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Affective pathways and interactive visualization in the context of technological and professional mathematical knowledge.

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Summary: This article reports the findings for a qualitative study on the use of dynamic geometry systems (DGS) and their impact on students' affective pathways. The approach adopted is to view affect through the lens of a representational system. The participants, mathematics teacher trainees, were asked to solve geometric locus exercises using GeoGebra software. The results reveal a number of features that characterize subjects' local and global affect. Future teachers' local affect when using imagery in computerized environments was found to be impacted by the balance between their analytical-algebraic and graphic reasoning and their understanding of the tools at their avail and their use in the instrumental deconstruction of geometric figures. Evidence was observed that linked student teachers' global affect, in turn, to their motivation as defined by their goals and self-concept.

Classification: C20 D40 U70 B50

Keywords: affect; visualization; representational system; dynamic geometry system; technological knowledge; professional mathematical knowledge