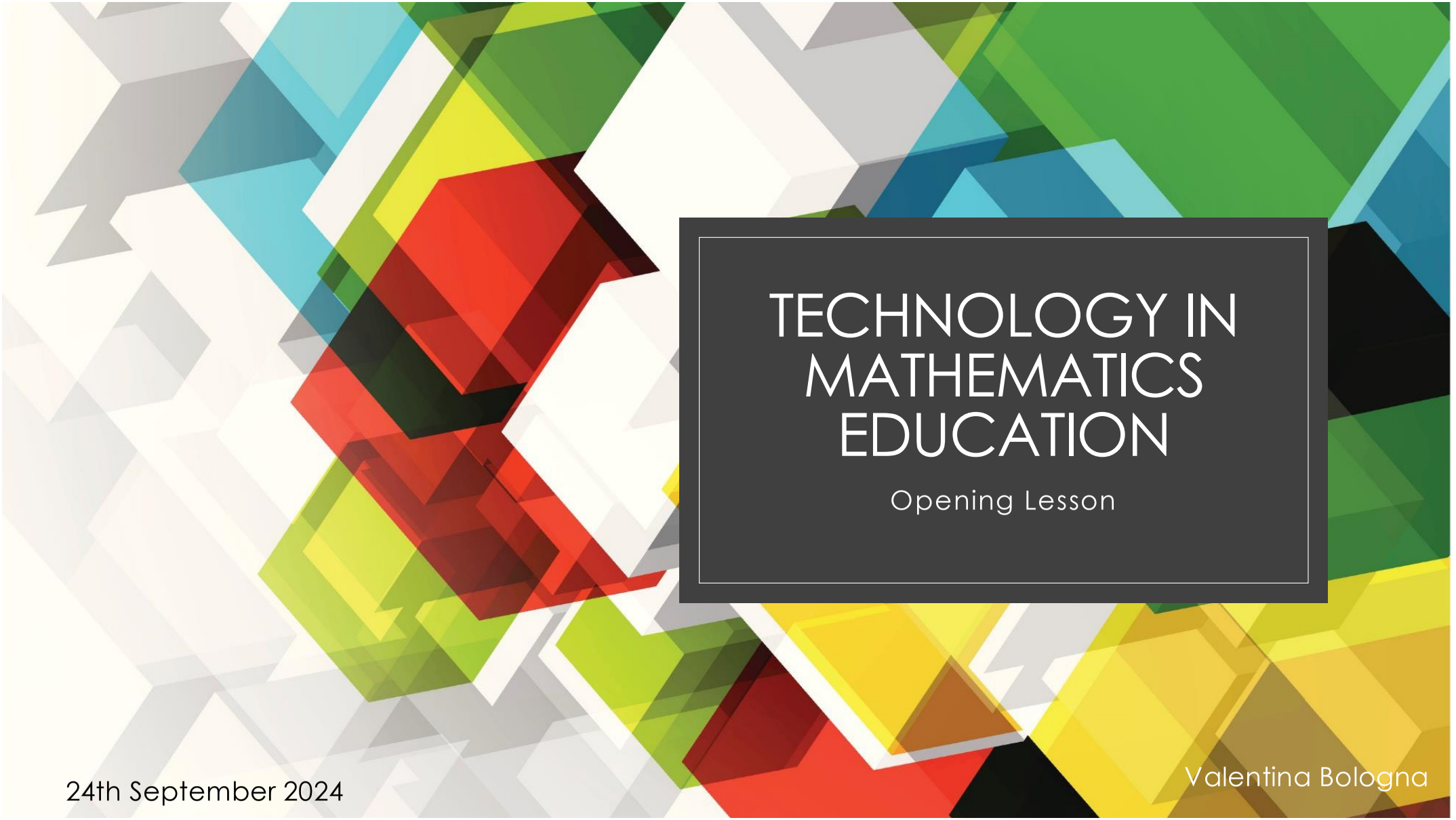
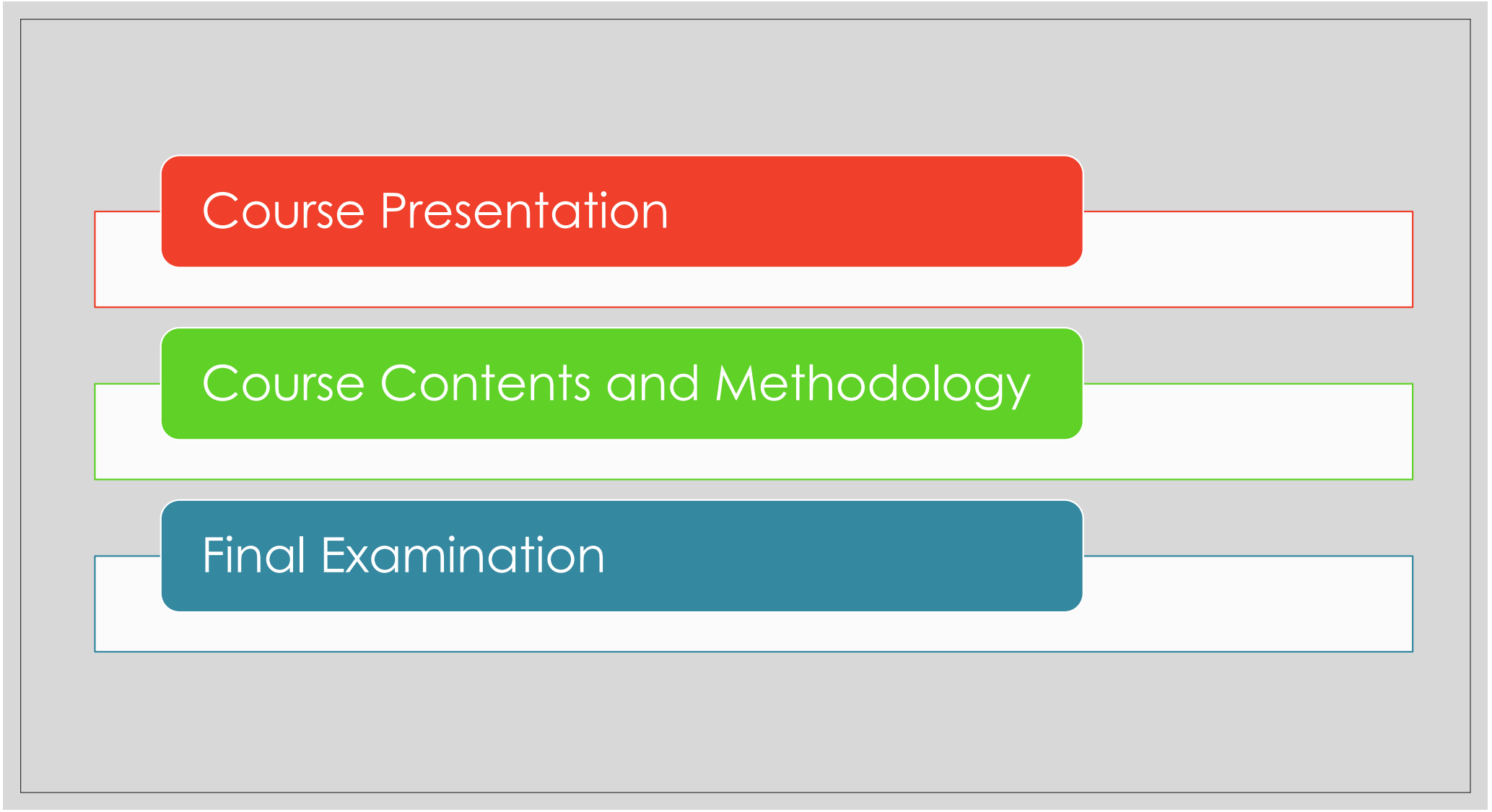

TECHNOLOGY IN MATHEMATICS EDUCATION
Opening Lesson
24th September 2024
Valentina Bologna

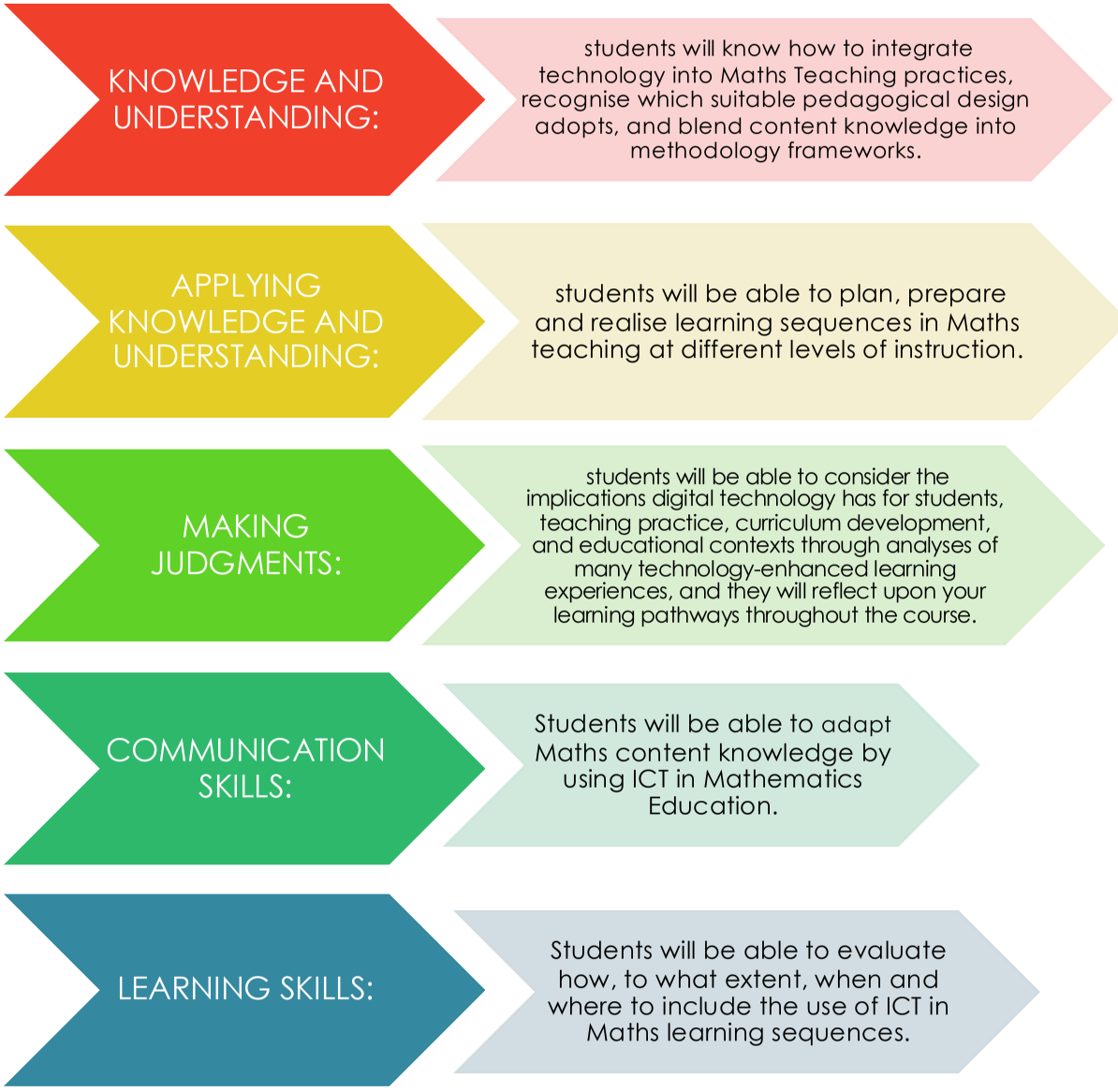
10/2/24


Course Presentation
Course Contents and Methodology
Final Examination

This course aims to address contemporary, international research on how people teach and learn mathematics with digital technologies. Ongoing research on math education, teacher practice, curriculum studies, and pedagogy is uncovering the complexity associated with learning and teaching within dynamic learning environments. Integrating three disciplines – cognitive psychology, computer science, and education – provides a framework to study technology's cognitive and social affordances in mathematics classrooms. This framework can be used to understand several genres of teaching and learning, including knowledge representation, knowledge diffusion, learning-on-demand, and embodiment. They are amplified and augmented with technological advancements, such as dynamic visualisation tools, computer simulations, collaboratories, networked databases, hand-held devices, and virtual reality, with growing importance based on applications' evidence in educational contexts. Therefore, the focus of the course will be developing teaching strategies for technology's integration and implementation through case studies and project-based activities.

# Course Presentation

- Description
- Learning Objectives




# Course Presentation

- Description
- Learning Objectives

Main theoretical frameworks about the research in Technology in Mathematics Education

Hints concerning Pedagogical Content Knowledge in Maths Teaching and Content Knowledge for Maths Teaching: definition of Tasks of Teaching for Integrated ICT in Maths learning

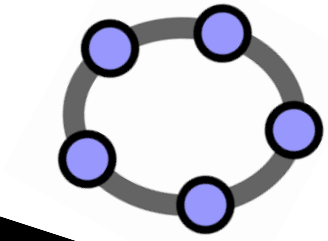
Digital learning environment: Geogebra, Desmos, Excel, Scratch (Maths-coding), PHET-maths, Gizmo-maths, Visual 3D

Project learning activities laboratory-based: exercises and examples on ICT integration (Digital Book, Monitor Touch).

# Course Contents and Methodology

- Description
- Methodology

# Digital learning environments

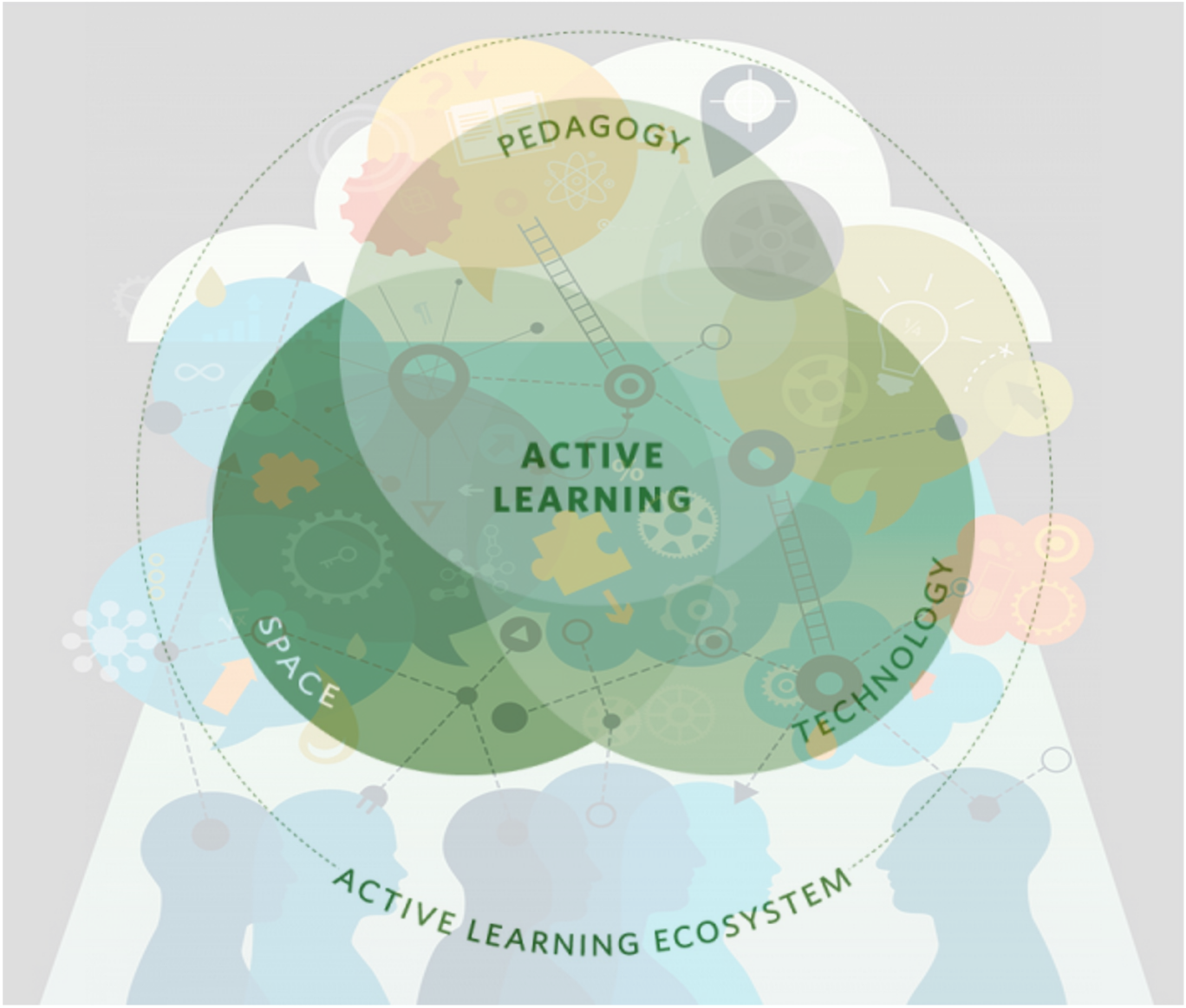







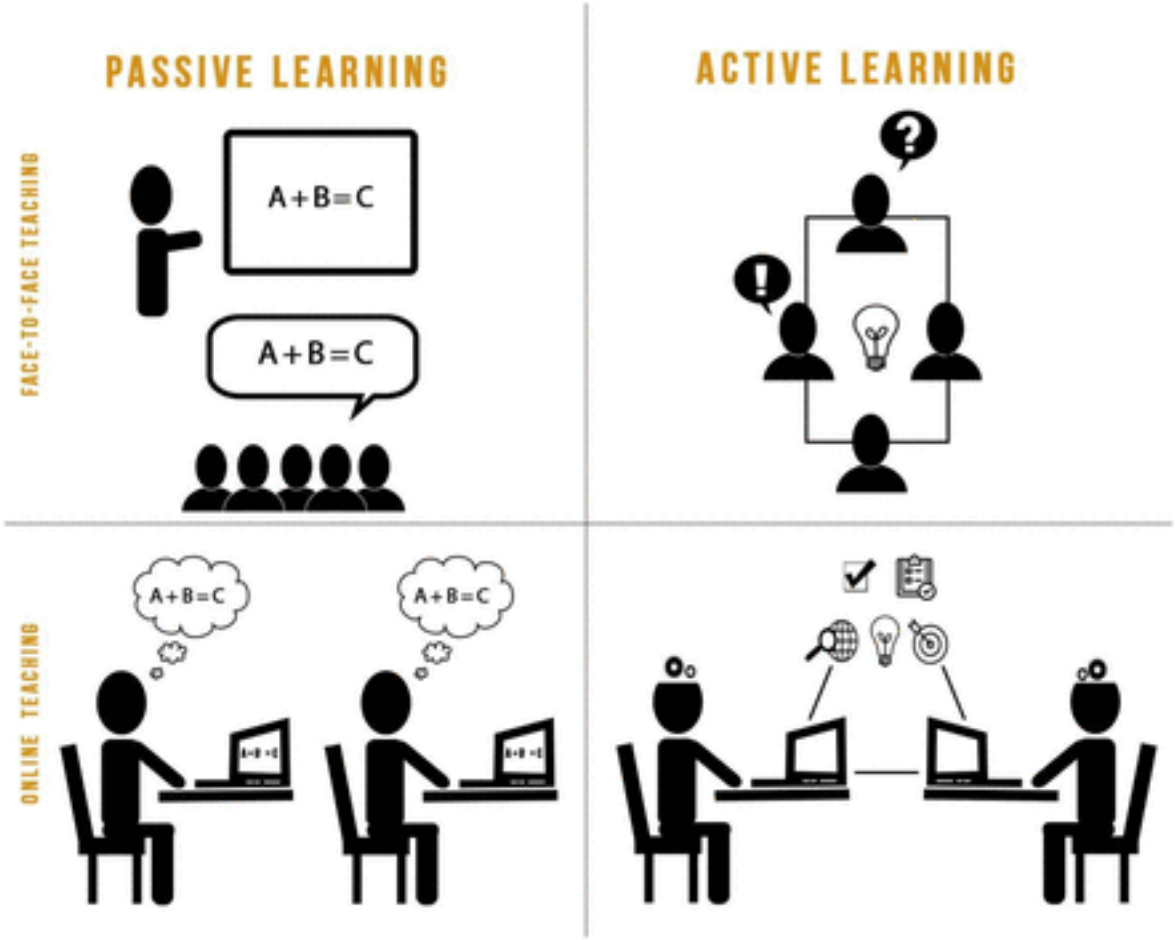
## Course Contents and Methodology

- Description
- Methodology




# Course Contents and Methodology

- Description
- Methodology




https://doi.org/10.1101/2020.12.22.423922

# Course Contents and Methodology

- Description
- Methodology

WORKING GROUPS

# Course Contents and Methodology

- Description
- Methodology

1. Preparation of a Maths learning sequence integrating the use of one learning environment described into the teaching process.

2. Discussion of the course contents (specifically referring to research references).

**Final Examination**