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Developing a Research Tool to Gauge Student Metacognition[1]
ALISTAIR MCINERNY, ANDREW BOUDREAUX, SEPIDEH RISHAL, KELCI CLARE, Western Washington University — Metacognition refers to the family of thought processes and skills used to evaluate and manage learning. A research and curriculum development project underway at Western Washington University uses introductory physics labs as a context to promote students' abilities to learn and apply metacognitive skills. A required "narrative reflection" has been incorporated as a weekly end-of-lab assignment. The goal of the narrative reflection is to encourage and support student metacognition while generating written artifacts that can be used by researchers to study metacognition in action. We have developed a Reflective Thinking Rubric (RTR) to analyze scanned narrative reflections. The RTR codes student writing for Metacognitive Elements, identifiable steps or aspects of metacognitive thinking at a variety of levels of sophistication. We hope to use the RTR to monitor the effect of weekly reflection on metacognitive ability and to search for correlations between metacognitive ability and conceptual understanding.

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