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Research on student use of computer simulations ARCHIE PAULSON, KATHERINE PERKINS, WENDY ADAMS, University of Colorado — The Physics Education Technology (PhET) project develops interactive, research-based simulations of physical phenomena that emphasize interactivity, animation, and real world connections. We are seeking a better understanding of how students learn from simulations (sims) in order to inform both sim design and use. We compare differences in student learning and sim investigation when the sim either shows or hides representations of abstract or invisible phenomena such as a magnetic field or electron flow in a current. The study is based on interviews with introductory-level university physics students while using the sims. Results of this study are expected to improve our understanding of how students learn complex physical concepts using sims, and have implications for designing effective sim-based in-class activities, homework and labs.

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