



Integrating the Disciplines: Educating Citizens for Our Democracy

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Perspective

A working knowledge of science is critical to the future success of our democracy. However, science offers only one lens to view society's complex, multidisciplinary problems. To become positive change agents, our graduates must value and integrate all disciplines. And we must show them how.

Method

Wofford's learning communities (LCs), initially developed for non-science majors, provide an excellent model for disciplinary integration for all students.

- A common cohort of first year students is enrolled in two introductory courses, one in science and the other in humanities.
- Two professors integrate their subject matter around a unifying theme.
- Two upperclassmen serve as preceptors, partnering with the professors to plan and implement the LC and provide peer mentoring.



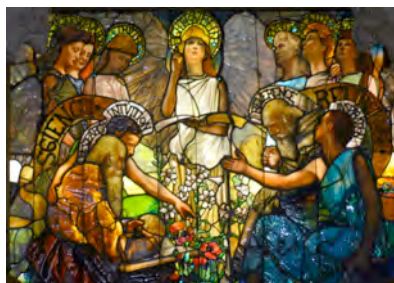
Cosmology professors and preceptors in summer planning session.

Example 1: Cosmology and the Ultimate Questions

A physicist and a philosopher guide students through this exploration of ancient and modern cosmology. From antiquity and the Ptolemaic conception of the solar system to modern philosophers and important concepts from physics (such as relativity and string theory), students consider the ways in which scholars have attempted to answer questions about the origin of the universe and humanity's place in it.

Example 2: Science and Religion

In this LC, the theme is explored through the expertise of a psychology professor and a religion professor. Students compare and contrast methods of scholars in each field, such as hypothesis testing and the analysis of sacred texts. They also delve into the interpretation of evidence and the making of meaning, including construction of scientific theories and the role of symbol and myth in religious experience. Students are encouraged to explore apparently divisive topics such as evolution and creation, and empiricism and morality, and to integrate their knowledge rather than categorize it.



"Education" stained glass by Tiffany, 1890, showing science and religion in harmony.

Example 3: Oil and Water

A biologist and English professor team up for this field-based LC, in which students investigate the use and misuse of key natural resources throughout the state of South Carolina. Through site visits and interviews with scientists, writers, environmental experts, and community leaders, students uncover the ways in which these resources can be better conserved and utilized. Local problems with oil and water are analyzed and interpreted through open-ended science experiments, creative writing, personal essays, and research reports.

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Oil and Water student helps fifth grader discover a dragonfly's mouth during annual "Meet the Creek" outreach day.

Outcomes

In its seventh year, the LC program has had broad impact. Assessment findings show:

- **Students**, initially discomfited with disciplinary integration, soon seek it. They resist reductionism and criticize narrow interpretations of problems.
- **Preceptors** develop strong leadership skills and are the program's strongest spokespeople. They assume responsibility for "their freshmen," and encourage, tutor, and admonish in equal measure.
- **Faculty**, also initially discomfited with the new paradigm, report heightened respect and understanding of their partner's discipline. Thirty of the 100 full-time faculty members have participated in the LC program (most more than once), and the number continues to rise.
- **Campus-wide**, the LC model is a bellwether and has paved the way for new interdisciplinary initiatives and faculty development programs.
- **Nation-wide**, through SENCER and invited workshops, faculties at other campuses have worked to adapt the LC model at their institutions.

What's Next?

- Substantial redesign of core curriculum for biology majors (to be launched in 2010).
- LCs for science majors and upperclassmen.
- Establishment of a field-intensive integrated Environmental Studies major.
- Assessment of engagement and learning outcomes using classroom and national (NSSE, CLA) methods.