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Interpretation and production of diagrams when tackling proof problems in a dynamic geometry environment

Dynamic geometry environments (DGEs) can help enrich students' proof-related activity by, for example, enabling students to access a variety of diagrams when making conjectures and discovering counterexamples. Previous studies regarding the use of DGEs have analysed student activity in terms of dragging modalities, such as how students drag points to transform diagrams. In this presentation, we focus on another aspect, namely students' interpretation of diagrams. Using the distinction between 'object-oriented' interpretation and 'relation-oriented' interpretation from the literature, we analyse data from a task-based interview with a triad of secondary school students (aged 16–17 years old) conducted in our research project addressing task design for facilitating student activity of proofs and refutations. We show that the notion of relation-oriented interpretation might be useful for understanding the way students tackling proof problems use a DGE to produce diagrams, some of which are counterexamples to their conjecture.

Key words: *dynamic geometry environment; geometric diagram; proof; secondary school*
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