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Improving Metacognitive Skills

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WRITING COLLABORATIVE INQUIRY FELLOWSHIPS
Closing Write-up 2007-08

Researchers/Department Jim Stewart, Mike Greiner, Cassandra Cook/ Physics

Title: Improving metacognitive skills

Research Question: Can a short, weekly email reflection from students in introductory physics courses be structured to improve students' thinking about their own thinking?

Method: By analyzing student responses we will refine the writing prompt and scoring guidelines so that, starting fall 2008, we can begin a longitudinal study in which we follow individual students through at least two quarters of the introductory physics course.

Key Findings: A revised writing prompt put into place at the beginning of spring quarter appears to have resulted in more students providing the kinds of reflective responses we are seeking. We have devised an analysis template which will be used in the fall to conduct the longitudinal study. A short paper will be presented at the summer AAPT meeting in Edmonton and we plan to write an article for **The Physics Teacher** next year.

Implications for Further Study: As suggested above our efforts over the last year have enabled us to refine our writing prompt and analysis template. With these tools we will be able to conduct an in-depth longitudinal study next year.

Implications for Teaching and Learning: By explicitly asking students to think about their own thinking we can help them to become better learners of physics.