

Reinventing Undergraduate Education: Three Years After the Boyer Report



The 1998 Boyer Commission Report “Reinventing UG Education: A Blueprint for America’s Research Universities

- Inquiry-based teaching
- Collaborative learning
- Freshman seminars
- Integrated first-year program
- Instruction in writing and oral communication
- Capstones
- TA training
- Opportunities for research and creative activity
- Faculty awards/recognition



Most Significant Development in the Past Three Years

Administrative



- The vision and commitment of key administrative leaders
- Significant activity on campuses
 - Creation of Undergraduate Task Forces
 - Establishing position of Dean or Vice Provost for Undergraduate Education
 - Establishment of Teaching Resource Centers

Most Significant Developments in the Past Three Years

Academic: Four issues have dominated:

- Expanding research/creative activities for undergraduates and making such activities the centerpiece of undergraduate education at research universities
- Providing a first-year experience that promotes active learning and critical skills development
- Revamping general education, giving special attention to core introductory courses
- Increasing and extending writing requirements in order to improve students' writing abilities so that they are "at a standard reflective of a college degree"



Most Significant Developments in the Past Three Years

Pedagogical



- Establishment of teaching resource centers.
- Although the teaching resource centers were primarily intended to help faculty, the main beneficiaries have been graduate students. The centers are becoming more important players in graduate training than they are in faculty development.

Most Significant Developments in the Past Three Years

Facilities



- Campuses that have benefited from new facilities, such as digitized libraries and building with rooms wired for classroom instruction, report that they have led to new approaches to teaching and learning and significant improvements.

Most Significant Developments in the Past Three Years

Social



- Creating small social and academic communities that make large research universities more welcoming and manageable for all undergraduates but particularly first-year students.
- Primary approaches have been to establish and expand learning communities and to integrate students' academic and residential experiences.

Issues For The Next Three Years

- Expanding research/creative opportunities by using untapped resources.
- Refining our understanding of what constitutes “research-based” teaching and learning.
- Developing a clear understanding of what research universities want to and should be assessing.

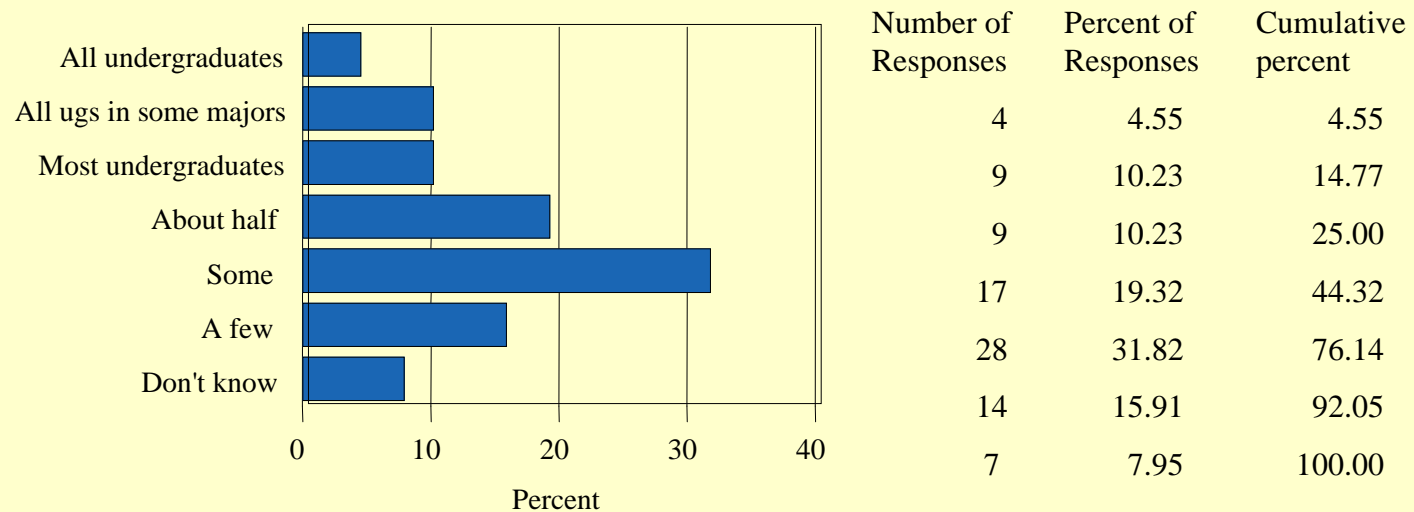


Increased Student Participation in Research/Creative Activity

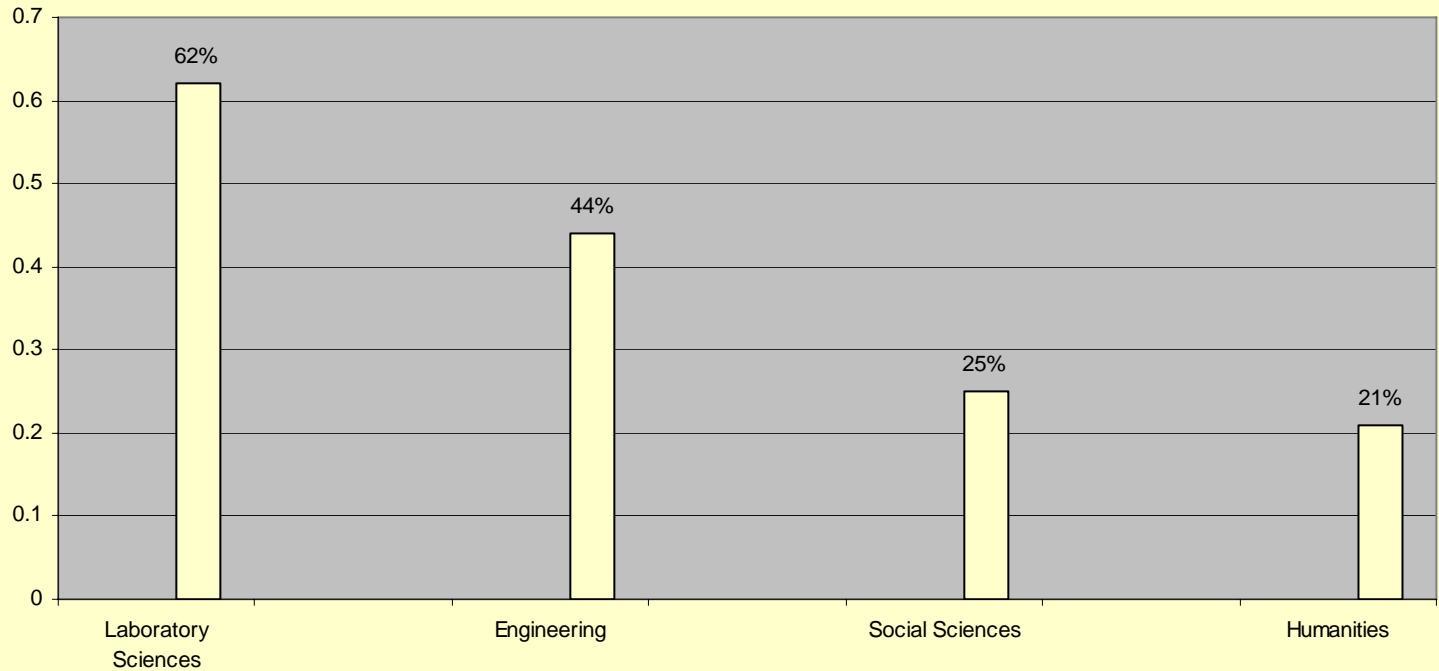
- “Most noteworthy” achievement of the past three years.
- At about 45% of the campuses, half or more of the students participate.
- Most common rate is 20-25% participation.
- Greatest involvement is in laboratory sciences and Engineering.
- Very low participation in Economics, Political Science, Sociology, and Mathematics.
- Rise attributed to
 - Increased emphasis
 - Increase in funds available



How Many Undergraduates Participate in Supervised Research or Creative Activities?



How Many Undergraduates participate in Supervised Research or Creative Activities?



Why is Psychology Different?

- Long history of involving undergraduates in research.
- Psychology 101 courses typically have students participate in experiments.
- Curriculum typically includes Research methods courses.
- Lends itself well to students of diverse backgrounds and interests.
- External funds have been available to support students.
- Strong tradition and culture within the discipline.



Who is Doing Research?

- Students in Honors Programs or pursuing Honors in a discipline: 71 Universities



- Students enrolled in programs that target specific populations: 48 Universities

- All students: 5 Universities

Undergraduate Research and Creative Activity: Challenges



- Defining what constitutes a research experience
- Establishing goals and desired outcomes
- Distinguishing research from discovery- and inquiry-based learning
- Determining percentage of undergraduates that can reasonably be involved
- All students or specific groups?
- Expanding opportunities
- Resources: Financial and faculty

Expanding Undergraduate Participation in Research: Challenges



- Developing a definition of “undergraduate research” that encompasses a range of activities and acknowledges the need for different goals and outcomes for undergraduates at different levels and across all fields.
- Expanding opportunities by
 - Embedding research and research-related activities in introductory and lower division courses.
 - Creating a continuum of academic experiences through which students gain required knowledge and skills and are prepared to participate.
 - Providing a range of options to meet the diverse needs and interests of undergraduates.
 - Obtaining adequate financial support.
- Research supervision is labor-intensive on the part of faculty.
Addressing the “overload” issue for faculty.

First-year Experience

Freshman Seminars

- More than 80% of responding universities now offer some kind of academic seminar to first-year students. About 45% enroll half or more of their freshman class in such seminars.

- Although most institutions would like to be able to accommodate more students, and a significant proportion have plans to do so, they are limited by a lack of resources.

- At 50% of the responding institutions, only ladder faculty teach the seminars; most of the other respondents report that while faculty are responsible for most of the teaching, non-ladder instructors, including advanced graduate students, also participate. A small number of institutions invite emeriti faculty, who reportedly are among the most enthusiastic instructors.

- Some institutions involve advanced undergraduate students and research faculty.

- Several respondents noted that one unanticipated benefit of the freshman seminars is that they enhance faculty interest in pedagogy. In this way, they become a “powerful tool” for training faculty to work with all students.



Inquiry-based Teaching

•The Boyer Commission report promotes inquiry-based learning: Imbuing students “with a sense of the excitement of discovery and the opportunities for intellectual growth inherent in the university experience.” Based on the survey, faculty and administrators are clearly thinking and talking about change in ways that are consistent with the commission’s recommendations, but they are having difficulty. The major conundrum: inquiry-based learning “has been a buzz word for several years. Many courses/instructors say it is a characteristic of what they do, but no one has agreed on what exactly it is.”

•One sentence tells it all: “Our sense is that inquiry-based approaches are forming an increasing part of a number of introductory courses, but we have no data and have not gathered systematic information.”



Written and Oral Communication

- Facilitating the development of good written and oral communication skills is a very high priority.
- In recent years, virtually all responding institutions have increased their writing requirements, and a significant number want to do even more. About half require two semesters of lower-division writing or writing-intensive courses, and about half require at least one upper-division writing intensive course. Efforts are also being made to incorporate writing in the major.
- Increasingly, institutions are employing trained staff to assist faculty to develop and teach the writing component of their courses.



How is Teaching Writing Infused in the Undergraduate Curriculum

How is teaching writing infused in the undergraduate curriculum?
(Check all that apply.)

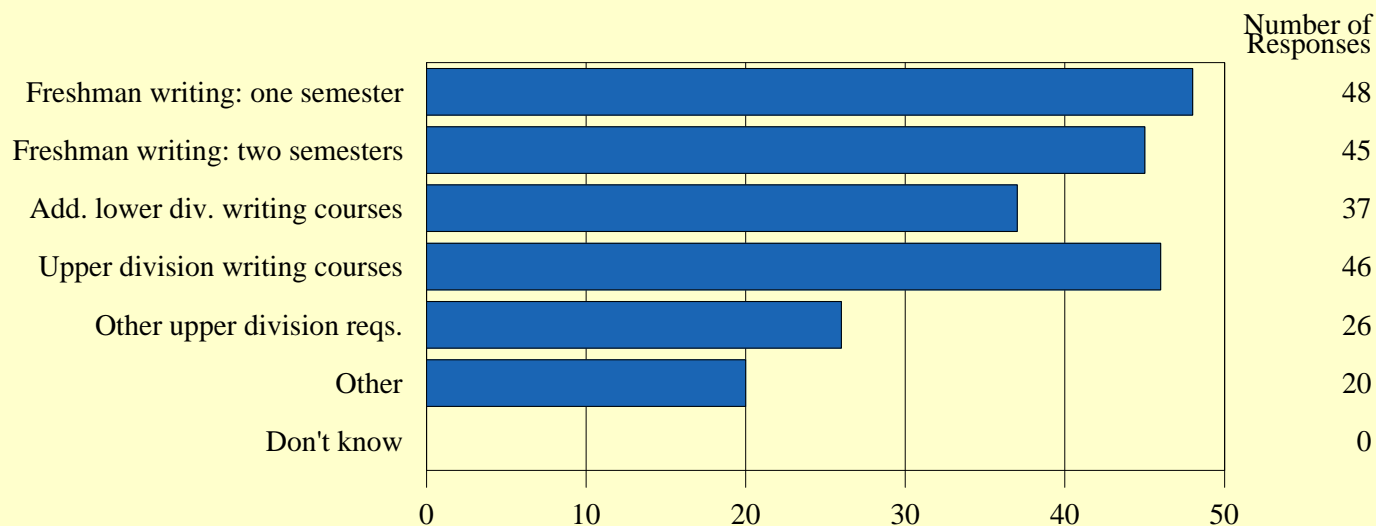


Exhibit 25