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Jae Un Yoo
Washington University in St. Louis

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Jae Un Yoo

Mentor: Mark A. McDaniel

Category Learning is a process of establishing knowledge of categories that enable learners to identify novel items from the learned categories. While it is a widely studied subject in psychology, research in category learning almost always used pictures to learn categories, and very few studies used actual samples. In order to examine how using actual samples affect category learning, we looked at the learning of rock categories as often taught in college level geology courses. To compare learning with rock images and learning with actual rocks, participants were given a set of rock items from different categories, either in pictures or actual samples, and were later tested on their ability to classify novel items into their corresponding categories. By including both rock images and actual rocks in the classification task, we also examined transfer appropriate processing which suggests that learning and memory performance is best when the type of item used in the encoding process match the type of item used at test. The generalization task had two conditions; immediate test and a 48-hour delay. While cue-dependent theory of memory predicts the actual sample condition to be better at delay because of the greater number of cues (e.g., tactile cue), prototype theory of category learning predicts the picture condition to be better at delay because memory for specific items fades as time passes, but prototypical representation endures delay. Our results may not only be of theoretical interests but also can have implications in how we may optimize category learning instruction.