

LEARNING ABOUT PRAIRIE RESTORATION ECOLOGY IN LARGE INTRODUCTORY BIOLOGY COURSES

*BRUNO BORSARI, Department of Biology, Winona State University, Winona, MN 55987, USA.

KEN GRAETZ, E-Learning Center, Winona State University, Winona, MN 55987, USA.

JOAN BERNARD, E-Learning Center, Winona State University, Winona, MN 55987, USA.

Abstract: The increasing interest in prairie restoration presents opportunities to develop new didactic methodologies that impart knowledge in basic ecology. For the present study, students in large introductory biology courses for non-majors were exposed to prairie restoration ecology principles by either using a prairie case during one semester, or by using the typical lecture format, for different classes in alternating semesters. A classroom response system (CPS^{RF}) was used in both situations to engage students in the learning process and to assess their learning. The authors measured students' learning by presenting a set of questions on the day of the case, or lecture (pre-test) and again, at the onset of the following class (post-test). Test results were obtained from 291 students over the course of three semesters, 180 students in the case condition and 111 in the lecture condition. Independent-samples and one-sample t-tests revealed a significant difference between the case and lecture conditions. Students in the case condition improved significantly from pre-test to post-test, while test scores declined for students in the lecture condition. These results suggest that the case-based method of instruction, combined with clicker technology enhances students' learning in prairie ecology when used instead of lecturing. Additional research may reveal other applications and practices for integrating case studies and individual timely assessment to enhance learning.