

Title: Assessing Active Learning Strategies in Teaching Equivalence Relations

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Contributed Research Report

Abstract: In this study, students in transition-to-proof courses were introduced to equivalence relations either using a traditional classroom lecture or using small group learning activities. Students' understanding of equivalence relations were then assessed using task-based interviews aimed at assessing concept image, concept definition, as well as concept usage in terms of writing proofs. The students involved in small group activities made stronger connections to partitions and were more successful in writing proofs. In addition, the concrete learning activities gave many participants a strong prototypical example that aided in encapsulating the essential features of an equivalence relation.

Key words: transition to proof, classroom teaching experiment, concept definition