

CU Science Education Seminar Series

Assessment & Improvement of Problem Solving

Problem solving is one of the most important goals of any science course. However it is notoriously difficult to improve problem solving abilities, and many students never develop competence. A great deal of effort has been devoted to developing heuristics to help students solve problems, but there is little evidence that these methods result in improvements that transfer to new situations. Our work has centered on the development of methods to assess general problem solving skills, and the use of these assessments to probe the effects of different kinds of interventions designed to promote metacognitive activity in students. We find that providing students with learning environments where they must plan, monitor and evaluate their activities results in measurable improvements in problem solving strategies and abilities.

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