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Conceptual scaffolding to check one's procedures.

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Summary: Our tutoring system for fraction addition uses dynamic pictorial representations that reflect student-inputted quantities. However, students had difficulty interpreting the pictorial feedback. Surprisingly, we found that including symbolic numbers with the pictures decreased performance. We hypothesize that students' difficulty may stem from insufficient domain knowledge, or insufficient metacognitive skills to use conceptual knowledge to check their work.

Classification: R40 R20 F40

Keywords: graphical representation; fraction addition; symbolic fractions

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