Undergraduate Research: Teaching the Scholarly Method

"Effective undergraduate education is essential to the success of research universities, and the teaching of the scholarly method is the most important aspect of undergraduate education." [i]

Overview

In the current climate of financial pressures and competition, the University is being more conscious about what differentiates the experience on our campus with experiences at other institutions. We often emphasize that research faculty are better able to incorporate recent findings, new creative expressions, and current scholarship into their classroom instruction. A deeper differentiator is that our faculty are qualified to engage students in the creation and evaluation of new knowledge. We feel that these differentiators, and especially the latter, are currently underdeveloped on our campus. Because of that, many of our students may be missing a key component of a liberal education, namely an increased understanding of the scholarly method and an appreciation for the process of creating knowledge.

This "Big Idea" leverages our status as the smallest public AAU institution with a commitment to a liberal arts education, a faculty dedicated to both research and undergraduate education, and a major research library with a strong focus on instruction. It also speaks directly to the prelude in the goals section of the Academic Plan: "The University recognizes that the mere maintenance and transfer of current knowledge will not successfully prepare our students for the inevitable and unpredictable changes in the economy and in our society. Moreover, our objective is not simply to impart to our students the ability to achieve success in a purely financial sense, but to assist them in their pursuit of the complete life that engages their talents, intellect, and spirit. This lofty sentiment is stated clearly in our mission statement 'of helping the individual learn to question critically, think logically, communicate clearly, act creatively, and live ethically.'"

This "Big Idea" builds upon several of the criteria stated in the Academic Plan. Because it is embedded throughout the curriculum, it strengthens the foundations of a liberal arts education. It is directly concerned with the critical analysis of content and the creation of new knowledge, and in that respect it promotes a culture of innovation and experimentation. It integrates research into the teaching and learning experience. And it uses a systematic approach that builds on experience and understanding.

We recognize that this initiative, like many of the other Big Ideas, is very broad. In every department, at every stage in undergraduate education, there are possibilities of promoting research. Many of our faculty are already engaged in teaching the scholarly method and creating opportunities for undergraduates to participate in original research. The initiative intends to considerably broaden the scope of those activities, so that every undergraduate has *several* experiences that stretch well beyond the "mere maintenance and transfer of knowledge." To create a systematic structure for this initiative, we have separated the broad concept into three

different parts: effectively navigating the information universe, assimilating knowledge, and creating new knowledge.

Plan of Action

Scholarly habits of thought and research are not created in a single moment of learning, but through many experiences over a course of study. We propose to teach the underlying skills of "information fluency" to UO undergraduates using a tiered, three-step approach that engages instructors, librarians, and academic support staff.

Step One: Navigating the information universe

In lower division courses (ideally during the first year of study) all students will learn some of the basics of information fluency, including:

- Identify a variety of information resources such as journals, books, government documents, etc.
- Understand the methods and tools used to find information from several sources.
- Understand the methods and tools used in searching for information
- Evaluate the quality of information on Websites.
- Understand the foundational ethics of plagiarism, citations, and intellectual property.
- Manage their online identities in social networking environments.
- Communicate professionally and efficiently using email.

Students will be taught through a variety of channels including in-person orientations during the Week of Welcome, an "information" page on each Blackboard site (using a scalable automated and customizable approach comparable to NCSU Course Views (see http://www.lib.ncsu.edu/dli/projects/courseviews/, and support for faculty who wish to incorporate these basics into their classes. Also, required writing composition courses (WR 121 and 122) may incorporate new teaching units on digital literacy, the proper acknowledgment of sources, and the evaluation of on-line information.

Step Two: The assimilation of knowledge / Making sense of research

Students who have learned fundamental search skills now need to understand the more demanding and precise world of scholarly information. At this level, students will build on the competencies listed above to increase their understanding of the specialized resources, scholarly practices, research methodologies, software applications, scientific instruments, and media production tools appropriate to their major fields of study. This step emphasizes:

- The development and refinement of critical and evaluative skills.

- A more sophisticated understanding of how knowledge is created, regulated, and disseminated.
- A more sophisticated appreciation for the legal, appropriate, and ethical use of information.
- Scholarly acculturation in the information models of a discipline.

One approach would be to teach these skills through one-credit courses attached to large-intake classes in multiple departments. The purpose a supplementary course is to teach lower-division undergraduates how to find and use scholarly materials in the discipline they are studying. Research-intensive instruction would begin by familiarizing students with the databases and indexes in the relevant field. It would then continue with units about copyright, fair use, and plagiarism; about research ethics, the scholarly publishing market, and the history of media.

On a holistic level, these one-credit courses will teach students about the role research plays in society, emphasizing the importance of incremental advances and alternative perspectives to the growth of knowledge and understanding. Students will learn how different disciplines think about research and will understand the importance of a global network of scholars. They will learn how to read and understand a scholarly article in the relevant discipline, how to follow the logic of an argument, how to interpret data, how to cite sources, and how to be a critical reader. Because these new one-credit courses will supplement existing large-enrollment, lower-division classes, students will benefit from taking more than one of them, and they should be distinct for each discipline.

Outcome: We would hope to see, as a result of this program, reduced plagiarism and better research papers from upper-division students; more, and more successful, use of library databases by undergraduates.

Step Three: Creativity and the Creation of Knowledge

This step encourages students to synthesize their experiences over their course of study to produce an original work of scholarship that is fully supported by their mastery of fundamental and advanced research and information skills. In connection with upper-division classes featuring capstone, thesis, original laboratory or field research, independent study, real-world service, or creative work, students will explore the excitement and challenges of scholarly research. Students will generally reach this third step as they complete their major; however, cross-disciplinary projects may be particularly valuable. For example, an undergraduate visual arts major with computer skills might assist another research group in better visual presentations for their data, or a math major could work on data which needs to be analyzed in the law school. Step three emphasizes:

- Original, creative, and imaginative scholarly work.
- The nature of research and learning as lifelong creative endeavors.
- The importance of building collaborative scholarly networks.
- The iterative and progressive nature of building scholarly research skills.
- The importance of using research to inform teaching.

- The development of students' own research interests.
- The presentation, publication, and exposure of newly created knowledge outside of the institution.

Involving students in research is historically most common in the physical sciences. Indeed, we already have a significant amount of this on our campus, as is common at first-rate research universities. But such research can and does also occur in other areas, such as in the business school doing market research or journalism students conducting interviews. Not all students will undertake this final step. Those who do will demonstrate independence, discipline, motivation, and direction toward further studies in their field. Because their information needs will be more focused and in-depth, instructors, librarians, and academic support staff will work closely with these students over the course of their advanced study and the creation of their original work.

Outcomes: We hope to enhance the independent research and writing skills of UO graduate in across all majors and disciplines. In working careers that will typically involve several job changes, our students should be prepared to adapt easily to technological and social changes.

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[i] Courant, Paul N. No Brief Candle: Reconceiving Research Libraries in the 21st Century, Council of Library and Information Resources, August, 2008