

FIRST II

Faculty Institutes for Reforming Science Teaching

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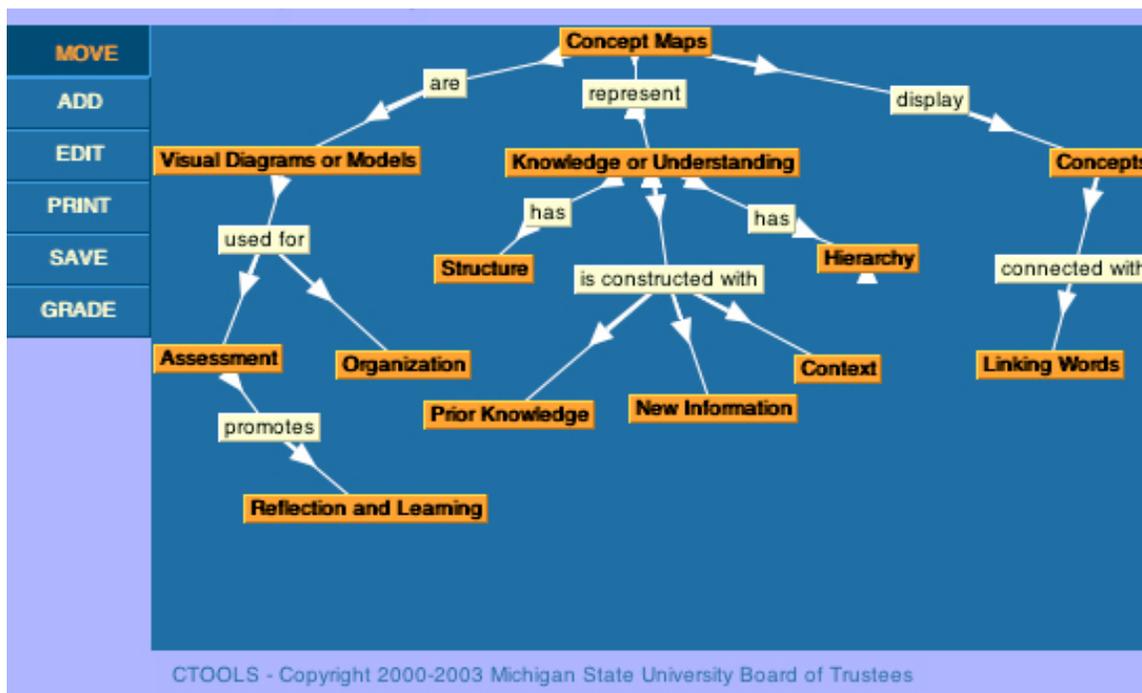
THE FIRST II NEWSLETTER

Participants in the FIRST II project are distributed across the country and seldom meet in person. The goal of this newsletter is to provide an additional forum to connect “FIRSTers”, and highlight some of the noteworthy activities of FIRST II teams. We plan to produce the newsletter twice a year and welcome your submissions. Please let us know if you have published something about teaching and learning, have read a thoughtful paper worth distributing, or have an innovative teaching or assessment idea. Ideas, innovations, and products to share with others are valued.

WEB-BASED CONCEPT-MAPPING TOOL

C-TOOLS, a web-based concept-mapping tool, is now available for on-line use. C-TOOLS features a java applet surrounded by an online usage environment of web pages. Students set up their own accounts that allow them to create, save and print or e-mail their concept maps. Students enter concept words and linking words (their own or from lists you supply) and interactively arrange the words and connecting lines. The concept map below was created using C-TOOLS.

Features in C-TOOLS currently under development include the ability to specify map information, such as title and classroom/assignment data. “Robograder”, which is designed to provide students with immediate, interactive feedback as to the correct or incorrect portions of their concept maps, is in the prototype stage. (Continued on page 2).



C-TOOLS (continued)

Currently, the project programmer can enter data that identifies correct propositions among specific concepts and linking words. Eventually, the program will “absorb” the manual grading performed by an instructor and add them to the database, so the program will “learn” from you how to robograde your students work. Integration with course management software such as Blackboard and Angel is also in the planning stages.

Sue Bagley, a FIRST II institutional team member at Michigan Technological University, used C-TOOLS extensively with her students in Microbiology in the fall semester. Sue’s students created concept maps representing microbial metabolism. These maps helped her diagnose student misconceptions and to assess level of understanding after instruction.

Sue reports, “My students and I enjoyed

test-driving C-TOOLS this fall. Use of concept maps helped the students ‘arrange’ their thinking on some complex topics. They really pushed C-TOOLS to its limits (and, we later found out, somewhat beyond the limits). The students had several excellent suggestions for improvements to the program and were gratified to learn that these were being implemented. C-TOOLS is now a robust program that is very user-friendly. I am looking forward to using the newer, even more improved version of C-TOOLS in my Spring Semester course with its various functions fully operational.”

The C-TOOLS web-site includes a basic tutorial on concept-mapping. Help and trouble-shooting are available directly from the project’s technician, Scott Harrison. You can access C-TOOLS and the user manual from the web resources page of the FIRST II website (www.first2.org) or directly at (ctools.msu.edu).

“C-Tools is now a robust program that is very user-friendly.”



Sue Bagley,
Michigan Technological
University

New Resources

The National Research Council’s report on “*Evaluating and Improving Undergraduate Teaching in Science, Technology, Engineering, and Mathematics*” has been published. It offers an overview and guidelines for the evaluation of individual teaching practices and the effectiveness of academic programs. Read it on line at: <http://books.nap.edu/books/0309072778/html/index.html> or purchase it from <http://www.nap.edu>.

The October 2002 issue of Evolution contained an interesting article about students’ misconceptions about evolution and ways to address them. Citation: Alters, B.J. and C.E. Nelson 2002. *Perspective: Teaching Evolution in Higher Education*. Vol. 56 (10): 1891-1901. The pdf is available from the FIRST II website under Resources/Literature.

FIRST II Team Activities

January 10 – 12

LUMCON Workshop

The first meeting of the LUMCON team brought together institutional teams from across Louisiana. A field trip to the salt marsh initiated a weekend-long discussion about active, inquiry-based teaching and learning. The Cajun gumbo and crawfish boil were second to none. LUMCON now has a listserve. To subscribe, send an email to lafirst@lumcon.edu with the word "subscribe" (no quotes) in the subject line.

February 7 – 9

University of Akron Workshop

The first Akron workshop will acquainted team members with each other and introduced FIRST II. A field-based inquiry exercise at the Bath Nature Preserve was conducted, with follow up activities to model classroom inquiry. Each team generated an action plan to guide their activities at their home institution. Despite the rumors to the contrary, they did not give away free salamanders to each team member.

February 8

University of Washington Workshop

Dr. Jon Herron from the Zoology Department at UW discussed the use of case studies in a class on evolution. Faculty from the Physics Education Group at UW presented an inquiry exercise they use in their classes, and discussed what they have learned about how students learn physics.

February 8 – 9

Hancock Workshop – Murray State University

During their third workshop, IT members reported on new approaches, activities, and assessments they have developed and implemented in their courses. Work continued on assessment of student learning and approaches to teaching using technology were practiced.

Spring 2003

San Diego Workshop

Each institutional team is presenting information on their course development with a special emphasis on assessment data they are collecting.

Baltimore-Washington Urban FIRST Workshop

Plans are underway for an introductory meeting of the Institutional Teams. George Middendorf will be sending details soon.

Archbold Workshop

Amanda McConney has joined the Archbold Field Station Team and is currently planning the spring 2003 workshop for the Archbold ITs.

Agendas for the FIRST II workshops are posted on the internal section of the web page.

Website Updates

Participant Demographics

Check out the “About Us” button on the website for participant demographic information (based on 35% survey completion). FIRST-ers are categorized by institution, faculty position, years teaching experience, and gender.

Web Resources

The web resources page of the website is evolving. Our goal is to find and post useful resources, both practical and scholarly in nature, for undergraduate science education. Your contributions to the site are

most welcome. Please send the URL to us for review and tell us why this information is useful to you and we’ll post it.

Calendar

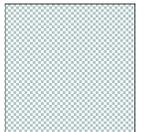
The FIRST II project calendar is on the internal login page and is a tool for all participants to stay informed about upcoming events; it also serves as a project record. We would also like to feature any educationally oriented workshops/presentations you are involved with in this calendar so send us that information.



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