Factors affecting seventh graders’ cognitive perceptions of patterns involving constructive and deconstructive generalizations.


Summary: This Year Two study from a three Rivera-year longitudinal research project involves eight 7th graders’ ability to develop and justify constructive and deconstructive generalization involving pattern in algebra. Utilizing qualitative methodology, we address the following research questions: What is the nature of students’ constructive generalizations? How stable are their generalizing processes over an academic year? What factors influence their ability to develop and justify constructive and deconstructive formulas? Results indicate that while students’ use of numerical strategies to develop an algebraic generalization remained strong, they lost some ground in being able to interpret their formulas visually. We discuss problems students have in recognizing invariance and the representational forms that are associated with variable-based generalizations.

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