

## Abstract

Equivalence-Based Instruction (EBI) is a method of teaching sets of physically disparate stimuli that uses stimulus equivalence principles (Critchfield & Fienup, 2008). The basic stimulus equivalence literature informs which procedural variants are used in research and clinical practice, but application of these findings requires determining the effect of educational relevance on equivalence class formation. In the current study, Experiment 1 compared the relative difficulty of the stimulus sets to be used in the educationally relevant conditions of Experiment 2, while Experiment 2 examined the effects of stimulus meaningfulness and educational relevance. The Arbitrary group learned nonsense symbols from Steele and Hayes (1991). The meaningful, non-educationally relevant group (Chem) learned stimuli adapted from two Chemistry textbooks. The meaningful, educationally relevant group (DevPsych) learned stimuli adapted from a Psychology textbook. Experiment 2 compared equivalence class formation in Arbitrary, Chem, and DevPsych groups, demonstrating that meaningfulness facilitates equivalence class formation relative to arbitrariness, and that educationally relevant stimuli facilitate equivalence class formation relative to non-educationally relevant stimuli. Experiment 1 demonstrated that the effect of educational relevance found in Experiment 2 was not due to stimulus difficulty alone. Together, findings from the current study show that the effect of educational relevance as a motivating operation may improve learning outcomes in EBI, explaining why procedural variants of EBI shown in the literature to be less effective may still produce high yields when used in applied contexts. This finding calls for a context change in future equivalence research.

*Keywords:* stimulus equivalence, equivalence-based instruction, concept formation, meaningfulness, educational relevance