

Instructional Resources for the Teaching of Secondary School Science - Application of Research Findings to the Teaching of Inquiry-Based Science

Norman Herr. Proceedings of the Eighth Annual Hawaii International Conference on Education. January 7-10, Honolulu Hawaii

Abstract

This session provides resources for instructing pre-service and in-service teachers in methods of teaching inquiry-based science. Participants will receive a complimentary copy of the presenter's most recent book, "*The Sourcebook for Teaching Science* (584 pages)". Participants will learn how to use the curricular resources in the book and companion website when training pre-service and in-service secondary school science teachers.

The Sourcebook for Teaching Science – Strategies, Activities, and Instructional Resources, provides new and experienced teachers with a wealth of teaching strategies, resources, lessons, activities, and ideas to enhance the teaching and learning of physics, chemistry, biology, and the earth and space sciences. Resources are based on learning theories and pedagogical research, and are designed to stimulate student interest and involvement in science. As students engage in the activities of this book, they develop higher order reasoning skills, and a deeper understanding of scientific concepts and their relevance to their everyday life.

The Sourcebook for Teaching Science is designed to complement any secondary school science curriculum. Science teachers will find ready-to-use demonstrations, experiments, illustrations, games, puzzles, analogies, lessons, activities, and strategies, as well as explanations of how to adapt these for English Language Learners and diverse student populations. All topics are accompanied by extensive background material, providing teachers with the scientific, organizational, and pedagogical principles necessary for successful classroom implementation.

The Sourcebook for Teaching Science complements *Hands-On Physics Activities with Real-Life Applications*, and *Hands-On Chemistry Activities with Real-Life Applications*, both co-authored by the presenter. The activities in all three resources address the National Science Education Standards and state science content standards.

Technological resources for teaching and learning science are incorporated throughout *The Sourcebook for Teaching Science*, and teachers who desire additional resources will find them on the complimentary companion website, sciencesourcebook.com. The directory structure of the website mirrors the table of contents of the *Sourcebook for Teaching Science*, giving teachers immediate access to numerous interactive resources and downloadable files. Participants in this workshop will learn how to use *The Sourcebook for Teaching Science* and its companion website to train pre-service and in-service science teachers in inquiry-based science instruction.

Reference list:

Herr, Norman (2008). The Sourcebook for Teaching Science – Strategies, Activities, and Instructional Resources. San Francisco. John Wiley / Jossey Bass. 584 pages. (ISBN 978-0-7879-7298-1)

Herr, N. and J. Cunningham (1999). Hands-On Chemistry Activities with Real-Life Applications. West Nyack, New York, The Center for Applied Research in Education (Prentice-Hall). 638 pages. (ISBN 0-87628-262-1). (

Cunningham, J. and N. Herr (1994). Hands-On Physics Activities with Real-Life Applications. West Nyack, New York, The Center for Applied Research in Education (Simon & Schuster), 670 pages. (ISBN 0-87628-845-X).