ZMATH 2002b.01268

Hadas, Nurit; Hershkowitz, Rina; Schwarz, Baruch B.

The role of contradiction and uncertainty in promoting the need to prove in dynamic geometry environments.

Educ. Stud. Math. 44, No. 1-3, 127-150 (2000).

In many geometrical problems, students can feel that the universality of a conjectured attribute of a figure is validated by their action in a dynamic geometry environment. In contrast, students generally do not feel that deductive explanations strengthen their conviction that a geometrical figure has a given attribute. In order to cope with students' conviction based on empirical experience only and to create a need for deductive explanations, we developed a collection of innovative activities intended to cause surprise and uncertainty. In this paper we describe two activities, that led students to contradictions between conjectures and findings. We analyze the conjectures, working methods, and explanations given by the students when faced with the contradictions that arose.

Classification: E50
Keywords: design processes; explanations' theory; conjectures; justification
doi:10.1023/A:1012781005718