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Problem-solving strategies as a measure of longitudinal curricular effects on student learning.

Nicol, Cynthia (ed.) et al., Proceedings of the 38th conference of the International Group for the Psychology of Mathematics Education "Mathematics education at the edge", PME 38 held jointly with the 36th conference of PME-NA, Vancouver, Canada, July 15–20, 2014, Vol. 2. [s. l.]: International Group for the Psychology of Mathematics Education (ISBN 978-0-86491-360-9/set; 978-0-86491-362-3/v.2). 233-240 (2014).

Summary: This study examined the longitudinal effects of a middle school reform mathematics curriculum on students' open-ended problem solving in high school. Using assessment data from a large, longitudinal project, we compared the open-ended problem-solving performance and strategy use of high school students who had used the Connected Mathematics Program (CMP) in middle school with that of students who had used more traditional mathematics curricula. When controlling for sixth-grade state mathematics test performance, high school students who had used CMP in middle school had significantly higher scores on a multipart open-ended problem. In addition, high school students who had used CMP appeared to have greater success algebraically abstracting the relationship in the task.

Classification: D53 D33
Keywords: problem solving; open-ended problems; problem-solving strategies; performance