# Computational tools in primary mathematics teaching – opportunities and challenges

## Introduction

- Computational Thinking (CT) is implemented in mathematics classrooms worldwide.
- Along with the inclusion of CT comes different computational tools (e.g., block-based programming languages and educational robotics), because they contribute to teaching concepts related to CT.
- The use of computational tools in primary mathematics education tend to have a narrow focus on technical skills to handle technological environments (Bocconi et al., 2022).

## Aim

- To develop an understanding of how primary teachers use, perceive and value computational tools as a part of their mathematics teaching, and how they think these tools can be supportive of their mathematics teaching practices.
- RQ: What opportunities and challenges do primary teachers encounter when implementing different computational tools in their mathematics teaching?

## Opportunities:

Teachers recognized how the process of solving problems while using the computational tool were like solving mathematical problems.

Block-based programming environments and educational robotics were perceived with opportunities in mathematical teaching.

## Challenges:

Most of the computational tools were used to teach concepts related to CT.

Teachers lack knowledge of how to handle the computational tool – and respectively connect it to mathematics teaching.

The properties in the computational tools hindered a mathematical focus in the classrooms.

BitBot    Apps and games    Scratch jr.    BeeBot    Unplugged    Scratch
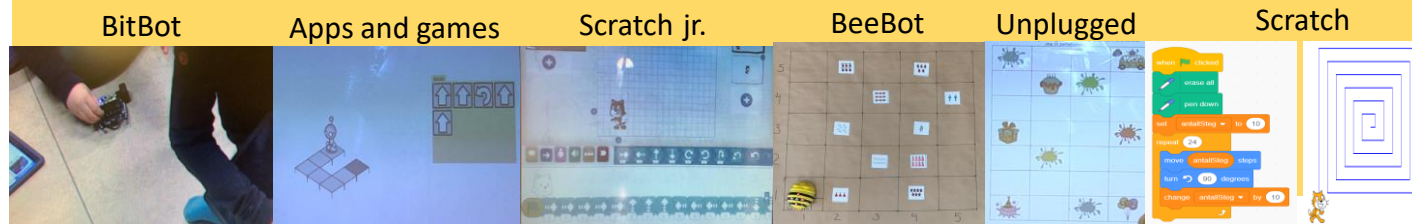
## Conceptual framework

This study are framed in the perspective that knowledge is contextually bounded and mediated through cultural tools, such as signs, symbols – and computational tools. As such, I look deeply into mediated actions, interactions and personal understanding in the context of primary mathematics teaching.

## Methods

- Longitudinal study
- 2 teachers
- Interviews
- Observation
- Interventions

## Results

Computational tools:
Unplugged activities
Block-based programming environments
Educational robotics
Apps and Games
Teacher general perception of the different computational tools

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