Cultivating Critical Thinking Skills Among Conservation Biology Students

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To become effective practitioners, students of biodiversity conservation need to develop sophisticated understandings of conservation problems and problem-solving approaches, which derive from advanced critical thinking skills. Here, we present results of an experimental study aimed at fostering students’ critical thinking skills and comprehension of complex conservation issues. Faculty from six institutions, led by investigators from the Center for Biodiversity and Conservation, designed a multi-year experiment that applied novel instructional and assessment materials under two different instruction modalities, individual reflection vs. intensive classroom discussion. We found that use of the instructional materials improved student performance in two independent assessments of critical thinking, while also showing gains in content knowledge. In particular, students improved in their abilities to select and use evidence in constructing arguments, and in understanding the influence of context and assumptions on conclusions drawn from evidence. However, we found no change in student self-confidence in their critical thinking abilities. We are currently assessing whether the intensity of the teaching intervention influenced student gains in critical thinking. Our results show that critical thinking skills can be improved within a single course through strategic instructional techniques across a wide range of institutions and classroom settings.

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