Dash&Dot

Organising institution: National Association of Educational Innovation and Inclusion in Schools (AENIE)

Country: Portugal

Age: 10-12 years old

Key question: How to use technology to develop computational thinking?

Objectives:

The main goal of the general program for Digital Atelier is to help students develop computational thinking skills

Other goals:

- to learn how to solve problems,
- to learn how to code with one specific visual language (Blockly),
- to develop collaboration skills,
- to stimulate creativity,
- to help students being happier

Time: 6 hours

Software and apps to be used:

- Dash & Dot
- Go App (Dash & Dot)
- Path App (Dash & Dot)
- Blockly App (Dash & Go)
- ClassDojo Platform

Brief presentation: The main goal of this program will be to develop new ways of learning using technology. This will be made by working many different aspects of computational thinking such as abstraction, depuration and problem solving skills.

Studens are going to be active participants and they will be in charge of designing their own learning experiences. The teacher will be a facilitator of the learning process.

1. The teacher will be in charge of stimulating their students motivation to learn as well as their curiosity.

2. The students will work in groups of 3-4 elements in order to stimulate collaboration and the development of social skills.

3. Each group will create their own learning path always keeping in mind that nobody will be left behind, apart from the colleagues that have already learned how to develop the task.

Topics covered:

- Coding
- Computational Thinking
- Abstract Thinking
- Logical Skills
- Problem Solving Skills
- Wellbeing

Civic engagement: Each classroom will work on subjects related to their own hometown. Some will work subjets related to gastronomy, other related to historical facts and others will even work using their own imagination, something out of the box. Dash & Dot robots will be used in almost every task from the beginning until the end of the activities. During those activities students and teachers will create media content such as pictures and videos keeping in mind that we should finish the project and have good records of the work developed.

Materials needed:

- Tablets/smartphones
- Robots Dash & Dot

Main inspirations taken from personal research:

Learning for wellbeing is one of the keys to succeed and overrun todays' obstacles

Mass media and social media connections: Learning for wellbeing Learning for wellbeing is one of the main areas of interest in education nowadays. It is now known that a happy and fullfilled student is capable of overrun much easily their obstacles. Classdojo platform will be used all along the way with the students and their parents to assess their work and behaviour. This helps them learning responsibility and collaboration while also helps the students keep track of their work.

How do you plan to give voice to students to present or show their personal skills and knowledge? Students will work in groups. Each group will have their own captain, responsible for not letting anyone behind when it comes to learning. They will be responsible for helping each other and recording their own progress by making videos and taking pictures of themselves working.

How do you collect information as the starting point of a Digital Atelier? As stated before, each student and teacher will be responsible for recording the progress they make by recording videos and taking pictures along the way.

It is also possible to use something like BEBRAS computational thinking test at the beginning of the digital atelier.

Introducing students to the key question - the research begings:

- We start with Dash & dot puzzles to let them know the robots. Dash & dot – Who are we?
- Fulfilling all the puzzles will allow them to know the tools they have in hands. Do you think you can do it?
- When they know the tools they will be able to start creating their own projects to learn any subject they feel curious about. What do you think you need to learn?

Experimental phase

1. Action that unfolds the practical activity to clarify the question (experimental phase):
2. Active work of the students

3. Presentation of findings and results (visualisation of information): Powerpoint presentations, Videos, Pictures
4. Analysis of results

Project/design phase - part 1

1. Second action that unfolds the practical activity (project/design phase)
2. Active work of the students: Findings can be presented utilizing the ClassDojo platform where every students progress will be registered.
3. Presentation of findings and results (visualisation of information):
4. Analysis of results:

Project/design phase - part 2

1. Third action that unfolds the practical activity (project/design phase): When they know the tools they will be able to start creating their own projects to learn any subject they feel curious about. "What do you think you need to learn?"
2. Active work of the students: We will start this third part of the digital atelier with a short relaxation session. Here we want the kids to think about something out of the box. Something they would like to explore using the robots. The goal is to help them find a subject or theme they would like to explore.
3. Presentation of findings and results (visualisation of information): Findings can be presented utilizing the ClassDojo platform where every students progress will be registered.
4. Analysis of results:

Approach to a new software or a new app: As the activities go on the students will learn how important it could be to be able to code a robot and make it interact with humans. They will of course learn how useful it could be to use their coding skills in the development of daily tasks as "simple" as solving mathematical problems, moral/social dilemas, etc.

Links between the Digital Atelier and real life of the students:

How do you plan to evaluate knowledge and skills?The evaluation process will be done by utilizing students' and teachers' own records and registries. Self-assessment will be a vital key to this project.

Conclusion: This project will be developed by and with students and teachers. Starting from the creation point until the assessment of their own learning goals they will be held responsible for recording and registering it. This will teach them responsibility, collaboration and many computational thinking skills useful for their daily life and school activities in every different subject that constitute formal curricula.

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