

The role of text in scientific reasoning: Priming misconceptions can facilitate learning

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Abstract: We examined the role of text in learning to replace science misconceptions. Undergraduates' beliefs about where a coin falls when dropped by someone walking were assessed. A common misconception is that a coin will fall straight down, but its forward motion actually continues before it hits the ground. 135 students who expressed this misconception read one of three passages about the issue. The passages differed in whether the misconception was explicitly stated, only implied, or not mentioned at all. Past research shows that calling a misconception to the foreground helps people overcome the misconception (Broughton & Sinatra, 2010). We found a significant difference across conditions, with 86% of those who saw the explicit misconception, 72% of those who saw the implicit reference to the misconception, and 59% of those who saw no reference to the misconception correcting their mistake ($2(2, N = 135) = 8.22, p = .016$).