

Research Interests

Water education for sustainability curriculum framework

During her sabbatical of Spring 2009, Khourey-Bowers began a collaboration with Dr. Miguel Doria, International Hydrological Programme, UNESCO's Science Sector in Paris, France, on development of "freshwater education curriculum for sustainability" for global distribution. From that time, she has continued to work on the curriculum framework, piloting aspects of the sustainability curriculum into her science methods courses.

Inquiry into teacher beliefs and practices

My line of inquiry explores the myriad of relationships existing across teacher beliefs, teacher knowledge and practices (pedagogy), and the role of teacher content knowledge on student achievement, classroom culture, and inquiry/integration. Some questions that have guided my research in this line include the following. What beliefs do teachers hold about their ability to teach science, or about who can learn science? Can teacher beliefs be changed? Is there a relationship between teacher beliefs, use of constructivist practices, and views of the nature of science? Does engagement in professional development facilitate change in teacher beliefs? How can teacher professionalism be facilitated? Do self-perceptions about teacher professionalism affect a teacher's persistence in using novel strategies?

My focus on teacher practices are those framed by a pedagogy of inquiry, which implies the valuing of a problem-centered or student-centered classroom, and the pedagogy of integration, which attempts to dissolve boundaries and dualisms in the understanding and pursuit of knowledge. Some questions that have guided my research regarding the pedagogy of inquiry and integration include the following. How can acceptance of diversity be modeled without giving way to disciplinary relativism? What are the influences of implementing active or inquiry learning in science education? Can the use of inquiry strategies enhance students' discipline-specific self-efficacy? Can interdisciplinary or integrated approaches to curriculum promote a sense of civic responsibility? What influence does a supportive classroom culture have on student achievement and social competence?