An Evaluation of the Efficiency of Equivalence-Based Instruction

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Introduction

Equivalence-based instruction (EBI) is a teaching procedure in which teaching a small number of stimulus relations results in the emergence of a large number of untrained relations. Many studies have demonstrated successful applications of EBI with various populations and instructional objectives.

EBI is assumed to be an efficient approach to teaching due to eliminating the need for directly teaching every instructional target, but few studies have directly evaluated its efficiency compared to directly teaching all of the possible relations between stimuli in a set.

Fienup and Critchfield (2011) found that EBI produced similar test performance and took less training to complete than sequential instruction of the target relations. However, they did not show any evidence of overtraining, such as faster reaction times or greater test accuracy, this possibility will be addressed in a second experiment.

Method

Participants: 48 undergraduate students were recruited from a psychology department’s human subjects pool.

Setting and equipment: The experiment was programmed in SuperLab 5.0 and run on a laptop computer in a quiet room.

Experiment.

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Results and Discussion

In Phase 1, there was not a statistically significant difference between EBI and DI groups in trials to criterion, accuracy on the first ABC test, or overall trials (including test and re-training following a failed test) to pass the ABC test.

In Phase 2, there was no difference between groups in the total number of trials to pass the ABCD and ABCDE tests or the total number of trials completed in the entire experiment before passing the ABCDE test. Initial differences in test accuracy, when present (not shown in figures), favored DI.

In summary, there was no evidence that EBI was more efficient than DI, nor that a prior history of EBI facilitated completion of subsequent EBI or DI instruction. Simultaneous instruction may have allowed whichever processes produce stimulus equivalence to exert their effects during training, accelerating the acquisition of each individual relation.

One caveat is that the EBI group in the present study may have been overtrained. Although they did not show any evidence of overtraining, such as faster reaction times or greater test accuracy, this possibility will be addressed in a second experiment.

References