

Chem 100: Elements of Chemistry

Improving science information literacy among non-science majors

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In developing activities for Chem100 (Elements of Chemistry) I had three goals, as outlined in my proposal. I achieved all three of these goals, as judged by course evaluations and student grades on assignments. Below I briefly list each goal, with a short discussion on how the objectives were completed and evaluated.

1. To interest students in science - To assess this goal, I have relied on course evaluations, particularly student responses to these items:
 - "gained a broader understanding and appreciation of intellectual-cultural activity (music, science, literature, etc.)"
 - "learned how professionals in this field go about the process of gaining new knowledge"In both cases, all students responded with average to excellent ratings.
2. To show the students where to access scientific information - In the course students were encouraged to look outside of the course materials for additional information about the topics we studied. This was done through various assignments, all of which are attached to this report.
 - **Books** - Each student was assigned a popular science book on which they wrote an essay and collaborated with classmates on an oral presentation.
 - **Newspapers and magazines** - A library activity was developed with Katie Duke in which students were given a newspaper article to read and questions to answer about it. Assignment #4 required the students to find their own article and answer similar questions. In addition, students were given extra credit for finding news articles about chemistry and bringing them into the class.
 - **Online** - Assignments #1 and #2 required students to go online to find answers to specific questions about the chemical composition of everyday materials and the lives and research of Nobel laureates. The library activity and Assignment #4 taught the students search strategies for finding research articles.
 - **Museums** - For Assignment #3 the students visited a museum and answered questions about what they saw.

Average grades on all assignments were high, demonstrating that the students could read and understand the scientific material that they were given and that they found on their own.

3. To enable critical thought about scientific information - Two activities encouraged the students to think about the validity of the scientific information they received.
 - For a library assignment developed by Katie Duke, students were given a short article from the *Scranton Times* and had to find the longer newspaper article on which it was based. The student then compared the two to decide if the short article did a good job representing the science presented in the longer article.
 - The other library activity and Assignment #4 required students to find an original research article on which a newspaper article was based. Students had to read the original research and determine if the newspaper writer accurately represented the research.

Again, average grades on these activities were high, demonstrating that students learned how to evaluate the scientific information they read.

This course will not be taught in the fall 2005 semester, but when it is offered again I plan to share these results with the instructor.