

# **Essays on Teaching Excellence**

## ***Toward the Best in the Academy***

*Volume 19, Number 4, 2007-08*

A publication of The Professional & Organizational Development Network in Higher Education ([www.podnetwork.org](http://www.podnetwork.org)).

# **The Right Start: Reflections on a Departmentally Based Graduate Course on Teaching**

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Full credit courses on teaching offered by academic departments for their own graduate students and postdocs have many advantages.

Many students come to graduate school because they want teaching to be an important part of their future professional life. Most who are hired in academia will go to jobs where teaching is important.

Indiana University's Graduate School noted that 95 % of its Ph.D.s who landed tenure-track positions found those positions at liberal arts colleges, smaller comprehensive universities, and urban institutions. They noted that their teaching experience at Bloomington did not necessarily prepare them fully for these jobs.

I offered a course on Alternative Approaches for Teaching College Biology intermittently for 30 years in a science department that has a very strong research emphasis. Students and post-docs who took it often reported that they were told by hiring deans that their teaching

preparation or their statement of teaching philosophy and interests provided the edge that allowed them to get an interview or a job. Indeed, some reported being told by deans at good liberal arts colleges that Ph.D. graduates from Big 10 schools usually were not sufficiently prepared for teaching even to make the initial cut.

Departmental faculty automatically model professional breadth by offering such a course. They also can tailor the course to the special problems and issues of teaching in that field, thus increasing both the interest of the students and the probability of useful innovations in teaching. In biology, for example, recognizing that students exhibit incompletely developed abstract thinking skills illuminates many learning difficulties which limit their ability to work with equations and models (search Journal of Chemistry Education for Piaget). Evolution provides a special problem, one that is difficult to address adequately without tying it to post-Piagetian cognitive development (Nelson, 2000). Also, every science has significant problems with the strong persistence of alternative conceptions or misconceptions (Duit, 2007). Such topics are essential to developing expertise in disciplinary teaching but differ wildly among departments. Accordingly, these essential topics are too esoteric for general teaching development programs to address.

In my course, I announced learning goals to the students by emphasizing their changing relation to teaching: “For many of you, the most important early effect of this course may be on your competitiveness in getting an academic job. It will allow you to write

a more sophisticated statement of your teaching, one that reflects deeper thinking and an acquaintance with major current ideas and one that also demonstrates how science can be taught more effectively. Your statement should articulate and justify your current position on each of the major teaching issues raised during the class. Examples include: an analysis of the role of biology courses in liberal and professional education, a consideration of which modes of teaching are most appropriate for which biology courses, and a statement of your planned approach to student evaluation.” Weekly work included readings, a journal discussing the previous week’s class session and the new readings and their relationship to the on-going class. The teaching philosophies were, to a large extent, summaries of the weekly journals, because the class sessions were heavily based on discussions of their journal entries. Auditors (including other faculty) were welcome only if they agreed to follow the readings and keep a journal.

Another major goal required students to experience and master a variety of ways of using structured, student-student interaction to advance learning. The journals provided one opportunity for this. Brief lectures followed by writing and discussion of specific questions based on the lectures provided another. For learning styles, students reviewed the possible outcomes on both Kolb’s and Meyer’s-Briggs’ inventories and chose the ones they felt came closest to fitting them personally. Subsequently, they filled out the inventories and compared the outcomes with their initial predictions, thus gaining a hands-on feeling for both the general usefulness of the

inventories and for its imprecision in some cases. Following that, they perused their journals to understand how learning styles related to their past and present learning experiences. Svinicki and Dixon (1987) helped students to apply Kolb to learning cycles: they were asked to design a learning cycle for a biology lesson. Thus, we had used our experience of a learning cycle to learn learning styles and cycles: We started with concrete experience of the instruments and followed that in turn with reflection, theory, generalization and then application.

Aspiring college instructors should learn how social class and other variables influence student success. In addition to classic quantitative demonstrations (including Treisman, 1992), we examined excerpts from Rose's (1989) narratives on undergraduate learning. It was clear from the journals that ideas of privilege were new to the students and that it took a combination of numbers and stories to make these ideas accessible to them and their implications for teaching and learning clear. We then discussed the (unexpected) importance of what we now understood about learning in the sciences from personal stories and other narratives.

Creating a sample syllabus was optional: "If you wish, we will help you refine a draft syllabus for an undergraduate course that you would like to teach. It should include: an explanation for the students of the relationship of the course to the central purposes of an undergraduate education and to the structure of particular requirements (distribution, major, pre-professional), of the objectives

of the course, of the themes of the course, and of the rationale for the teaching/learning methods that will be used. It may also include an explanation of choice of text and a week-by-week summary of the topics or questions to be covered (not just a two or three word naming of the topic).”

I told students to spend no more than six hours work per week for this two-credit course. Those who worked on it most intensively often reported spending significantly more time than this, but tolerated it because they were learning things they really wanted to know. Some also emphasized that the graduate curriculum was imbalanced in the amount of preparation for teaching versus research. Even at just six hours per week for 15 weeks, a single course may elicit more serious attention to alternative approaches to teaching than the entire remainder of the student’s five or six years in graduate school.

Faculty reactions were mixed. Especially in the earlier years, students occasionally audited the course with an explicit request that I not mention their participation to their major professor. One faculty member, who noticed his student doing the weekly journal on a computer in the lab, sent the student home with the comment that the lab’s facilities could only be used for research. In later years, a few faculty members chose to do the work necessary to audit the class. In addition, other faculty members are offering the course since I have retired.

There were only a few similar courses in other departments at IU for many years. Now, however, some 30 programs offer 1 to 6 such courses ([www.iub.edu/~teaching/allabout/prepare/pedagogy.shtml](http://www.iub.edu/~teaching/allabout/prepare/pedagogy.shtml)) and we are behind some departments elsewhere (see especially Chemistry at the University of Michigan). Faculty who teach the courses have often attended many faculty development sessions and frequently ask the institutions' instructional developers to offer some session in the courses, which is very helpful to beginners, or to suggest attendance at appropriate campus workshops.

I felt quite privileged to have had a chance to help many students become better teachers in their subsequent faculty roles as well as while they were still teaching assistants at IU. And I like to think that my efforts helped prepare IU for recent programs in the Scholarship of Teaching and Learning. But honesty compels me to confess that it was really, really fun to teach classes in which every student was intensely interested and in which my own learning continued post-haste year after year, even more so than in regular graduate classes. One cannot teach such a class repeatedly without thinking ever more deeply about one's other courses.

### **Resources**

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