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Using the learning cycle to teach ecological concepts in Introduction to Environmental Studies

The learning cycle is a teaching method that is generated from cognitive research and is based on the premise that learning is more effective when students are asked to reconstruct their understanding through interactive exercises. The method involves several phases: (1) engaging students with a question or activity that probes their prior knowledge and focuses their thinking; (2) encouraging students to explore their ideas and concepts with the instructor and other students; and (3) explaining the concepts and clarifying common misconceptions, which are especially prevalent in non-majors courses. In 2006, I revised my introductory course in Environmental Studies (traditionally a lecture course) to integrate aspects of the learning cycle, with particular focus on group work and interactive exercises. Students were asked to complete group activities based on their readings and to apply their knowledge to address current topics in Environmental Studies. Following group activities, time was allotted for peer-teaching and discussion of the activities. Course evaluations based on student questionnaires improved in virtually every area when compared to those from 2004, with statistically significant improvements in students' perception of my ability to facilitate comprehension. Overall satisfaction with the course was positively correlated with perceived effort by the students. The Science and Math Values Inventory (SaM-VI) was administered to the students before and after completing the course to assess the affect of the course on their perception of science. These results suggest that continued effort in engaging students more actively in the classroom will enhance learning as well as their appreciation for ecological concepts.