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SP - (16322) - STOP-MOTION ANIMATION: A COGNITIVE TOOL TO PROMOTE STUDENTS' MECHANISTIC REASONING IN PHYSICS

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Short Abstract

Mechanistic reasoning is a valuable thinking strategy for students when learning science. However, previous studies noted that promoting this reasoning remained challenging. To address this problem, we conducted a one-on-one interview with ten ninth-grade students and asked them to model projectile motion using stop-motion animation (SMA). To investigate how SMA induced the students' mechanistic reasoning, A retrospective thinking-aloud was carried out after they finished constructing the model. The findings showed that all students could exhibit mechanistic reasoning through engaging the nature of SMA construction process: chunking and sequencing. Moreover, abstract reasoning developed during the process.