GUEST EDITORIAL

Marginalized Discourses and Pedagogies: Constructively Confronting Science for All

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This Theme Issue of JRST is devoted to examining critical, feminist, and poststructural theories and the implications these have in considering the ideal, “a science education for all children.” These three perspectives are brought together in this issue because they combine a questioning of the foundational canons composing science as a discipline and science education as a practice with an understanding that the intersections of race, class, and gender and other forms of identity labeling frame access to knowledge and power. Our desire to develop such a Theme Issue stems from our own experiences in which we have been involved in researching science teaching and classrooms endeavoring to address the multiple needs of girls and minority students. We have found this work to be both complex and infused with problems and dilemmas which do not lend themselves to simplistic, prescriptive solutions. Indeed, the articles presented in this issue all highlight the complexities of teaching science in a diverse culture and how these complexities suggest rethinking foundational assumptions about pedagogy and the discipline of science.

For example, all of the authors have attempted through their teaching and research to deconstruct the canon of science as well as critique who one must be to partake in that canon. All of the authors have attempted to situate and problematize knowledge construction about science and self within the everyday framework that is marked by discourses of domination, control, opposition, resistance, and power. They show us how the ways in which these discourses emerge from pedagogical encounters and frame teachers, students, and classrooms. By arguing that teachers and students need to combine a critical understanding of science, including its content, culture, and discursive practices, with an understanding of students and educational processes, we can develop a deeper appreciation of how students and teachers must use these understandings as a basis from which to enrich the ideal of a “science for all.”

The studies presented in this issue draw from current debates concerning schooling and the need for liberatory education, the social construction of science and of identity, and systems of
race, class, and gender oppression and domination. These works force us to confront such ques-
tions as:

- How can historically marginalized students become involved in science?
- How can we shape practice and curriculum to address the needs of diverse learners?
- How does reshaping practice and curriculum alter our thinking about the discipline or science itself?

All of the articles in this issue address these questions in ways that enrich our understanding of science education as a political endeavor. These studies also force us to rethink our conceptions of science education, social identity, and the pivotal role of schooling in promoting or hindering a liberatory and democratic education through science. These challenges are also reflected in the writing styles of many of the authors in this issue. Rules of scientific writing, discourse practices, and assumptions about scientific knowledge and knowledge construction are challenged through the use of the narrative, poetry, the first person, columns, and personal context.

In an attempt to avoid the “textual politics of hierarchy” (Luke & Gore, 1992), we have chosen to present the articles in an order that we believe represents this kind of work in shared contexts. In addition, we have invited leading writers in the larger fields of critical, feminist, and poststructural educational theory to contribute provocative comments. It is our hope as editors of this Theme Issue that this arrangement will allow people both familiar and unfamiliar with this discourse to engage it in interesting and critical ways. Our hope is to enlarge the conversation in science education in this manner.

The first two articles, by Hildebrand and Norman, provide overarching theoretical frameworks for critical, feminist, and poststructural theory. The next three articles, by Calabrese Barton, Roth and McGinn, and Osborne, explore critical, feminist, and poststructural theories within the context of teaching children both in and out of school. The final two articles, by Mayberry and Meyer, explore these same theoretical domains within teacher education. Each article, including this editorial, is followed by a response. These responses are meant to draw out the major theoretical points in the articles, to provide further commentary, and to begin what we hope will be an ongoing dialogue about marginalized discourses and pedagogies within the science education community.

References