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Learning From Where Students Look While Observing Simulated Physical Phenomena DEDRA DEMAREE, STEPHEN STONEBRAKER, LEI BAO, The Ohio State University — The Physics Education Research (PER) Group at the Ohio State University (OSU) has developed Virtual Reality (VR) programs for teaching introductory physics concepts. Winter 2005, the PER group worked with OSU's cognitive science eye-tracking lab to probe what features students look at while using our VR programs. We see distinct differences in the features students fixate on depending upon whether or not they have formally studied the related physics. Students who first make predictions seem to fixate more on the relevant features of the simulation than those who do not, regardless of their level of education. It is known that students sometimes perform an experiment and report results consistent with their misconceptions but inconsistent with the experimental outcome. We see direct evidence of one student holding onto misconceptions despite fixating frequently on the information needed to understand the correct answer. Future studies using these technologies may prove valuable for tackling difficult questions regarding student learning.

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