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Effective professional development and change in practice: barriers science teachers encounter and implications for reform.

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Summary: This study focused on two middle schools in the central US who participated in collaborative, sustained, whole-school professional development in implementing inquiry as part of National Science Education Standards, or standards-based instructional practices. Participants were involved in their second year of the professional development experience. The research question explored was, "What barriers do science teachers encounter when implementing standards-based instruction while participating in effective professional development experiences?" Qualitative data collected in the form of teacher interviews and classroom observations were utilized and were analyzed using a barrier to reform rubric. Findings indicate that even with effective professional development, science teachers still encounter technical, political, and cultural barriers to implementation. More support is required for professional development efforts to be successful, such as resources and time, as well as administrative buy-in and support. Findings also revealed that even the best intended professional development efforts do not reveal and address existing beliefs for all teachers. Implications for future science education reform stakeholders are discussed. (Contains 4 tables.) (ERIC)

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