Abra Brisbin* (brisbia@uwec.edu) and Erica Maranhao do Nascimento. Reading vs. Doing: A Comparison of Methods of Teaching Problem-Solving in Introductory Statistics.

Having students solve practice problems is a well-established technique for teaching problem-solving in math and science. However, some research suggests that having students study worked examples, instead, can be more beneficial to their subsequent performance, possibly due to the reduced cognitive load required. In this study, I compared these two methods of teaching problem-solving in introductory statistics. Six pairs of topics of approximately equal difficulty were chosen from throughout the semester. After an initial demonstration by the instructor, one topic from each pair (chosen randomly) was taught using practice problems; the other was taught by having students read worked examples and answer questions about what they had read. Bayesian and frequentist analyses find weak evidence that student performance is better after reading worked examples. Surprisingly, there is also strong evidence from in-class surveys that students experience greater frustration when reading worked examples. This, combined with the additional class preparation time required to develop the written examples, indicates that worked examples should be a low-priority intervention for instructors wishing to teach problem-solving in statistics. (Received September 19, 2016)