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Assessing preservice teachers' beliefs about the teaching and learning of mathematics and science.

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Summary: With increased study of teachers' beliefs about science and mathematics teaching in recent years, there is a need for instruments that assess beliefs in both content areas. Moreover, early field experiences in schools and professional development efforts may influence the beliefs that preservice and in-service teachers develop, and instruments for this purpose are limited. This article describes the development and validation of the confidence, commitment, collaboration, and student thinking in mathematics and science (CCCSMS) beliefs scales, a set of 10-item scales. Collectively, these scales measure teachers' self-confidence in doing and teaching science and mathematics, confidence in understanding children's thinking and building models of that thinking, commitment to teaching science and mathematics from a standards-based perspective, and commitment to collaborating with peers. The scales represent an efficient and effective way of assessing beliefs of large groups. Although this article focuses predominantly on development of the scales, results from initial use indicate that there are positive correlations between beliefs related to mathematics and beliefs related to science, but the correlations are low enough to show that many teachers think differently about the two subjects.

Classification: C29 B50

Keywords: field experience programs; preservice teachers; beliefs; professional development; correlation; constructivism; educational change; teacher education

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