Overview

This research project aims to explore the impact of perceptual scaffolding on mathematics problem-solving in elementary students. Perceptual scaffolding involves the use of visual cues in mathematical notation to help students notice structural patterns in expressions, which may disrupt automatic, left-to-right solving strategies. By encouraging students to pause and focus on these patterns, the goal is to enhance their fluency, support flexible problem-solving, and deepen both their procedural and conceptual understanding of mathematical concepts.

The research will focus on determining how, when, and for whom perceptual scaffolding is most effective, with implications for classroom teaching and the design of digital learning tools. The team will collaborate with the ASSISTments platform to design, implement, and test scaffolding features aimed at guiding students to focus on key structural elements in mathematical expressions.

Overall, the project seeks to understand how perceptual scaffolding can enhance math learning, particularly in digital environments, and provide evidence to guide future instructional practices and digital tool development.