

# TEACHING AND RESEARCH IN COLLEGES AND UNIVERSITIES

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*How research benefits teaching* was a keynote address, “And gladly would he lerne and gladly teach...,” at the 1991 PKAL 1st National Colloquium in his address, James Powell (then President of Reed College) outlined ten recommendations for achieving the appropriate balance between teaching and research in the lives of faculty leaders.

In thinking about the relationship between teaching and research, somewhat to my surprise I remembered a line from Geoffrey Chaucer. In *The Canterbury Tales*, he said of the Clerk of Oxenford, “And gladly would he lerne and gladly teach.” (Chaucer also noted that: “...he [had] but little gold in confer... nowher so bisy and man as he ther nas, and yet he semed bisier than he was.”)

**RESEARCH BENEFITS TEACHING.** I like to imagine that when Chaucer referred to gladly learning, he was describing the attitude of the most successful researchers today. The joy of learning what no one has known before is surely the primary motivation of most scholars.

But what about that Chaucerian connection – “AND”? He did not say, “Gladly Learn *or* Gladly Teach.” Is it true that one should be glad to learn, which here I am equating with doing research, “AND” be glad to teach? To answer affirmatively implies that teaching and research are a least complementary.

Let me try to show why I think they are that and more. I cite three ways that research supports teaching and learning:

First, faculty who only pass on knowledge that others produce tend in time to become out-of-date, and the information they are transmitting becomes less and less current and useful.

Faculty who ware active in research, on the other hand, remain engaged with their disciplines – through involvement with the peer review process in seeking grants, through reading journals and attending professional meetings, and they therefore continually replenish their stock of knowledge. They will be the better informed teachers.

Second, to be able to do research today, when all are busy (and indeed, when some do seem busier than they are), requires a dedication that almost always is the product of a sincere and deep curiosity. A person with that kind of dedication and interest is usually the better teacher. As Rosovsky says in *The University: An Owners Manual, ...* “By far the healthiest and most efficient method of fighting burnout is research.”

The third point is that when faculty bring students into their research projects, the students not only help to make a contribution to that research, they also learn firsthand what research is about, and something about the life of the researcher. As an old Chinese proverb is alleged to say, “I hear, and I forget. I see, and I remember. I do, and I understand.”

**James L. Powell**  
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Project Kaleidoscope.  
[What Works: Building Natural Science Communities](#), Volume 1.  
Washington: Stamats Communications, Inc., 1991. 16-17, 19-20.

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Through participation in research, students are able to apply the knowledge gained in their coursework. Mathematics, for example, becomes not an exercise, but a tool necessary to address a particular research problem. Some students will discover that science is the life for them; others will discover it is not; all will be better off for discovering this about themselves early on.

## TEACHING BENEFITS

**RESEARCH.** Rosovsky, writing from Harvard, explains eloquently how research benefits both faculty and students at research universities. He does not examine whether teaching aids research, but I believe that an even stronger case for this can be made, at institutions of all types.

First is that having to explain one's research to students is a useful and healthy exercise. A faculty member who cannot make a senior major understand at least the basic idea of a research problem may not be thinking that clearly himself or herself. Many flashes of insight have occurred as a researcher attempts to explain complicated research problem to a student. Another Chinese proverb might have said, "I teach, and I learn; I teach well, and I understand."

A second reason is less immediate, but more important: the continual creation of new knowledge requires a supply of new scholars to whom previous knowledge has been transmitted and on which they can build. Tomorrow's researchers are being taught in today's colleges and universities.

Over time, therefore, the ultimate purpose of scholarship is served – equally well and necessarily – by both teaching and research.

To put this in human terms, with few expectations, behind every successfully scientist lies an inspiring teacher. For confirmation, read the biography of almost any famous scientist.

Or, let us have a show of hands in this room. How many of you can trace your interest in science back largely to one key person? In my case, it was Miss Frederickson, fifth grade teacher at Knapp Hall in Berea, Kentucky, known naturally as "Freddie."



Teaching, good teaching, thus is the foundation of our academic house. If it is seen as weak, not only the foundation, but all that stands upon it is threatened.



The final reason I wish to cite is by far the most fundamental. Before expressing it let me acknowledge that at the undergraduate level, in contrast to the graduate, involvement of students in faculty research projects often in the short run actually detracts from research productivity.

It may take as long or longer to explain a research technique to an undergraduate than it would simply to do it yourself. Yet we must take the time and explain, for this simple reason: we are being paid for doing this.

Teaching, good teaching, thus is the foundation of our academic house. If it is seen as weak, not only the foundation, but all that stands upon it is threatened.

A profession that needs and wishes to receive continuing support from society will have to deliver on its promises, both implicit and explicit. Either through tax-based support of public institutions or through tuition at private ones, Americans pay colleges and universities to educate the youth of this country. It is reasonable of them to expect that professors will profess, and tolerably well.

## SOME RECOMMENDATIONS:

- ♦ the reward structure should be changed on an institution by institution basis so that professors will teach, if not gladly, then at least willingly. This will take time, as did the present state of affairs to develop, but it can be done
- ♦ good teaching needs to be defined, and rigorously sought out and promoted, on each campus
- ♦ we need to work harder at evaluating teaching. One of the principal obstacles on many campuses is the unwritten rule that faculty members of evaluation committees and departments should not attend the classes of colleagues being evaluated. Scholars making judgments should not be satisfied until they have all the evidence they can fairly get



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- ◆ each person with the title Professor should profess. To ensure this result, each institution should set a minimum expectation for the amount of teaching that must be done by each faculty member. That expectation would vary with institution; I would say that it is reasonable that each professor should teach at least one course each term, and at least one undergraduate course each year
- ◆ the importance of teaching performance will vary from community college to research university, but even at the latter it should count for at least a defined fraction, perhaps 40%, in the tenure decision
- ◆ colleges and universities review the performance of tenure-track faculty members, but often the scrutiny of faculty who have earned tenure is more relaxed. This needs correction. The teaching performance of each tenured faculty member should be reviewed by the appropriate persons on a regular schedule, perhaps every five years. Teaching level and performance should play a defined, minimum role in determining the promotion and salary level of tenured faculty, even at research universities. If we say, “publish or perish,” we might also say to tenured faculty members, “fail to teach well, fail to flourish”
- ◆ in performance evaluations, faculty members should be asked to show evidence that they are up-to-date. Publication in reference journals is the best, but not the only, evidence
- ◆ at institutions where a record of publication is required, faculty members being evaluated should be asked to present, not all the papers they have written, but only a small number, perhaps five, that they believe to be their most important. NSF should continue its recently-adopted practice of asking proposers to list only their most significant papers
- ◆ at institutions where research is not emphasized, we need to work harder to provide opportunities for faculty members to remain up-to-date and active as scholars
- ◆ finally, an in-depth analysis, one that goes well beyond what I have attempted today, needs to be made of the relationship between teaching and research. To what extent are they in competition, and to what extent, and where, are they complementary? The Education and Human Resources Committee of the National Science Board is planning such a study and should be encouraged and assisted. ■