A Graduate Student's Views of a Mentored Teaching Program

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I. Introduction

There are many reasons why colleges and universities use graduate students to instruct their classes. In the current economic situation, many schools are faced with budgetary shortfalls and declining research funding. In order to avoid cutting back programs or eliminating programs, it is tempting to use graduate assistants to teach classes when regular faculty are not available. Unless done properly, this could result in ineffective teaching of our undergraduate student - with far reaching consequences. Additionally, it could be unpleasant enough for the graduate student so as to convince them that a teaching career is not in their best interest. In either circumstance, the graduate student will have missed a growth opportunity.

At the University of Wyoming, graduate students may enter into a program specifically designed to prepare them for college or university teaching careers. The Program in College Teaching (PCT), first initiated in 1994, introduces participants to the latest thinking in the teaching of the specific subject area. The ability to teach effectively is paramount at all universities today, even research institutions. It is no longer safe to assume that an individual well versed in his or her discipline and having excelled in the research process to earn the Ph.D. will also have developed and/or learned how to teach effectively. Preparation to teach the subject is now just as important as knowing what to teach.

Earlier programs such as this existed, and where the basis for developing the program in college teaching at Wyoming. We paid specific attention to who our students are, and where they are most likely to find future teaching opportunities in designing the specific components of the program. The program involves participants in five broad ranging but specific activities. They are broad ranging in that each student designs his or her program requirements around specific tasks that will best meet personally perceived needs. The program advisory board then negotiates the final requirements for the student's activities. The five required components are: 1) A teaching seminar, 2) Investigation of current teaching practices, 3) a mentored teaching agreement, 4) A reinvestment activity and 5) developing a teaching portfolio.

The mentored teaching agreement is an agreement between the graduate student and a faculty member where the faculty member agrees to supervise and guide the graduate student during his/her classroom teaching experience. The teaching portfolio includes a collection of teaching materials representative of the graduate student's abilities. The purpose of this collection is to document teaching experience, strengths and achievements. The documents could include sample tests, sample homework, sample lectures, student evaluations and so forth. The reinvestment involves sharing in some reasonably formal context some aspect of the knowledge and experiences gained through the teaching with a larger audience on this campus.

II. The mentoring of graduate students

In the fall of 1995, I was asked by the Electrical Engineering Department to teach EE 4380 - Microcircuit Technology. This class introduces the students to printed circuit board manufacture, thick films, thin films, IC manufacturing and related processes.

I entered into the mentored teaching agreement to obtain formalized help from a faculty member with several issues. First, as a student, I have seen a lot of good and bad syllabi. However, I had never written one and was not familiar with the process of planning out a semester. Therefore, it was found very helpful to confer with a member of the faculty about how much material could realistically be covered in one 50 minute class period and what material was most important to teach. Through these discussions the tendency to overestimate how much material could be covered was avoided and the resulting syllabus was a useful planning tool through the semester.

The mentoring program was also helpful in the preparing of lecture notes. I found this to be substantially different from note taking in the class which involves simply copying down whatever information is given by the professor. When writing lectures, however, a great deal of thought and planning is required to balance the amount of detail presented and the need to cover the material. Also, in some cases the text book only superficially covered material I considered important. In those cases more material had to be included the lecture than might otherwise have been necessary. I also found that preparing lecture notes was a skill that improved as the semester progressed.

The most challenging task I encountered was that of writing good tests. Although I have taken numerous tests as a student, I had no concept of what made a test hard, easy, long or short or more important, how to measure what I had wanted students to know from the class. I found it a greatly beneficial to have a faculty mentor review the tests for length and suitability of the material. This review also helped ensure that the test would measure my teaching and student learning. There were certain objectives for what the students should know before the test and the results should show whether or not these objectives had been met. I also found that the choice of words used in a test could affect the way a test question was interpreted. The faculty mentor helped me identify questions on the test that could be misinterpreted so that they could be restated more clearly.

Initial discussions with the mentor included a number of basic issues outside of the classroom such as being available to students, how and when to conduct office hours, how many office hours are necessary per week and allowing for appointments for students who cannot meet during office hours.

During the mentored teaching experience, attendance at departmental faculty meetings was encouraged. This was very helpful in letting me see the inner workings of the department and it made me realize that there is much more to being a faculty member than just teaching. I discovered that most faculty members spend a large amount of time on things like committee meetings, proposal writing, research, advising, etc. These were things that the faculty members just had to find time to do in between grading, lecture writing, office hours and so on. I learned that time management is a crucial skill and the sooner it is acquired, the better.

Throughout the semester I had discussions with my mentor and other faculty members on various topics related to academia. One topic discussed was the ethics of academia. Of particular interest in this discussion was plagiarism and cheating and how to prevent it. It is easy as a student to "borrow" someone's homework and copy it to get over a "hump." However, in academia, as most places, this type of behavior is unacceptable and students' must be encouraged to do their own work. Thus, methods of handling such incidents were discussed together with possible solutions to such incidents. Another discussion topic was academia and family life. From the outside, the life of a faculty member might seem rather "leisurely." As previously mentioned, there is a lot that is not visible of what the faculty member has to do. This might also have a toll on family life with late hours and work at home. A faculty member is supposed to have a standard work week, but most put in more 40 hours per week. We also discussed university and faculty expectations of a new faculty member. Through these discussions I discovered that faculty members work at least as much as their counterparts in industry. However, the "customer," the students, only see a very small amount of the work being done. We also found it beneficial for the mentor to attend the classes on a regular basis. This allowed for feedback from the mentor about teaching technique, pacing of the lecture, teaching habits, and communication methods. This was done to ensure that the quality of the teaching was up to the standards of the university and the department and that the students in the class were getting the same information and quality lectures they would expect from a full faculty member.

In order for the students in the class to be able to influence their own learning environment, we tried obtaining student input by encouraging the students to provide feedback through the mentor. Through this process, we wanted them to have an opportunity to influence their own classroom environment. This was meant to be feedback regarding the graduate student's teaching capability. Unfortunately, this met with limited success, as very few students made use of the opportunity, and the few that did comment, made "standard" complaints about the amount of homework and lab work required.

III. Student expectations

The students have every right to expect the same kind of professionalism and knowledge from a graduate student as they would from a full faculty member. This would include attitude, communication ability and approachability. By entering into a mentored teaching agreement I hoped to address these points and assure the student that they "got what they paid for." This was done by letting the students know about the mentored teaching agreement during the first lecture. They were introduced to the mentor and advised that they could discuss any problems in the class with the mentor. I was also concerned about what sort of relationship to expect with my students. I had questions such as:

Would my students, who are also my peers (there were other graduate students taking the class), expect favoritism such as less homework or easier grading? Would I be taken seriously as an instructor? Would the students use their peer "status" to manipulate course procedures? I believe that these and similar questions are going through the head of most graduate students teaching classes. The answer to these questions is, in many cases, being provided by the behavior of the teaching graduate student. If the graduate student is allowing him/herself to be "used," some students will use the opportunity. Through the mentoring process, the graduate

student can be made aware of behavior that can lead to such opportunity for “abuse” and thus can take measures to avoid pitfalls.

My other concerns included potential the hazards of misconduct as an instructor, for example, the charge of “favoritism.” Although this should never happen, it is important to have an understanding of the potential problems. I tried to resolve these issues by thinking of how I wanted my instructors to treat me when I am taking classes. For example, when grading homework and tests, I tried not to look at the name on the cover page before grading. Ultimately, however, many of these issues never arose. For example, the issue of sexual harassment did not come up in this class. Furthermore, I never felt any peer pressure from the students, nor did I feel that I was not taken seriously by the students. I believe this might have been caused by the fact that I was older than the students in my class and that I had been a graduate student much longer than the graduate students in the class. However, I found it useful to discuss these and other ethics questions with the mentor as well as with other faculty members.

I had previously taught laboratory sections for various electrical engineering courses and was comfortable with managing a group of students. However, I still found that the switch from the laboratory to the classroom environment required some major adjustments. Even though the laboratory is a classroom, the learning experience is quite different. When teaching lab, I normally use a “hands-off” approach by letting the students do all their own work and only help them when they ask for help. From this advising role in lab, I now had the responsibility for keeping the students’ attention for 50 minutes while delivering a lecture. I therefore had numerous discussions with the mentor and other electrical engineering faculty regarding lecture techniques and presentation methods. This included items such as the effective use of the blackboard, the benefits and limitations of overheads and computer-based demonstration, and “show and tell” such as passing around sample wafers, sample IC’s and so on. Consequently I developed a lecture technique that emphasized students interaction and seemed to keep the students engaged for most of the time. This consisted of asking the students questions while going through the material, using samples related to the material being covered to visualize the processes and to recap at the beginning of every lecture. I also placed heavy emphasis on homework assignments to augment the learning process. Basically, I tried to combine what I had found to be good teaching techniques through the courses I had taken into my own teaching technique.

IV. Conclusion

I found there to be both benefits and drawbacks to the mentoring system. The benefits included guidance on classroom behavior, lecture preparation and teaching techniques. Major drawbacks could include mentors with strong opinions, mentors with no opinions and absent mentors. Since the mentor is obviously crucial in this process, it is extremely important to have a mentor that guides the graduate student and does not dictate. Teaching techniques are individual, so the teaching technique of the mentor might not suit the graduate student perfectly. On the other hand, the mentor should point out better teaching practices and techniques and let the graduate student adapt these to his or her personality. Obviously, if the mentor is absent, the graduate student will be in the dark and nothing is gained. For more information on mentoring, contact the American Association for Higher Education, Washington, D.C.

I did learn that it is much easier to be a student than a professor and that teaching is an acquired skill. Thus, I felt that my classroom skills improved noticeably over the semester, though not due to student feedback, rather through mentor feedback and the fact that I got used to teaching.

I would recommend something like the program in teaching to any school using graduate students for teaching purposes. It makes the teaching experience "safer" and more enjoyable and allows personal development as well as professional development. Additionally, by getting "good" professors involved in the program, the graduate student, the students taking the class and the mentor will benefit.

For more information on the Program in College Teaching, Contact Dr. Donald S. Warder, Dean, Graduate School at the University of Wyoming. Information on the program is also available at the University of Wyoming Graduate School web site: http://grad.uwyo.edu

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