

The Inquiry Page:

Collaborative Technology into Practice

Sharon L. Comstock (scomstoc@uiuc.edu), Bertram C. Bruce (chip@uiuc.edu)
University of Illinois at Urbana-Champaign
Delwyn Harnisch (harnish@unl.edu) University of Nebraska at Lincoln

Abstract: This session trains teachers and learners in the Inquiry Page, a free, web-based, knowledge-building tool that facilitates and fosters real-world application of inquiry-based learning across subject areas (www.inquiry.uiuc.edu). By creating "Inquiry Units", teachers and learners collaboratively engage in the inquiry path, building new knowledge as well as a resource for other teachers and learners. By offering a flexible structure, a-synchronous community-building occurs with teachers/learners being able to draw upon and share their own applications of inquiry-based teaching. The Inquiry Page is collaborating with the NSF's EdGrid GK-12 Fellows Program*, where scientist-fellows and K-12 teachers partner to integrate the use of computer-based modeling, scientific visualization, and informatics in science and mathematics education. GK-12 is one example where the Inquiry Page becomes a "portal", facilitating communication, inquiry-based teaching, and professional development.

**The EdGrid GK-12 Fellowship Program supports annual teaching fellowships for graduate student scientists from the University of Illinois, Urbana-Champaign and is administered by the National Center for Supercomputing Applications.*

The Inquiry Page:

The Inquiry Page is a free, web-based, dynamic, and flexible tool that supports teaching and learning in diverse educational environments. In this interactive session we will introduce users to The Inquiry Page and allow learners to create a "sample unit" of their own for them to build on at a later point. The goal is to bridge the gap between education pedagogy and real-world applications in the classroom, creating a framework for teachers/learners to collaborate.

The Inquiry Page (www.inquiry.uiuc.edu) is a five-year-old project created initially as a supportive tool for teacher development by Dr. Bertram Bruce at the University of Illinois, Urbana Champaign. It has since evolved into a web-based tool and collaboratory to facilitate inquiry-based learning and teaching within much broader contexts, spanning content areas and learning communities. It is supported by the Graduate School of Library and Information Science (GSLIS).

Based on the theories of John Dewey and that all learning begins with the learner, the cycle employed in the Inquiry Page presents an idealized model for inquiry: ask, investigate, create, discuss, and reflect. This cycle should not constrain our account of inquiry, but rather serve as a reminder of the range of activities that might be involved. The danger in any description of a process is that some may infer that the description is the only, or the ideal, form of that process; or, that aspects of the process are steps to go through in some linear fashion. The intention of the Inquiry Page is not to specify the only, or the ideal process. Nor is it to identify rigid steps to follow in doing inquiry. Instead, the Inquiry Page offers an organized way some of the important aspects of inquiry may be supported in a successful learning environment. Inquiry often leads to new ideas, results, theories, questions, etc. that can be communicated with others. This

communication is central to the whole inquiry process and our classroom environments ought to have a place for it.

Inquiry Page in the GK-12 Fellows Program:

By relying on 2001-2002 evaluation data of the Inquiry Page's use in the GK-12 project, we can demonstrate some of its practical uses. Teacher and scientist/fellow teams employed the Inquiry Page as (1) a lesson planning tool for teachers, including tutorials, resources, and personal reflections in their roles as fellows/teachers in the classroom; (2) an archive for their own work and reflections on their particular GK-12 site, including site-specific resources; and (3) as a way to more deeply understand inquiry-based learning and engage in a "co-learner" relationship. The model identified in 2001-2002 evaluation data as most successful was one in which the teacher and fellow worked collaboratively in teaching/learning. The Inquiry Page facilitated this type of relationship in and out of the classroom; with units serving as new points of communication with educators both within and outside of the individual districts/sites. The units created serve as artifacts to be shared with colleagues, administrators, and the larger education community. For example, the Inquiry Page has been used as a presentation tool with the units being demonstrated at NSTE, NABT, TeachIT, AAAS, and various district meetings. Perhaps most interesting is the Inquiry Page's role in introducing inquiry-based learning to the fellow/scientists and giving a "name" to what teachers were already doing or wanted to do in the classroom. Although all had heard the term, and had an intuitive sense of what it meant, it was during the process of creating units that points of recognition and understanding of real-world application occurred. Dewey's theories of learning by doing—and sharing that in a community—become concrete and applied by building units in a collaborative environment. Essential features of classroom inquiry in the sciences as defined by the National Research Council are identifiable, where the scientist fellow/teacher/students are generating new knowledge and content mastery.

References:

Bruce, B.C. (2001). The Inquiry Page: A collaboratory for curricular innovation. *Learning Technology*, 3(1).

Comstock, S. L., Bruce, B. C., Harnisch, D., & Mehra, B. (2002). Fostering inquiry-based learning in technology-rich learning environments: The Inquiry Page in the GK-12 Fellows Program. In *Proceedings of ED-MEDIA: World Conference on Educational Multimedia, Hypermedia and Telecommunications* (p. 340). Norfolk, VA: Association for the Advancement of Computing in Education.

Dewey, J. (1956). *The child and the curriculum & The school and society*. Chicago: University of Chicago Press (Original works published 1902 and 1915).

Mehra, B., Bruce, B.C., Harnisch, D., Comstock, S. & Takahashi, A. Complexities in Development of Educational Collaboratories as a Socio-Technical System: A Situated Study of the GK-12 EdGrid Graduate Teaching Fellowship Program. Proceedings of The 6th World Multi-Conference on *SYSTEMICS CYBERNETICS AND INFORMATICS SCI 2002*, Orlando, Florida, (July 14-18, 2002).

Acknowledgements:

The authors are grateful to the National Science Foundation for support of the GK-12 EdGrid Graduate Teaching Fellowship Program (Grant/Contract # 0086455). We also wish to thank the mentors, fellows, teachers, students, coordinators and staff involved in the project. These include: Dr. Eric Jakobsson (PI), Dr. Richard Braatz (co-PI), Dr. Deanna Raineri, Lisa Bievenue, Dr. Umesh Thakkar, Dr. Jerry Uhl, Dr. Ken

Travers, Rebecca Kruse, Steven Moore, Keren Moses, John Sabo, Smitha Sririam, Dustin Lindley, Shelley Barker, Bob Fredres, Kathleen Gabric, Jim Dildine, Sean Dannenfeldt, Paul Lock, Lisa Page, Greg Hill, and Jim Polzin.