The Importance of Explanations in Guided Science Activities

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Abstract

This study examined whether embedding explanations in guided activities promotes conceptual change about a physical science concept. One common misconception that children have is that heavy objects fall at a faster rate than light ones. We used a pre-, post-, and delay test design to address this misconception. Forty 5-year-old children were assigned to one of two conditions: a guided play activity that included an explanation about gravity, or the same guided play activity but with no explanation provided. Childrens explanations improved immediately at post-test (p =.001, 95% CI [0.58, 2.33]) and after a one-week delay test (p ¡.001, 95% CI [1.23, 2.95]) when the explanation about gravity was embedded in the activity. There was no improvement at post-test (p =.36) or delay-test (p =.93) when children completed the activity only. This study shows that conceptually rich explanations are an effective pedagogical tool for promoting belief revision in children.