Bureau of Educational Research

2008-2009 Seminar Series

and **Grayce Wicall Gauthier Professorship**

Present

Ubiquitous Learning/STEM Education Series

Guiding Complex Thinkers in a Knowledge Society:

What do Children Need to Learn Today for Tomorrow?

Tuesday, January 27, 2009

12:00pm-1:30pm 242 Education

Dr. Nancy Butler Songer

Chair of Educational Studies

Professor of Science Education and Learning Technologies

University of Michigan

Dr. Songer's research expertise is in fostering middle school students' complex reasoning in science, particularly through the use of emerging technologies, and technology-enhanced learning environments. She has been recognized as a National Science Foundation Presidential Faculty Fellow and a Fellow of the American Association for the Advancement of Science.

In a globally competitive age, it is increasingly important that ***all students learn how to think critically about topics in science and mathematics***. Despite a strong emphasis on testing and accountability, test designers agree that most standardized tests are insufficient for evaluating complex thinking.

This presentation highlights 10 years of research developing and evaluating curricular units, associated learning technologies, and assessments designed to foster and evaluate complex reasoning among 8-12 year old students. Using our empirical results, this presentation will share insights on addressing these questions:

- What kinds of complex reasoning in science and mathematics do children need to be **fluent thinkers in a knowledge society**?
- What are the **distinctive characteristics of learning resources** (curricular activities, learning technologies) that emphasize such essential knowledge?
- What kinds of tests do we need that complement existing standardized tests and that are designed to **measure complex thinking**?
- If we initiate programs fostering complex thinking for a knowledge society, what kinds of **achievement and learning outcomes** are realized?

12pm-1pm Presentation with Q&A followed by a Round Table from 1-1:30pm

College of Education
University of Illinois at Urbana-Champaign

Bureau of Educational Research, Room 38
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