

MAKKI, NIDAA, Ph.D., August, 2008

TEACHING, LEADERSHIP, AND
CURRICULUM STUDIES

A NATURALISTIC INQUIRY INTO PRESERVICE TEACHERS' EXPERIENCES
WITH SCIENCE, TECHNOLOGY, AND SOCIETY CURRICULAR APPROACHES
(225 pp.)

Director of Dissertation: Wendy Sherman Heckler, Ph.D.

National science education reform documents recognize the goal of teaching science for social responsibility, which is exemplified by the science, technology and society (STS) approaches. However, in practice, science education at the pre-college level remains content-oriented. Teachers are recognized to be the key element of change, but there is a lack of research on how preservice teachers understand STS as a result of their experiences with the approach in their methods courses.

This study takes a Deweyan perspective that focuses on “worthwhile experiences” and interactions in the world, to explore the possibilities that STS curricular approaches offer teachers to implement the national recommendations of “Scientific Literacy for All.” This study explored the experiences of two groups of preservice secondary science teachers, at different points in their teacher preparation programs, with STS, using a naturalistic design informed by social constructivism and Deweyan pragmatism.

The themes that emerged from this study suggest that participants understood STS as an add-on approach rather than a curricular orientation. In addition, they associated STS with controversy, which could make them hesitant in implementing such an approach. Furthermore, for most participants, STS remained situated in the context of

a college classroom, as very few of them attempted to fully implement an STS issue during student teaching. I found that while teachers may value STS, they are not likely to implement it, due to practical considerations rather than stable beliefs.

The study concludes by drawing a contrast between constructivism as a research framework, and a Deweyan perspective with a focus on interaction in the world, and suggesting possible implications of this framework for research and teaching.