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Computer “knowledge” and student’s images of figures: the case of dragging.

Novotná, Jarmila (ed.) et al., Mathematics in the centre. Proceedings of the 30th annual conference of the International Group for the Psychology of Mathematics Education, PME, Prague, Czech Republic, July 16–21, 2006. Vol. 1-5. Prague: Charles University, Faculty of Education. Part 5, 241-248 (2006).

Summary: This report address issues related to the conceptualization of dragging in Dynamic Geometry Environments (DGEs). Specifically we will analyze tension present among three components of the interactive diagram: the figure, the figure image, and the computer’s recognized figure. Users who attempt to predict the outcome of dragging refer to visually apparent components which are not logically recognized by the software, and they use this image to explain their predictions. They do not distinguish their own figure-image from the figure; moreover, they do not distinguish these two from the computer-recognized figure.

Classification: G43 R23 C73

Keywords: dynamic geometry software; dragging; student perception; visualization; conceptual understanding