

Abstract Submitted
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Research as a guide for adapting curriculum on special relativity to a new population ALEXIS OLSHO, PETER SHAFFER, University of Washington — Student understanding of special relativity has been examined by the Physics Education Group at the University of Washington over a period of many years. A Tutorial sequence on this topic had been developed for use in courses for advanced physics undergraduates. Special relativity, however, is being taught increasingly often in introductory physics courses. Preliminary research indicates that for many students, the current Tutorial curriculum is not sufficient for addressing common difficulties with the concepts of reference frames, observers, and causality. Post-tests on the relativity of simultaneity show only modest gains in student ability to determine the time order of events in different reference frames, and reveal significant gaps in student understanding of these fundamental concepts. The results are informing modifications to the tutorials in order to adapt them to this new population.

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