

Abstract Submitted
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What is proportional reasoning, anyway? KERON SUBERO, STEPHEN KANIM, NMSU — There appears to be a correlation between some measures of scientific reasoning skills and gain on conceptual measures of student understanding of introductory physics such as the Force Concept Inventory. At NMSU, we have established a correlation between pretest scores on proportional reasoning tasks and student performance on conceptual post-tests in the introductory lab. Proponents of a Piagetian model of cognitive development would call these scientific reasoning skills ‘operational capacities’ that signal the last transition in human intellectual growth from “Concrete Operational” to “Formal” reasoning. Seen in this light, the correlations described above suggest a cognitive “deficit” associated with development. We are exploring the possibility that proportional reasoning may in fact be a blanket term to describe many smaller elements of skills which students often seem to lack. In this talk, I will present some initial results from our investigation.

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