

In Defense of Lecturing

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<http://www.carnegiefoundation.org/change/sub.asp?key=98&subkey=2105>

In the past dozen years or so, pedagogical reformers in higher education have registered their sense of the faculty's teacherly flaws by proclaiming that the effective teacher should be "a guide by the side" rather than "a sage on the stage." Many practicing faculty members find this jingle insulting; it embeds an implication that they are self-enchanted blowhards who don't understand that teaching involves more than shoveling information and interpretation into their students' heads. By the same token, these faculty colleagues may be insulted by the assumption, prevalent in some circles, that anyone who forgets to yoke "teaching" with "learning" is obviously an egotistical "sage." For a number of faculty, the educational p.c. ("pedagogical correctness") of these verbal maneuvers is aligned with a general dismissal of their training and expertise, as well as distrust of their good sense in their classrooms. In the process, the p.c. viewpoint also relegates the ancient and honorable tradition of lecturing to an *Index of Forbidden Pedagogies*.

The opposition of saging and staging to teaching and learning derives from a set of pressing concerns in an age of rapid change in higher education. Among the most critical of these concerns are student diversity and the uses and possibilities of technology, each of which has played a part in re-centering higher education pedagogy from teachers to students. The startling diversity of the current student body in age, ethnicity, social class, and high-school preparation has furthered arguments that traditional approaches to teaching may be too rigid to accommodate a plethora of needs.

Meanwhile, the stunning rise of information technology, made widely accessible to the youth market, has suggested untapped learning capacity among young adults. Their adeptness at figuring out how to manage their Blackberries and iPods leads some to believe not only in their technical mastery but also in their potential to master everything else. Further, there is a suspicion that modern students may be so wedded to the shifting imagery of an ever-more iconic technology that they cannot attend to talking heads. And so traditional teaching through lecture and discussion won't work, the argument goes, given the way students' brains have become wired.

The emphasis on the "natural" intellectual abilities of college-age students has been bolstered by a number of pedagogical reformers who adhere to a model of cognitive psychology based on observations of children's learning that go back to Vygotsky and Piaget. The child is seen to acquire concepts and language through early interactions with the physical and social environment, and the learning achieved in that way is thought to be not only the deepest and most long lasting but also the best template for pedagogy. Transferring this model to higher-order learning, pedagogical extremists have called for a new Rousseauism, with every college student a wired Émile.

In this model, many of the reformers suggest, we should replace lectures with seminars in which faculty facilitate students' exploration of the material. Larry D. Spence, director of undergraduate learning initiatives for Pennsylvania State University's College of Information Sciences and Technology, made exactly that argument in an article in *Change* entitled "The Case Against Teaching," (November/December 2001). "We won't meet the needs for more and better higher education," he asserted, "until professors become designers of learning experiences and not teachers."

Spence's call for "problem-based learning" reforms foresees "expert-designed learning spaces and experiences, where numerous students can learn on their own, at their own pace and guided by their own interests. Using emerging information technologies, such environments can serve many thousands of students at low per-capita costs. The new task for faculty is to form teams to invent and create such

learning environments." This vision certainly leaves no room for the traditional professorial model of the learned expert in charge of a lecture hall.

In the dream landscape of this learning-by-doing pedagogy, however, the emphasis on the student as the fulcrum of the pedagogical lever raises critical questions about actual student behavior. Granted that the best learning is achieved through independent discovery and efforts to grapple with its implications, whose agency is most effective in powering such endeavor—the teacher's or the student's? Most experienced faculty agree that these are two sides of the same coin, but effusions like Spence's ask faculty members to believe that the seemingly uninterested students sentenced to their tutelage are actually eager learners who have long been thwarted in their longing to take part in mutual discovery.

When faculty object to this rosy vision, it may be because they know from experience the ways in which both the fallen nature of humankind and the distractions of student life can complicate it. They know that many students are apt to slack off without the support of a structure that makes some demands upon them. Thus skeptical faculty may wonder whether these learning-centered idealists have themselves taught large classes at the introductory level. Do they understand the pragmatics of examinations, paper assignments, and even in-class orderliness? What are their solutions for concentrating the minds of students who are not thrilled with free-floating experiments when their main goal is a good grade? In group work, how do they prevent the slackers from exploiting the doers?

The current Web pages for Larry Spence's Learning Institute illustrate the fact that such issues remain a central problem, even for learning-centered pedagogy. In a group of Frequently Asked Questions about small-group sections, for instance, students raise questions about how to handle shirkers, goof-offs, and showboats. A virtual "coach" called "Phoebe Lou"—"a prodigy who read Ayn Rand at the age of three and determined to be the best at something" (<http://pbl.ist.psu.edu/teamwork/phoebe-bio.php>)—answers such student complaints this way:

"Welcome to the NFL! You meet dorks everywhere and you have to work with them. Get used to it and get good at it. I suggest you get together with your productive teammates and confront the dorks. ... Give them a chance to reform. If they don't you can always try an ultimatum: 'Shape up or we take your name off further assignments.' Yeah I know that seems like snitching but it isn't. If these dorks don't learn to work with others they won't last in the workplace. If you don't learn to confront dorks you won't last either." (<http://pbl.ist.psu.edu/teamwork/ask-phoebe.php>, accessed 6/27/2006)

Phoebe Lou also has answers for faculty in such courses. Her response to the instructional question, "In a PBL [Problem-Based Learning] course should I ever lecture?" begins with the familiar denigration of any lecture presentation: "More than fifty years of research shows that lectures are as good as, but no better than, videos, audio tapes, or assigned reading for transmitting information. They are not good for getting students to think or for changing student attitudes or beliefs." B

ut then Phoebe makes a grudging admission that lectures may be necessary after all: "In any PBL class there are times when students need information to proceed. Sometimes a brief, just-in-time lecture is the best way to do this. Sometimes a trip to the library or a surf of the Web will do it. There are no hard and fast rules." (<http://pbl.ist.psu.edu/faculty/faculty-faq.php>, accessed 6/27/06) Even Phoebe Lou must acknowledge that, from time to time, the learning transaction has the transfer of information at its center.

The generalizations about the findings of "fifty years of research" are suspect, I think, for they beg the questions of context, motivation, and student affective response. Students who are eager to learn can probably do so in any mode, from reading books to engaging in PBL. But institutional education is not for designed for autodidacts. It is designed for those who choose, or are fortunate enough to have access to, contact with knowledgeable individuals who can guide them in their pursuit of knowledge.

When students come to us, they don't know very much. And when students come either unprepared or unready to speak up, an appropriate response may well be to lecture. Indeed, I tend to be somewhat skeptical of the current emphasis on seminars for freshmen because many new students are unprepared to help make such seminars work. I think that capstone courses for seniors provide a more logical alternative in the effort to provide small classes for undergraduates.

I base my belief on the work of thinkers like William G. Perry and his forerunner Erik H. Erikson, who—building upon the work of Piaget and Vygotsky, to be sure—moved study of the learning process beyond the conceptual operations of early childhood into the more complicated learning of adolescence and young adulthood. Their insights should alert us to the fact that students in modern university or college classrooms are in multiple stages of cognitive and psycho-social development.

As Perry has suggested, most first-year students are in a cognitive position to learn some of the basics because they are likely to arrive with a world view based on absolutes—right/wrong, good/bad. At later stages, they can accept the reality of multiple viewpoints, then see that judgments can be made among them, and, finally, to make commitments in the light of relative uncertainties. In this process of intellectual maturation, students become better at presenting ideas and formulating questions; they are more willing to participate in discussions of complex ideas once they have attained a level of comfort with being in college, as well as some grounding in the subject.

It is appropriate to adapt our pedagogies to students' developmental progress. In this process, being clueless in a discussion class is much more embarrassing and destructive of a student's self-confidence than struggling to understand in the anonymity of a lecture.

But lectures do more than provide students with the protective coloration of their fellows in the lecture hall. Even more fundamentally, I believe, students benefit from seeing education embodied in a master learner who teaches what she has learned. Erikson, in talking about the psycho-social maturation of students, emphasizes that as they enter into higher orders of conceptualization and language in their college courses, they are at the same time forming their adult identities. And so there are features of the teaching they encounter that may engage students not only intellectually but also in terms of that identity-formation.

It is in this context, it seems to me, that teachers are irreplaceable as models of knowledgeable adults grappling with first principles in order to open their students' understanding. Indeed, surveys have shown that such modeling is critical in students' responses to their teachers: The two features of an individual instructor's pedagogy that most engage undergraduates are control of the material and concern with students' understanding of it. No matter how recondite or obscure the ideas may be, the phenomenon of a grown-up person capable of talking enthusiastically and sequentially can show students how they themselves might someday be able to think things through.

Students who have the opportunity to observe a reasonably articulate expert presenting difficult knowledge can, at the very least, gain the insight that ideas matter. As former chair of an English department, I have read many student evaluations in my day. But I remember especially well one that said, "I will never care much about Spencer, but it did give me a charge to see Professor X up there day after day, carrying on about *The Fairie Queene*." A student-centered critic might fasten onto this response as evidence of the failures of lecturing, and Professor X was an inveterate lecturer. But I see the response as evoking one of the major appeals of lecturing—the passionate display of erudition as valuable in itself—regardless of the rewards of approval or popularity.

One objection that always rises when the subject of lecturing comes up is the possibility that lectures are more likely to be over the students' heads than are discussion sessions. But the content of any college course may be difficult and forbidding, no matter what the mode of teaching. Indeed, it is difficult to

imagine that the students in any kind of class ever achieve total control of the course material, but when they are lost in a free-flowing class, the failure may be harder to notice. The failures in lectures are more public; students can act out their incomprehension and boredom more successfully en masse than in a small group.

A defense of lecturing or any other pedagogical position must, of course, take into consideration which pedagogy suits which discipline—including some practical considerations. In "Science Spaces for Students of the 21st Century," (*Change*, September/October 2004), Jeanne L. Narum imagined "communities of learning" in which the new paradigm forces the redesign of science classrooms to provide "ongoing opportunities for 'hands-on,' laboratory-intensive science, from the introductory level for all students through capstone courses for majors." Narum even suggests that we should speak of "sciencing" rather than "teaching science."

Although I am concerned about the seemingly universal reliance on massive and impersonal lectures for introductory science classes, I would note that equipping science classrooms is very expensive. Spaces for learning high-tech subjects may also require demonstration equipment that cannot be replicated in a series of smaller rooms or in poorly produced visual displays.

And the dependence on lecture classes by the sciences may serve cognitive as well as logistical ends. Although most science-reform programs call for faculty to find ways to apply principles so that students can see their relevance, many scientists continue to worry about whether the foundational knowledge in the "hard" sciences can be learned effectively through group discussion. Indeed, cognitive scientists like Steven Pinker have argued that basic knowledge, not only in math but in many fields of science, cannot really be learned without a substantial amount of direct exposition.

In *How the Mind Works* (1997), Pinker criticizes the constructivists, whose philosophy he describes as "a mixture of Piaget's psychology with counterculture and postmodernist ideology." In the constructivist model, he says, "Children must actively construct mathematical knowledge for themselves in a social enterprise driven by disagreements about the meanings of concepts. The teacher provides the materials and the social milieu but does not lecture or guide the discussion. Drill and practice, the routes to automaticity, are called 'mechanistic' and seen as detrimental to understanding" (341-42). Pinker, on the other hand, believes that concepts have to be laid out, explained, and expounded. Somewhere along the way, as a colleague who has worked in math education has commented to me, students "must learn the arithmetic." And they must also have its relevance explained in demonstrations of problems and theorems.

In short, although both learning and teaching are social transactions, many who consider the ways in which science can be mastered believe that mastery cannot always be achieved through intimate social transactions. No faculty member can "guide" an ordinary student into familiarity with the periodic table. It takes an extraordinary mind like that of Primo Levi or Oliver Sacks to be spontaneously fascinated by the drama of chemicals and the poetry of their symbols. Some theoretical physicists, like Richard Feynman, are born with an instinct for mathematics, but the mastery achieved by most students comes from the mental labor of learning foundational information. And even lectures by experts cannot make that easy.

As a matter of fact, Feynman's three-volume set of lectures, drawn from his introductory classes, became indispensable for those eager to learn about quantum mechanics, even though some of his undergraduate students at Cal Tech are said to have given up their seats when his lecture hall began to fill with graduate students and his scientific colleagues. Recordings of Feynman's lectures are still available; he delivers complicated ideas in a brash Queens accent, punctuated by jokes, ingenious analogies, and a friendly eagerness to accommodate undergraduate limitations.

Like many other faculty, Feynman had gifts that were forensic and dramatic as well as intellectual. Such

teachers thrive in lecture halls, and their classes are oversubscribed and overflowing. Some are famous—Feynman on physics at Cal Tech, Vincent Scully on architecture at Yale, Susan Gubar on women's literature at Indiana, and Jasper Rine on microbiology at Berkeley—but there are lesser-known, yet equally mesmerizing, scholar/teachers on every campus. Lecture courses by such teachers can be as exciting as hearing a great violinist play the Beethoven concerto. Gaining admission to their performances is one of the reasons to go to college.

Rarely do students have the chance to observe intellectual mastery and excitement in their daily world. When they find it on a campus, it validates the life—the liveliness—of the mind. And the fact that undergraduates seek not only performance but also a shared appreciation of it can be gauged by their willingness both to enroll in lecture courses and to hand over fantastic admission fees for mass concerts of popular music. Even though the star may be a distant speck bathed in a spotlight and visible chiefly as an image on a screen, she is there, in person, and that makes it all worthwhile. The academy, too, offers students the thrill of being together at an extraordinary event, the public display of daring and dazzling intellectual expertise.

A fine lecture can reverberate throughout the course in mutual conversations and comparisons, creating a build-up of expectation for the next and the next lecture. In one of the best accounts of such an effect that I know of, Barry Kroll describes his discovery of the power of lectures for undergraduates. He is talking about a course on Vietnam that he designed for first-year students at Indiana University in the 1980s:

"That fall I went into the freshman course aware of the pitfalls of lecturing and prepared to try some alternatives for large-group instruction. But because I was new at it, I had to learn about the special opportunities afforded by a lecture hall filled to capacity. At the beginning of the semester, I did not suspect that a large audience could generate such a degree of emotional intensity. There were days when the energy crackled through the air, as though someone had wired all the students and plugged them into the main current (16-17)."

As in Kroll's course, excellent lecture sessions raise questions in ways that inspire students to seek answers together. In doing so, they also can provide a shortcut for the student through the thicket of detail and argument that presenters already know by heart. The diagrammatic presentation of material may be one positive feature of lecturing. Another may be the student's relief at having an expert rescue him from mistakes a novice might make along the way—and also save him the irritation of having to spend his precious time listening to the opinions of classmates rather than a clear presentation of known facts and issues. Most important, though, is the possibility of being "plugged in" to a learning process that is shared in reaching understanding.

Finally, then, lecturing should be defended because a narrow view of learning as mainly self-generated misses the fact that the vitality of the educational exchange in college often derives from the engagement of the student with a professor who is himself involved in a lifetime of discovery. In an eloquent essay on the teaching/learning nexus, Robert Scholes, former president of the Modern Language Association, makes this point. We "teach in order to learn," he says. "Organizing a course, preparing a lesson, we become acutely aware of what we need to know to do that job properly—and of the gap between that blessed state of perfect knowledge and our actual situations. Teaching drives us to learning—and to the learned who can help us join their company" (124).

I suspect that Scholes's definition of college teaching best matches the understanding that drives many teachers in American higher education—whether they lecture or conduct discussions. They believe that it takes a knowledgeable, trained, passionate professional who has committed to a career in real classrooms to instigate and direct what students do there.

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