
- C3. Participants should be able to gather and interpret relevant data in their area of study to make judgments that involve considering important social, scientific, or ethical issues.
- C4. Participants should be able to transmit information, ideas, problems, and solutions to both specialized and non-specialized audiences.
- C5. Participants should have developed the learning skills necessary to undertake further studies with a high degree of autonomy.
- C6. Knowing the functions, characteristics, and limitations of different theoretical models of computational thinking (CT), narrative coding, digital and tangible interfaces to create projects with personal meanings within the STEAM framework (*Science, Technology, Engineering, Arts, and Mathematics*).

Cross-Curricular Competencies:

- CC1: Autonomous learning. An ability that allows the person to choose the most effective learning strategies and tools and to apply the acquired knowledge independently.
- CC2: Information management. Ability to search, select, analyze, and integrate information from different sources.
- CC3: Planning and time management. Ability to establish objectives and choose the means to achieve those objectives effectively using time and resources.
- CC4: Critical thinking. Ability to analyze an idea, phenomenon or situation from different perspectives and adopt a personal approach, built rigorously and objectively, and not from intuition.
- CC5: Decision making. Ability to choose between alternatives and existing ways to effectively solve different situations or problems.
- CC6: Teamwork. Ability to integrate and collaborate actively with other people, areas and / or organizations to achieve common goals.
- CC7: Use of information and communication technologies (ICT). Ability to effectively use information and communication technologies as a tool for searching, processing, and storage of information, as well as for the development of communication skills.

Specific Competencies:

- S1: Being able to set the goals of collaboration, storytelling, and computational thinking with kindergarten and primary school students, proposing and negotiating the goals with care recipients and other parties concerned.
- S2: Being able to plan and conduct narrative coding and collaboration, promoting students' computational thinking and storytelling skills within the STEAM framework in a collaborative environment.
- S3: Being able to describe and measure social, personal and group variables to promote computational thinking, cooperative learning, and storytelling skills.
- S4: Being able to identify differences, problems, and needs.
- S5: Knowing how to analyze the context in which individual behaviors, group and organizational processes occur.
- S6: Knowing how to give precise and appropriate feedback to students and families.
- S7: Being able to prepare verbal and written cooperative narrative coding projects.

Learning outcomes
1. **LO1 (Knowledge).** The participant will acquire advanced knowledge about: i) digital competencies (using a tablet, theories and principles of narrative coding, computational thinking and storytelling, collaborative and cooperative learning in school environments, aimed at the inclusion of students with and without difficulties), ii) design competencies (designing novel practices of narrative coding).
2. **LO2 (Methodological skills).** The participant will develop advanced skills to set up narrative coding scenarios, promoting computational thinking and storytelling projects with personal meanings in kindergarten and primary school (managing Problem-Based Learning PBL, cooperative and peer learning, socio-relational dynamics, narrative skills).
3. **LO3 (Responsibility & Autonomy).** The participant will develop skills to manage educational activities based on narrative coding, storytelling, and computational thinking, aimed at collaboration, inclusion, and prevention of group exclusion, taking responsibility for decision-making and development of students and groups.

The following table shows the relationship between the competencies developed during the course and the learning outcomes pursued:

Competencies	Learning outcomes
C1, C6, CC2, S3, S4, S6	**LO1 (Knowledge).** The student will acquire advanced knowledge about: i) digital competencies (using a tablet, theories and principles of narrative coding, computational thinking and storytelling, collaborative and cooperative learning in school environments, aimed at the inclusion of students with and without difficulties), ii) design competencies (designing novel practices of narrative coding).
C3, C4, CC3, CC4, CC5, CC6, CC7, S2, S7	**LO2 (Methodological skills).** The student will develop advanced skills to set up narrative coding scenarios, promoting computational thinking and storytelling projects with personal meanings in kindergarten and primary school (managing Problem-Based Learning PBL, cooperative and peer learning, socio-relational dynamics, narrative skills).
C2, C5, CC1, S1, S5	**LO3 (Responsibility & Autonomy).** The student will develop skills to manage educational activities based on narrative coding, storytelling, and computational thinking, aimed at collaboration, inclusion, and prevention of group exclusion, taking responsibility for decision-making and development of students and groups.

3. TEACHING-LEARNING METHODOLOGIES

The types of teaching-learning methodologies used are indicated below:
- Online video lesson.
- Online tutorials.
- Debates & participation.
- Practical exercises.
- Autonomous work.
- Cooperative Problem Based Activity.

4. COURSE PROGRAMME CONTENTS

Title: Storycode: The Narrative Coding Approach for Teaching and Learning.
Subtitle: Designing, implementing, and assessing narrative coding practices.
Module 0 – Introduction to the training course
    0.1 Self-assessment questionnaire: Initial self-assessment questionnaire.
    0.2 Course introduction: Introduction to the STORYCODE training course.

Module 1 – Training course introduction and coding essential.
   1.1 Coding, STEAM, computational thinking - Part I: The role of coding strategies in digital education to develop computational thinking and other skills. Main concepts. The STEAM paradigm, from STEM to STEAM.
   1.2 Coding, STEAM, computational thinking - Part II: Examples of best state-of-the-art available methodologies and tools for coding.
Module 2 – Narrative tangible coding laboratory experiences.
   2.0 Introduction: Introduction to Unit/Section 2 of the training course.
   2.1 Welcome meeting & Introduction to i-Code: (1) Meeting of participants, sharing of training course program and objectives, activation/ice-breaking activity; (2) i-Code "technical training" with expert trainer.
   2.2 i-Code tutorials: Watching technical and educational video tutorials on the i-Code app or port.
   2.3 i-Code challenges: Autonomous experience in performing a N. of i-Code challenges by participants.
   2.4 i-Code Project: Development of a project with i-Code based on specific task assigned by the trainer.
   2.5.A Introduction to Scratch Jr.: SJ "technical training".
   2.5B.1 Introduction to Coding unplugged - Part I: General introduction to Coding Unplugged.
   2.5B.2 Introduction to Coding unplugged - Part II: Coding unplugged example activities.
   2.5B.3 Introduction to Coding unplugged - Part III: Storytelling and coding unplugged.
   2.6A SJ project: Development of a project with SJ based on specific task assigned by the trainer.
   2.6B Project with coding unplugged: Prepare the materials for a possible activity with coding unplugged.
   2.7 Feedback meeting: Mid-term feedback meeting with expert trainer (resolution of doubts & troubleshooting technical/methodological issues).
Module 3 – Pedagogical tools and resources
   3.0 Introduction: Introduction to Unit/Section 3 of the training course.
   3.1 Managing groups, collaborative and project-based learning: Cooperative learning, managing groups and socio-relational contexts, problem, and project-based learning.
   3.2.1 Storytelling concepts for education: Narrative skills and competencies in education for kindergarten and primary school.
   3.2.2 Creating audiovisual narrations - script & storyboard: Operational tools for audiovisual story design and creation as script and storyboard.
   3.3.1 Project design: Operational tools for design of new educational projects (e.g., project design sheet).
   3.3.2 Project assessment: Operational tools evaluation of new educational projects (assessment grid, etc.).
Module 4 – Co-design of novel practices
   4.1 Co-design of new learning practices: Co-design of new project activities by teachers, by drafting new project design sheets for following research and experimentation with pupils in 2024-25 & 2025-26.
Module 5 – Skills balance
   5.1 Self-assessment and satisfaction questionnaire: Provide answer to final questionnaires by teachers.
   5.2 Final wrap-up meeting: Final virtual meeting with expert trainers to draw a skills balance of the competencies acquired and promote self-reflection upon experience by participants.

5. LEARNING ACTIVITIES

Listed below are the types of learning activities and the number of hours the student will spend on each one:

Learning activity	Number of hours	% Online (synchronous)	% Online (asynchronous)
Online video lesson	4	0%	100%
Online Tutorials	2	0%	100%
Debates & Participation	6	100%	0%
Practical Exercises	1	0	100%
Autonomous work	1	0%	100%
Cooperative Problem Based Activity	3	0%	100%
Assessment	1	0%	100%
TOTAL	18 h		

6. ASSESSMENT

Listed below are the assessment systems used and the weight each one carries towards the final course grade:

Assessment system	Weight
Activity 1 (Active Methodologies): Problem Based Activity (PBA). *[Co-design of Collaborative Narrative Coding Project in the school. Problem-Based Activity - PBA].*	50%
Activity 2 (Objective Test): Objective Assessment of the Course Sections. *[Number of correct answers in multiple answers and evaluation of form and content in open questions].*	50%

When the student accesses the course on the Virtual Campus, he/she will find a description of the assessment activities he/she must complete, as well as the delivery deadline and assessment procedure for each one.

7. SCHEDULE

This table shows the delivery deadline for each assessable activity in the course:

	Assessable activities	Period
Italy	Course Opening [Storycode, The Narrative Coding Approach for Teaching and Learning. Designing, Implementing, and Assessing Narrative Coding Practices].	March 8, 2024
	Activity 1 (Active Methodologies): Problem Based Activity (PBA). [Co-design of Collaborative Narrative Coding Project in the school. Problem-Based Activity - PBA].	March-June 2024
	Activity 2 (Objective Test): Objective Assessment of the Course Sections. [Number of correct answers in multiple answers and evaluation of form and content in open questions].	March-June 2024
Spain	Course Opening [Storycode, The Narrative Coding Approach for Teaching and Learning. Designing, Implementing, and Assessing Narrative Coding Practices].	April 10, 2024
	Activity 1 (Active Methodologies): Problem Based Activity (PBA). [Co-design of Collaborative Narrative Coding Project in the school. Problem-Based Activity - PBA].	April -June 2024
	Activity 2 (Objective Test): Objective Assessment of the Course Sections. [Number of correct answers in multiple answers and evaluation of form and content in open questions].	April -June 2024
Nederlands	Course Opening [Storycode, The Narrative Coding Approach for Teaching and Learning. Designing, Implementing, and Assessing Narrative Coding Practices].	April -May 2024
	Activity 1 (Active Methodologies): Problem Based Activity (PBA). [Co-design of Collaborative Narrative Coding Project in the school. Problem-Based Activity - PBA].	May – September 2024
	Activity 2 (Objective Test): Objective Assessment of the Course Sections. [Number of correct answers in multiple answers and evaluation of form and content in open questions].	May – September 2024
Lithuania	Course Opening [Storycode, The Narrative Coding Approach for Teaching and Learning. Designing, Implementing, and Assessing Narrative Coding Practices].	Abril-May 2024
	Activity 1 (Active Methodologies): Problem Based Activity (PBA). [Co-design of Collaborative Narrative Coding Project in the school. Problem-Based Activity - PBA].	May – September 2024
	Activity 2 (Objective Test): Objective Assessment of the Course Sections. [Number of correct answers in multiple answers and evaluation of form and content in open questions].	May – September 2024

This schedule may be subject to changes for logistical reasons relating to the activities. The student will be notified of any change as and when appropriate.

8. BIBLIOGRAPHY

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9. HOW TO COMMUNICATE WITH YOUR PROFESSOR

Whenever you have a question about the content or activities, don't forget to post it to your course forum so that your classmates can read it. You might not be the only one with the same question!

If you have a question that you only want to ask your professor, you can send him/her a private message from the Campus Virtual. And if you need to discuss something in more detail, you can arrange an advisory session with your professor.

It's a good idea to check the course forum on a regular basis and read the messages posted by your classmates and professors, as this can be another way to learn.

10. DESCRIPTION OF EVALUATION ACTIVITIES

Activity 1 (Active Methodologies): Problem Based Activity (PBA). [Co-design of Collaborative Narrative Coding Project in the school. Problem-Based Activity – PBA]

- Write the group project as requested by the teacher, following his/her instructions. Both the form and content of the report will be evaluated, along with the group collaboration, according to the criteria detailed below, established for the written assignments in the course.

Activity 2 (Objective Test): Objective Assessment of the Course Sections. [Number of correct answers in multiple answers and evaluation of form and content in open questions].

- Answer multiple-choice questions and/or open-ended questions following the exam instructions.
- In the case of open-ended questions, their form and content will be evaluated according to the criteria detailed below, established for the written assignments in the course.

11. DESCRIPTION OF THE PROBLEM BASED ACTIVITY (PBA).

11.1 Instructions

1. Join a collaborative work group comprising three participants and actively participate within it.
2. Select a theme of didactic or personal significance to incorporate into the annual school planning.
3. Develop a collaborative narrative coding project for your students following the scheme provided below (Annex 1).
4. The planning may be short-term or long-term, focused on a specific subject or cross-disciplinary.
5. Access the designated section on the virtual campus for this activity and upload your group report, which should not exceed 2000 words.

11.2 Recommendations

1. Implement the narrative coding project structure outlined in Annex 1.
2. Apply an individual assessment system to each student twice: once before the beginning of the project and once after its completion. You can use the provided system in Annex 2 or create your own.
3. Apply a collaborative group assessment system to each group three times: once at the beginning of the project, once midway through, and once during the final session. You may use the provided system in Annex 3 or develop your own.
4. Administer a satisfaction questionnaire to all students regarding the narrative coding activity three times: once at the beginning of the project, once midway through, and once at the final session. You may opt to use the provided system in Annex 4 or create your own.

11.3 Evaluation Criteria

Elements	Aspect to Evaluate	Grade	Max
Essay (7 pts.)	The narrative coding project is explained clearly and attractively for the reader.		1
	The context of the project activities is presented clearly and its phases in detail, allowing for their replicability.		1
	The initial sections of the text naturally lead to the presentation of the narrative coding project activities.		1
	The text is coherent and allows for the exploration of the proposed topic.		1
	Detailed instructions are provided for the students' briefing phase.		1
	Detailed instructions are provided for the students' debriefing phase.		1
	Individual initial assessments of the students are attached using Annex 2 or an instrument developed by the teacher.		1
Form (3 pts.)	The document has an approximate length of 2000 words.		0,60
	The language used is appropriate, the writing is careful, and it is clear.		0,60
	The writing is fluid and presents a logical structure that facilitates reading.		0,60
	The use of abbreviations is appropriate and consistent throughout the document.		0,60
	There are no spelling or grammatical errors.		0,60

11.4 [ANNEX 1] NARRATIVE CODING PROJECT STRUCTURE
A. Activity Details.

1. Narrative coding project title:
2. Topic:
3. Students' grade:
4. School:
5. Country:
6. Planning period:
7. Time of the activity:
8. Teacher's name:
9. Individual or transversal subject:

B. Abstract of the practice (max 200 characters).

Intro. ... Methodology. ... Results. ... Implications. ...

C. General goal of the practice and specific objectives.

D. Time organization.

E. Space organization.

F. Description of procedures and methodology.

F.1 Student briefing (How the activity is explained to students).

F.2 Small group setting:

F.3 Student debriefing (How the discussion with students - at the end of the activity – is structured by the teacher): ...

F.4 The phases of the activity.

    F.4.1 Phase 1: ...

    F.4.2 Phase 2: ...

    F.4.3 Phase 3: ...

G. Employed technologies.

H. Other employed materials.

I. Description of the narrative coding project's final product.

J. Project Attachments

    J.1 Individual student assessment (Annex 2 or your own).

    J.2 Collaborative group assessment (Annex 3 or your own).

    J.3 Student's satisfaction questionnaire (Annex 4 or your own).

K. Place and date.

L. Signatures

11.5 [ANNEX 2] - INDIVIDUAL STUDENT ASSESSMENT

This questionnaire should reflect your perception of the student's competencies and behavior in class [strict professional secrecy].

TEACHER'S DATA

Teacher's Name:			
Teacher's Gender:	☐ Male	☐ Female	☐ Prefer not to say
Subject(s) Taught:			
Date of Record:			
School Name:			
Time you spend in the student's class:	☐ Less than 40 minutes/day (200 minutes/week)	☐ 40 minutes/day (200 minutes/week)	☐ Full time 4 hours/day (20 hours/week)

STUDENT'S DATA

Student's Name:					
Student's Grade:					
Student's Gender:	☐ Boy		☐ Girl		☐ Prefer not to say
Consider that you know the student:	☐ Little		☐ Fairly Good		☐ Very Good
Does the student present any kind of difficulty?	☐ Yes		☐ No		
What difficulty?	☐ Language	☐ Learning	☐ Behavior	☐ ADHD ☐ ASD	☐ Other [Specify]:
Does the student have a certified diagnosis?	☐ Yes		☐ No		

Compared to his/her peers:

	A lot less	Something less	Slightly less	Average	Slightly more	Something more	Much more
How does he/she work?	☐	☐	☐	☐	☐	☐	☐
How does he/she behave?	☐	☐	☐	☐	☐	☐	☐
What is his/her learning like?	☐	☐	☐	☐	☐	☐	☐
How happy do you see him/her?	☐	☐	☐	☐	☐	☐	☐

Regarding the student's computational, narrative, and social thinking:

	Competence	Description	Low	Medium-low	Medium	Medium-high	High
COMPUTATIONAL THINKING	PROBLEM IDENTIFICATION	Identifies the problem it needs to address.	☐	☐	☐	☐	☐
	DECOMPOSITION	Breaks down a complex problem or situation into simpler parts.	☐	☐	☐	☐	☐
	GOAL IDENTIFICATION	Identifies and organizes goals.	☐	☐	☐	☐	☐
	IDENTIFY POSSIBLE ACTIONS	Can identify actions that can be used to implement the solution.	☐	☐	☐	☐	☐
	CHOOSING A STRATEGY	Identifies one or more solution strategies to achieve the final goal.	☐	☐	☐	☐	☐
	CONSTRUCTION OF A SEQUENCE OF ACTIONS	Can describe the solution to a complex problem or situation as a sequence of actions to be performed.	☐	☐	☐	☐	☐
	PREDICTION OF THE CONSEQUENCES OF A CHOICE	Can select strategies by predicting possible consequences.	☐	☐	☐	☐	☐
	MONITORING	Monitors own performance. Identifies course errors, knows how to correct them in progress.	☐	☐	☐	☐	☐
NARRATIVE	STRUCTURE IDENTIFICATION	Identifies the structure of a narrative and the parts from which it is composed (e.g., beginning, unfolding, end).	☐	☐	☐	☐	☐
	COHERENCE	The different parts of the narrative are linked together by logical and temporal connections (before, after).	☐	☐	☐	☐	☐
	COHESION	The different parts of the narrative revolve around a clearly identifiable theme, argument, or problem-solution dyad.	☐	☐	☐	☐	☐
	IDENTIFICATION OF THE ELEMENTS	Identifies the different elements of a narrative, including characters and context.	☐	☐	☐	☐	☐
	CONCORDANCE	The narrative aspect is reflected in the paper and the activities performed.	☐	☐	☐	☐	☐
SOCIO-RELATIONAL	COLLABORATIVE SPIRIT OF GROUP	Actively intervenes and collaborates with others to achieve the goal.	☐	☐	☐	☐	☐
	RECOGNITION OF ROLES AND RULES	Recognizes and accepts different roles and rules.	☐	☐	☐	☐	☐
	RESPECT FOR EACH OTHER	Assumes behaviors of respect toward towards others and diversity.	☐	☐	☐	☐	☐
	IDENTIFICATION OF EMOTIONS	Perceives and recognizes emotions, one's own and others', and expresses them appropriately to the context.	☐	☐	☐	☐	☐

			Low	Medium-low	Medium	Medium-high	High
	TOLERANCE TO FRUSTRATION	Tolerates frustration (e.g., exclusion, failure, unconstructive criticism constructive, boredom, etc.).	☐	☐	☐	☐	☐

11.6 [ANNEX 3] - COLLABORATIVE GROUP ASSESSMENT
GROUP'S DATA

Collaborative group assessment	☐ Initial		☐ Intermediate	☐ Final
Group code (e.g. 1, 2, 3….)	Group _____			
Number of group members (3-5):	nº_____			
Date of Record:				
Name of the teacher filling out this observation form:				
What time did the collaborative activity take place? (e.g. from 10.00 a.m. to 11 a.m.)	From _____ To _____			
Students' Names:				
Students' Grade:				
Student's gender:	Boys nº_____		Girls nº_____	
How many students in the group are experiencing difficulties?	nº_____			
What difficulty?	☐ Language	☐ Learning	☐ Behavior ☐ ADHD ☐ ASD	☐ Other [Specify]:
Does any student in the group have a certified diagnosis?	☐ Yes	☐ No		

Regarding the group collaboration (Low = infrequent and mild ➔ High = frequent and intense):

	Competence	Description	Low	Medium-low	Medium	Medium-high	High
COLLABORATIVE GROUP	INTERRUPTIONS	One or more participants do not respect the alternation of turns.	☐	☐	☐	☐	☐
	OFF TASK	The group talks about arguments outside the topic of the session.	☐	☐	☐	☐	☐
	SELF-REGULATION	One or more group members call their classmates to order and focus on the task.	☐	☐	☐	☐	☐
	POSITIVE COMMENTS	One or more group members make positive comments about the contribution of one or more classmates.	☐	☐	☐	☐	☐
	FOCUSED ON TASK	The group works on the same assigned task.	☐	☐	☐	☐	☐
	SOCIAL AWARNESS	Be aware of your peers' emotions.	☐	☐	☐	☐	☐
	SOCIAL COMMUNICATION	Communicate ideas and feelings to others, respecting the alternation of turns.	☐	☐	☐	☐	☐
	SOCIAL MOTIVATION	Initiate and nurture social exchanges.	☐	☐	☐	☐	☐
	SPACE FOR EVERYONE	Everyone can express their opinion.	☐	☐	☐	☐	☐
	INCLUSION	The group tries to adapt and involve all its members	☐	☐	☐	☐	☐
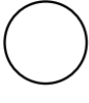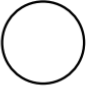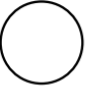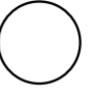
11.6 [ANNEX 4] – STUDENT'S SATISFACTION ASSESSMENT

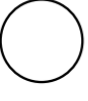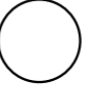| Project phase	☐ Initial		☐ Intermediate		☐ Final
Student's name					
Group code					
School Name:					
Date of Record:					
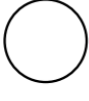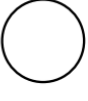
On this page, you'll find some sentences that describe how you felt about the coding activity we did in class earlier. Let's see which ones match how you feel!
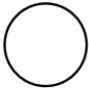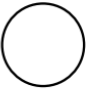
Put a cross on the answer you pick.
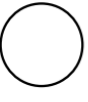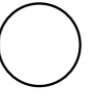
OVERALL, I HAD FUN DOING THIS ACTIVITY.

☐ 9   ☐ 8   ☐ 7   ☐ 6   ☐ 5   ☐ 4   ☐ 3   ☐ 2   ☐ 1

IT WAS EASY TO UNDERSTAND HOW TO DO IT.

☐ 9   ☐ 8   ☐ 7   ☐ 6   ☐ 5   ☐ 4   ☐ 3   ☐ 2   ☐ 1

I LIKED WORKING WITH MY GROUP.

☐ 9   ☐ 8   ☐ 7   ☐ 6   ☐ 5   ☐ 4   ☐ 3   ☐ 2   ☐ 1

12. DESCRIPTION OF THE PROBLEM BASED ACTIVITY (PBA).

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[1] **Descriptors defining levels in the European Qualifications Framework (EQF).** Recovered on line 02/11/2023 https://ec.europa.eu/ploteus/content/descriptors-page#footnote1.

1. Level 1 - Learning outcomes. Knowledge: Basic general knowledge; Skills: Basic skills required to carry out simple tasks; Responsibility and autonomy: Work or study under direct supervision in a structured context.
2. Level 2 - Learning outcomes: Knowledge: Basic factual knowledge of a field of work or study; Skills: Basic cognitive and practical skills required to use relevant information to carry out tasks and to solve routine problems using simple rules and tools; Responsibility and autonomy: Work or study under supervision with some autonomy.
3. Level 3 - Learning outcomes. Knowledge: Knowledge of facts, principles, processes, and general concepts, in a field of work or study; Skills: A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information; Responsibility and autonomy: Take responsibility for completion of tasks in work or study; adapt own behavior to circumstances in solving problems.
4. Level 4 - Learning outcomes. Knowledge: Factual and theoretical knowledge in broad contexts within a field of work or study; Skills: A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study; Responsibility and autonomy: Exercise self-management within the guidelines of work or study contexts that are usually predictable, but are subject to change; supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities.
5. Level 5 - Learning outcomes. Knowledge: Comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge; Skills: A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems; Responsibility and autonomy: Exercise management and supervision in contexts of work or study activities where there is unpredictable change; review and develop performance of self and others.

6. Level 6 - Learning outcomes. Knowledge: Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles; Skills: Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study; Responsibility and autonomy: Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups.

7. Level 7 - Learning outcomes. Knowledge: Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research. Critical awareness of knowledge issues in a field and at the interface between different fields; Skills: Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields; Responsibility and autonomy: Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches; take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams.

8. Level 8 - Learning outcomes. Knowledge: Knowledge at the most advanced frontier of a field of work or study and at the interface between fields; Skills: The most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice; Responsibility and autonomy: Demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research.

[2] **Selected levels of proficiency expected by students in the European Framework for the Digital Competence of Educators (DigCompEdu)**. Recovered online 02/11/2023. https://publications.jrc.ec.europa.eu/repository/handle/JRC107466

1. Professional Engagement. Enhancing professional Practice (B2): 1.1 Organizational communication; 1.2 Professional collaboration; 1.3 Reflective practice; 1.4 Digital Continuous Professional Development (CPD).
2. Digital Resources. Strategically using interactive resources (B2): 2.1 Selecting; 2.2 Creating & modifying; 2.3 Managing, protecting, sharing.
3. Teaching and Learning. Enhancing teaching & learning activities (B2): 3.1 Teaching; 3.2 Guidance; 3.3 Collaborative learning; 3.4 Self-regulated learning.
4. Assessment. Strategic and effective use of digital assessment (B2): 4.1 Assessment strategies; 4.2 Analyzing evidence; 4.3 Feedback & planning.
5. Empowering Learners. Strategically using a range of tools to empower (B2): 5.1 Accessibility & inclusion; 5.2 Differentiation & personalization; 5.3 Actively engaging learners.
6. Facilitating Learners' Digital Competence. Strategically fostering learners' digital competence (B2): 6.1 Information & media-literacy; 6.2 Communication; 6.3 Content creation; 6.4 Responsible use; 6.5 Problem solving.

[3] **Selected levels of proficiency expected by students in the European in the digital Competence Framework for Citizens (DigComp 2.2).** Recovered online 02/11/2023. https://publications.jrc.ec.europa.eu/repository/handle/JRC128415

1. Information and Data Literacy: 1.1 Browsing, searching and filtering data, information and digital content; 1.2 Evaluating data, information, and digital content; 1.3 Managing data, information and digital content.
2. Communication and Collaboration: 2.1 Interacting through digital technologies; 2.2 Sharing through digital technologies; 2.3 Engaging citizenship through digital technologies; 2.4 Collaborating through digital technologies; 2.5 Netiquette; 2.6 Managing digital identity.
3. Digital Content Creation: 3.1 Developing digital content; 3.2 Integrating and re-elaborating digital content; 3.3 Copyright and licenses; 3.4 Programming.
4. Safety: 4.1 Protecting devices; 4.2 Protecting personal data and privacy; 4.3 Protecting health and well-being; 4.4 Protecting the environment
5. Problem-Solving: 5.1 Solving technical problems; 5.2 Identifying needs and technological responses; 5.3 Creatively using digital technology; 5.4 Identifying digital competence gaps.