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Ng, Oi-Lam; Sinclair, Nathalie

“Area without numbers”: using touchscreen dynamic geometry to reason about shape.

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Summary: In this article, we report on two lessons aimed at introducing junior high school students to the idea of shearing in a touchscreen dynamic geometry environment. By using shearing, we hoped to shift students' attention away from a formula-driven, computational conception of area toward a more geometric one. We found that the students were able to solve several problems involving the comparison of polygons based on verbal and diagrammatic explanations. We describe the features of the touchscreen dynamic geometry technology that supported their learning, as well as the specific role that the teacher played in modeling students' reasoning about area.

Classification: U70 G30 G40

Keywords: dynamic geometry environment; touchscreen; area; geometry

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