Intellectual Output 5

Activity Design (lesson plan)

involving the use of social media in school

The magic of the Fibonacci sequence

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Title of the activity	Subject/discipline	Type of lesson
• The magic of the Fibonacci sequence	• computer science • mathematics, • social networking, • non-formal communication	• In-depth lesson

Age of students	Duration	Social Media tools used
17 - 18 years/ grade 12	150 minutes	Instagram, YouTube, Facebook Rooms

Learning outcomes	Methods/strategies used
• The role of the activity is to stimulate students' critical thinking and push them towards in-depth study (gold number)	• Discussion, group work, cross assessment, practical computer applications

Description

- teacher introduces the topic of the current lesson: Fibonacci sequence
- linking the new concept to students' pre-existing acquisitions (algorithms using recurrences)
- real-life examples are given where the Fibonacci sequence is used: flower petals, pine cones, tree branches, snail shells, spiral galaxies, human face proportions, hurricanes, bee hive organisation
- outline the general algorithm applicable
- form teams to work on a video to be posted on Youtube

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- show the video to colleagues
- groups of students will collaborate using Facebook Rooms and will work together on real-life examples that follow the golden number template and work out the details of making a suggestive image for the topic studied
- each group will prepare an Instagram post illustrating elements in nature whose anatomy/construction follows the template of the Fibonacci terms
- students will complete the activity feedback form on the Microsoft Teams platform in the dedicated class team
- all materials will be posted to the class channel on Microsoft Teams
- for the next week students will work together to create a web page about Fibonacci's String and the the golden number (separate pages can be created for each team)

Assessment

- Activity evaluation questionnaire - internal tool of the Microsoft Teams platform

Resources

- Microsoft Teams platform - class team
- Class group on Facebook application
- Youtube platform, Instagram platform
- https://www.youtube.com/watch?v=rWkG4aUCY7w
- Teacher's annexes

Tips & Tricks

- encourage students to practice both positions: that of presenter of a new concept and that of recipient of explanations
- conduct anonymous feedback surveys so students can express themselves freely
- keep reminding students of elements of G.D.P.R. legislation (possibly encourage them to do their own projects on this legislation) and elements of ethics.
- challenge students to find two ways to explain each new concept.
- never ask students to use unlicensed applications or images taken from the Internet (possibly Creative Commons CC images).

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