

How mathematical memes bring teachers and students together during Italy's pandemic lockdown

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Introduction

 During lockdowns, teachers worldwide struggled to engage students in distance learning settings (Bakker & Wagner, 2020; Fondazione Agnelli, 2021).

 In Italy, this struggle depended mostly on the fact that teachers simply moved their teacher-centred lessons from in-person to distance mode, ignoring the discontinuity between XXI century learners and educators (Bronkhorst & Akkerman, 2016).

 The pandemic did not create malfunctions from scratch, it just amplified malfunctions that were already there making them observable as the PCR does on DNA samples.

Rationale & Theoretical background



We can challenge the discontinuity between XXI century learners and educators by importing a product of the out-of-school digital culture into the in-school formal learning environment.

Mathematical memes are typical products of the XXI century culture: they are hybrid representations of mathematical statements with an epistemic power to initiate argumentation processes (Bini et al., 2020), still widely understudied in mathematics education.

Bini and Robutti (2020) explored mathematical memes educational potentialities as boundary objects (Star & Griesemer, 1989) between the communities of students and teachers during in-person school activities.

Community of teachers



Community of students



Research as Boundary Object

Can Mathematical Memes act as Boundary Objects in distance-mode activities?

Methodology



- 1 team competition structured as a computer hackathon, with students creating mathematical memes on assigned topics and presentations of the mathematical content
- 3 online 2h meetings for each school grade: preliminary competition, semifinal & final
- 47 mathematical memes and presentations created, shared on Padlet walls and presented via WebEx
- 2 juries of experts (teachers, Maths Master students and MathEd PhD students)
- 1 Instagram page @lifeonmath to share the mathematical memes created
- 2 feedback questionnaires (for students and for teachers)
- 12 hours of videorecordings

Results

Bridging the gap

"I liked the idea of communicating mathematics through an object very close to the world of students"

"I saw interest in students that I thought I had lost for good"

"Students already use memes and they are much better than us at it"

"It was necessary to give importance to the mathematical content but at the same time to find the right idea to create the meme"

"This activity allowed me to express my creativity and to reinforce mathematical concepts while having fun, even through mistakes made while creating the memes"

"We explored the world of mathematics in a different way"



Who's the winner?
Join the jury and cast your vote!



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