Web-Assisted Learning in Chemistry

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Abstract: The ACS Division of Chemical Education sponsored a symposium on web-assisted learning in chemistry at its 221st national meeting in San Diego, CA April 1–5. The symposium included 25 papers delivered in three sessions over two days.

The Internet has transformed the college classroom from a room where professors lecture to their students, using blackboard and chalk, to one where interactive learning experiences take place and communication is through high-speed computers and Java script. Innovative uses of the Web in college-level chemistry classes was the focus of the Web-Assisted Learning in Chemistry symposium sponsored by the Chemical Education Division at the 221st National Meeting of the American Chemical Society. The symposium included 25 papers, divided into three sessions held over two days. The sessions were subtitled: (1) Virtual Laboratory Experiments with the Web, (2) Nuts & Bolts: How To Get Started, and (3) Web-Based Tutoring and Testing. All of the papers were well attended with a peak attendance of 80 participants.

The Web is used to supplement traditional classroom activities in general, organic and physical chemistry lectures, and has been adapted to include "virtual" laboratory experiments. Chemistry students in Web-assisted classes do better than their counterparts in traditionally taught classes because of the asynchronous nature of the Web and the lack of time constraints on learning remedial material. Clever animations are used to illustrate abstract concepts for students, providing visual images that help the learning process. New software developments make online testing possible, and these programs are in used in chemistry lecture classes as well as in laboratories. Java-script programs are used at Northern Arizona University to help students with laboratory calculations, and physical chemistry students are using the Web to exchange information when working on open-ended assignments.

One of the biggest obstacles to using Web-assisted learning in the chemistry classroom is knowing how to start; therefore, one session of the Web-Assisted Learning in Chemistry symposium was devoted to the fundamentals of Web-page design. This session included a paper on the Unix operating system and described free programs available for chemists based on Unix. The following papers are representative of the information presented at the symposium on Web-Assisted Learning in Chemistry, and illustrate the state of Web-assisted learning in chemistry in 2001.

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