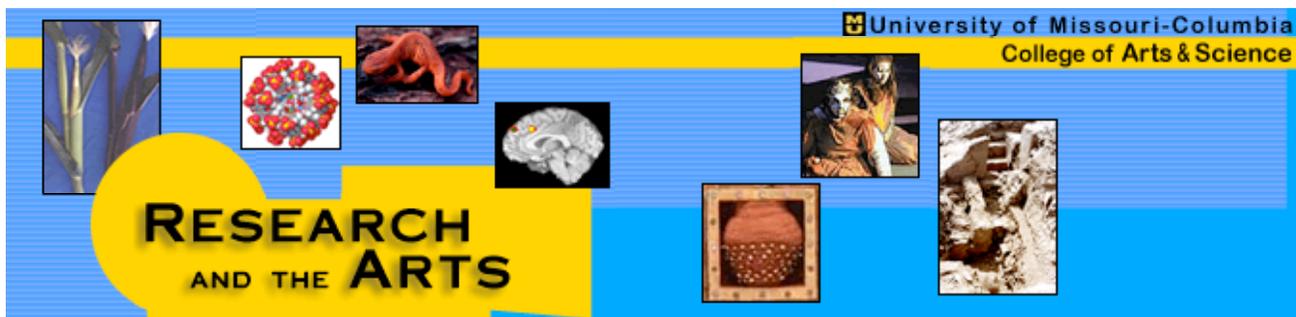


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New teaching techniques test students' brains

Study shows innovative program evokes strong positive and negative feedback

Students reading newspapers rather than textbooks; Professors teaching from industry Web sites rather than classroom wall charts. These are part of a new approach to teaching chemistry at the University of Missouri-Columbia. **Chemistry is in the News (CIITN)** is an innovative teaching program that relates chemistry to current events in the real world.



Fuel cells and AIDS drugs have something in common: chemistry is at their core. It is important for students to understand that what they are being taught in the classroom actually relates to the real world. The lessons in the CIITN program are unlike any other. Most of the work is done online using major newspapers, journal articles and information from company Web sites where certain products are actually manufactured as sources. Students work in small groups in order to stimulate thought rather than merely soaking in seemingly meaningless facts from a textbook that will be forgotten immediately following a test, said **Rainer Glaser**, professor of **Chemistry**.

"Years ago, everyone sitting in the classroom wanted to be a scientist," Glaser said. "These days, fewer than 10 percent of the students in a chemistry classroom are actually aiming to be chemists. Yet we are still teaching as though we have a classroom full of people aspiring to be chemists and that just won't work anymore. Why are classes being structured for only a small percentage of the students?"

Glaser said CIITN is the answer; however, not everyone likes it. In fact, a study to be published in the April issue of the [Journal of Chemical Education](#) takes a look at students' attitudes toward this new way of thinking. Those who went into the class with positive feelings about it, ended the semester with even higher positive feelings. However, students who initially felt negative about the class did not feel any better at the end of the semester.

"It is hard to change something that has been in place for so many years," Glaser said. "Students who do not like the process are used to soaking up facts from a textbook, regurgitating those facts on a test and really not learning anything in the process. In CIITN we are asking a lot more of them."

In the end, even students with negative feelings about having their brains put to the test come around. Glaser said he gets many letters from students months and even years after they take the CIITN course thanking him for making them work for knowledge. One such letter states, "I have never worked as hard and learned as much as the semester when I took your class. You pushed students to expand their mental limitations and invited them to grow."

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