On Teaching and Learning

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On Teaching and Learning publishes articles and essays on aspects of pedagogical practice and on research that has implications for teaching.

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Faculty Development Writ Large: A Decade of Working with Teachers to Help Them Improve Their Teaching

Dean K. Whitla

Teaching, curiously enough, poses the biggest dilemma in higher education today. One would assume that after centuries of higher education there would be an acceptable understanding of what constitutes good teaching; that the qualities, personal skills and levels of knowledge that are fundamental to teaching would be widely known and accepted. One would also assume that those new to the craft would be appropriately schooled and as a result, the quality of classroom instruction would be universally high. Unfortunately, this simply is not true. This article explores one institution’s attempt to understand and promote the elements of good teaching, relating these elements to specific ways teachers can improve the state of the art.

A dozen years ago, with support of the Danforth Foundation, we established a Center for Teaching and Learning at Harvard. While it falls within the general domain of faculty development, the focus of this Center has been on the improvement of teaching in the classroom. Other centers around the country have given more attention to helping faculty who are burned out or need a change of field because of reduced demand for their specialty, or who need to strengthen skills in their disciplines. Since the Harvard Center has focused primarily on how one improves pedagogical experiences in the classroom, it has provided a laboratory in which to do research on teaching as well as to help individual teachers improve their skills.

What did we learn about improving teaching during the first decade of work? Our single most effective method for producing improvement has been to have teachers review a video tape of their own teaching with the aid of a consultant. To suggest that a picture is worth a thousand words is not a cliché. When reviewing a video tape one need not even mention anyone’s tendency toward nervousness, failure to answer ques-

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Many people became regular patrons of the teaching laboratory. This was overwhelming, as Roland Christensen would suggest, have mastered. This can come simply through years of experience, or much more quickly, using video taping with a consultant. The video process not only facilitates this process but at the same time provides a quasi-experimental record. It can be thought of essentially as a pre-post-post-post experimental design; each taping followed by another, with an intervening session with a counselor. This cycle can be repeated as many times as is helpful. We have found that the learning curve is still very steep after the first two or three sessions. Even after four sessions most people will have had more opportunity to repeat ideas in the classroom and begin to consolidate their learning. This process leaves a permanent record available for review which can be very instructive. (Incidentally, the videotapes are never used without the written permission of the participant, and the process is completely confidential.)

Those who have used the Center’s video taping services have been virtually unanimously enthusiastic about their effectiveness, so overwhelmingly so, that early in the history of the Center we stopped asking people to simply complete questionnaires about their experiences. Many people became regular patrons of the teaching laboratory. As evidence of its effectiveness, student ratings of teachers who worked with the Center improved markedly. One year we worked intensively with the person who had the lowest faculty rating and moved him to above the average for his department. Unfortunately, we have little evidence that students learned more, but they certainly rated their teachers more highly. One day, when we were bemoaning the fact that we had no hard evidence that students had actually learned more after their teachers had worked with the Center, President Bok said that even increasing student satisfaction with teaching was very important.

When teaching begins to improve, it is encouraged and supported every day by students. They appreciate better-organized classes, clearer explanations, and discussions that are well led. They will spend more time on class preparation and participate more eagerly. What a teacher needs is more encouragement. We had one instructor who so enjoyed the video taping process and the consulting expertise he received that he became a repeated patron of the Center. His lectures became so effective that he received a round of applause after each class. If one believes, as we do, that every teacher wants to be a good teacher and that poor teachers simply get into bad habits that need correcting, video taping and working with a consultant can be of enormous assistance.

This is not to suggest that teaching is not a difficult task. It calls for an integration of human dimensions into the process of helping students gain an understanding and an appreciation of the subject. A psychiatrist once illustrated the personal dimensions well, claiming that teaching was a conditional “If-Then” relationship. “If his chemistry teacher reminds him of his father whom he loathes, then he will fail the course, no matter how well it is taught.” One distinguished science teacher made a case for the other side of the argument, however. He said that teaching an undergraduate science course was the same regardless of the teacher — the purpose was to explain the material as effectively as possible; only in the humanities courses does a particular professor’s slant on the subject make a difference.

Even though there is greater professional agreement on what is to be taught in beginning science courses, there is no greater agreement among students on the quality of teaching in the sciences than in the humanities. This is a conclusion we drew after examining student ratings in science and humanities courses. While the range of student ratings was slightly less in the sciences than in the humanities, none of these differences was statistically significant.

These explorations of the differences among the disciplines, however, throw little light on the basic dilemma of what is good teach-
ing. We continued our search, examining such variables as age, rank, sex and experience of teachers. None of these independent variables was significantly related to the quality of teaching, although senior faculty were perceived to be more knowledgeable.

At the Danforth Center we compiled a list of qualities that we found in good teachers. The list came from watching video tapes of good and mediocre teachers until we had a sense of why they differed. It has much in common with the list which was compiled from comments students have made about teaching.

1. Be organized; creative teaching can occur in the classroom but one cannot count on the muse to awaken. The best teachers were prepared (in fact appeared to have been over-prepared), but were flexible and willing to take a new direction if it seemed advantageous.

2. The best teachers were aggressively full of enthusiasm for their subject. Diffidence and distance seldom appeared to convince students that they should become actively engaged in the subject.

3. The best teachers knew how to ask and answer important questions and knew which questions were important. Answering questions that did not contribute to the central argument interrupted the flow of the discussion. The good teachers simply indicated that they would answer those questions after the class.

4. The best teachers inspired. They presented ideas in such an intriguing fashion that the students continued to discuss them after class. David Riesman taught only from 12:00-1:00 so that students wouldn't schedule another class immediately after his lecture but rather, talk about it over lunch. He and his Teaching Fellows (I once was one) used to encourage this by lunching with students at Quincy House once a week after the lecture.

5. The best teachers helped students achieve, apparently beyond their expectations. It appeared easier to play to the best of the class but it is ultimately more inspiring to teach the whole class. One Professor of Chemistry used key students to help him pace his lectures — if an average student whom he had located (and students always sit in the same location) was nodding he could then go a bit faster; if he or she appeared lost, he slowed down.

We also decided to explore the qualities of gifted and mediocre teachers through the voice of students. They wrote about gifted teachers as follows:

"Her enthusiasm, friendly attitude, accessibility, and consistent helpfulness are just great."

"Her lectures are well organized and clear, and she occasionally peppers her lectures with personal anecdotes which enliven the potentially dry material."

"He keeps his lectures unbiased and maintains a positive attitude toward students."

"His presentations are both interesting and well structured, and he has a much appreciated policy of distributing lecture notes at the beginning of each class."

"She is enthusiastic, clear, and is concerned for students' progress."

About mediocre teachers they said:

"His presentations are especially confusing and often dull and uninspiring."

"Her presentations are dry and her attitude toward students detached."

"She allows discussion to get bogged down by trivial questions."

"He gives haphazard and poorly organized lectures."

"He focuses on empirical and technical data that one finds difficult to assimilate."

Simply reading a number of student comments illustrates that there are essentially a few fundamental dimensions which distinguish the outstanding teaching from the mediocre. These comments make it abundantly clear that good teachers provide cogent explanations of complicated materials, they are well organized, and they are personable, articulate and interested in student progress. Mediocre teachers are disorganized, unclear, unnecessarily complicated, aloof, and dry. The message could not be more clearly stated.

What are the limitations of such a definition of good teaching? Some would suggest that alumni, not students, should supply the criteria for judging teachers, for they really know who taught material that withstood the test of time. Others disagree, stating that allowing either students or alumni to set criteria for teaching implies a consumer oriented college when it is the faculty who have the responsibility for setting the standards in the academy.

One of the more complex topics with which to deal is the delayed effect phenomenon. Professor Christensen draws upon the words of the poet Amy Lowell to illustrate this point: "Teaching is like dropping ideas into the letter box of the human subconscious. You know when they are posted but you never know when they will be received or in what
form.” In my course, “Individual Psychological Assessment,” I have had students for whom assessment, evaluation, and testing are anathema. They plod through the course with disdain but often times two to three years later come back to express how much the course meant to them now that they are actually in the field and working with children and adolescents.

Clearly there are courses where the impact is slow in coming, but in general I tend to question the value of a course when a year later there is very little memory trace. Some years ago an experiment was conducted where students were reexamined a year after they had completed Economics 10, a beginning course in economics. What was found was that students had forgotten much of the nomenclature on which they had been carefully drilled, they had not continued reading in economics, but they still could use the analytical methodology of the course. These findings provided information useful in restructuring the course. In revised form the professional terminology was minimized, the illustrations were drawn from contemporary issues rather than the classical economic problems (to encourage students to continue reading in the field), and the analytical approach was retained.

Outcome research which restructures teaching is in particularly short supply. We examined the seven leading journals on college teaching and found virtually no evidence of experimental research on teaching. One must return to the classics such as Teaching Tips, written by Wilbert McKeachie some twenty years ago, to find experimentally based evidence on how teaching can be improved.

Why is so little research, such as that which McKeachie has summarized, done on teaching? On the other hand, why is research necessary? Don’t teachers normally compare papers written early and late in their course to determine how much mastery students have of their subject? Don’t they compare student blue books for hour exams with their final examination to get a sense of the students’ learning? One professor, I know, invites students who have not taken his course to sit for his final exam. He finds their answers helpful in isolating what he taught and what students learned.

What else did we learn in the Center that should be preserved? It may seem surprising, but demanding courses were viewed by students as better than easy courses. The correlation between course quality and workload required was 0.43 — far from perfect but a highly significant correlation. In fact, we found no course was rated in the top third of courses in the Faculty of Arts and Sciences unless it was also considered highly demanding.

In our research we found that speech tends to occur in runs. Generally a male student is the first to speak, he is followed by another male, and then a third and a fourth. Then a woman breaks in; she in turn is followed by a second woman, and a third and a fourth. This is eventually interrupted by a male and another male series begins. If one is aware of this pattern, it can easily be broken simply by calling upon one of the opposite sex. Males tend to get more “airtime” in class than females, and if one believes that airtime is a common good (and we do), then this should be shared equally by males and females. Again, members of the majorities tend to predominate over minority members. That too can be easily changed. It should be added that inequalities in speech patterns occur, we’ve found, as frequently when the teacher is a woman as when the teacher is a man.

There are a number of situations which frequently occur in classrooms; let me mention four:

1. Should one permit a student to remain silent in class during a whole semester? One can argue that it is a student’s right to remain silent, but if one believes that participation in itself is a general good, that it is fundamental to learning, then silence on the part of any student is unacceptable. One does learn from participating — organizing and presenting one’s thoughts orally are important to the development of thought; teachers, then, should work to facilitate the process. Professor Christensen has made some excellent suggestions for getting non-participants into a dialogue. One which works well is to state at the end of one class what the opening question of the next class will be and indicate that a particular student, who has not spoken during the semester, will be asked to begin that discussion.

2. What would you do if someone were reading the New York Times in class? Someone said he would compliment such a student; but the answer I liked best was, “I would ask a question to that person’s right, to his left, behind him, and in front of him. I’ve never known anyone with an ego strong enough to withstand this kind of pressure!”

3. What would you do if some student begins a filibuster? Every good teacher of whom I’ve asked this question has indicated he or she would interrupt, and not very far into the speech.

4. How do you know when a class is learning? Again, I enjoyed one of Christensen’s criteria: “The class is learning when someone, as a result of the discussion, publicly acknowledges that he or she has changed his or her mind.” Alas, it happens rarely.
Teaching is an art and a craft. Every teacher can not necessarily be a gifted artist, but it behooves all of us to master the craft of teaching. If we have at our command the skills that help us control the classroom, then we can facilitate the learning process. All of these are secondary to having a mastery of the material itself, but without such skills it is difficult to be a good teacher and conduct a class where students can play an active role. Classes with active student participation, research has shown, provide the best long term learning.

A few good teachers are born, but most are made. Most people need to learn the art and craft of teaching as they would any other skill. First, one must have mastery of the discipline. Some claim that this is 90 percent of the task and that the pedagogical side is only 10 percent. Very few of the teachers I have known were judged incompetent by their students because they were ill informed. Almost all of the variance in student ratings can be found in teachers' ability to present ideas effectively, in an organized fashion, and in an interesting manner. It is boredom which kills most classes. Focusing on vital issues in a lively way and illustrating theoretical points with concrete examples will make formerly mediocre teachers memorable. The ratio of knowledge to pedagogy for good teaching must be closer to 50-50.

To answer the question raised at the onset, we do have a considerable knowledge about what constitutes good teaching. In fact it appears that our knowledge of teaching is much greater than our practices would imply. Why is quality of teaching not improving dramatically? The odds will be markedly improved if several structural changes are made: that teaching becomes more important in hiring, that supplementary services such as those provided by Danforth Center are made readily available to all teachers, and that a climate is created in universities which encourages the use of support systems and peer review. All of the evidence indicates that training should be required of all new teachers. The final driving force to improving teaching will be continued research into both teaching and learning. The current thrust of assessment on student outcomes may prove to have a salutary effect on teaching itself. The current research seems to be directing teaching toward measurable goals and better student achievement.

What could be more satisfying than to be a teacher, to be one of those chosen to transmit the thought, knowledge and culture of one's generation to the next? To create a new generation of thinkers who will build on the very best of one's ideas, and to do it well, is one of life's finest achievements.
Parting Thoughts

I have touched on but a small part of teaching here. The mechanics as to what to do and what not to do are obviously based on personal experiences and are geared to my personality. I do feel, however, that knowing the options may be of some value to you in your work. The thing which I have failed to communicate is how little of all of this is actually work. As I look back through this paper, I am saddened to discover that I have not really revealed the joy of college teaching. I was trained to do research, trained to increase knowledge, but it means so little if I do not have the opportunity to communicate it. How often I have wanted to shake a student by the shoulders and blurt out the answer for what appears to me to be so obvious. That is the temptation of the teacher. But how much more satisfaction I have received when a student has slowly plodded through the reasoning process and discovered the solution for him or herself. Teaching is indeed a funny business. How often you seem to be wasting time when you could just as easily do the job yourself. But as the years pass by and you see those very same students accomplishing things that you never dreamed of doing, you know you must be in the right business.

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