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**Static versus dynamic disposition: the role of GeoGebra in representing polynomial-rational inequalities and exponential-logarithmic functions.**

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Summary: This study investigates prospective secondary mathematics teachers' visual representations of polynomial and rational inequalities, and graphs of exponential and logarithmic functions with GeoGebra Dynamic Software. Five prospective teachers in a university in the United States participated in this research study, which was situated within a framework of productive disposition and visual representations in pre-calculus. The main result was that the role of GeoGebra as a cognitive tool fostered the research participants' productive disposition, despite recurrent mismatches between the algebraic and visualized formalisms. Moreover, participants exhibiting dynamic productive disposition seemed to understand and make better sense of the conceptual underpinnings of the mathematical content they explored in contrast to those embracing static productive disposition.

*Classification:* U73 I23 H33

*Keywords:* representations; visualization; pre-calculus; exponential functions; logarithmic functions; polynomial inequalities; productive disposition; use of technology

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