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ABSTRACT

The 10 editions of the newsletter provide a forum for the sharing of research findings, observations, instructional strategies, and opinions on subjects pertaining to college level teaching and college faculty. Multiple subjects are discussed in each issue and are often based on recent books. Among the topics covered and the issues in which they are located are the following: (1) suggestions as to what constitutes good college teaching, cheating, and textbook evaluation (January); (2) ideas to create cooperation and participation within the classroom, coursework and student learning, and part time faculty (February); the use of writing in student learning, writing across the curriculum, and problem solving (March); the nature of scholarship, diversity, and developmental change in students as they progress through the college experience (April); cooperative learning and college teaching, handouts, and academic integrity (May); faculty vitality, small group instruction, and the problems with and proper use of crib sheets (June/July); faculty development, science instruction, and a checklist of questions for teacher preparation before the semester begins (August/September); survey results of irritating behaviors of both students and teachers, concept mapping, and the use of quotes (October); required reading assignments, student self-esteem, and effective thinking (November); and eliminating unnecessary vagueness in instruction, the syllabus, and instructional evaluation (December). (GLR)

The Teaching Professor

VOLUME 4 Numbers 1-10, January 1990 - December 1990

The Teaching Professor

Volume 4, Number 1 January 1990

What is Good College Teaching?

by Neil Williams, Eastern Connecticut State University

What is good college teaching? The question is usually answered by those who deliver it — the professors. This past spring, the Faculty Development Committee at Eastern Connecticut State University sponsored a panel discussion by six students (representing a cross-section of disciplines) on the issue of classroom excellence. Thirty-five faculty members attended.

While these students' opinions and insights are certainly less than scientific in their derivation and development, they should not be taken lightly. The recipients of our instruction, much like the people who watch a variety of television shows, know what they do like, what they don't like, and more importantly, *why* they feel the way they do. The panel discussed the following factors which they felt would contribute to excellence in the classroom.

Students Identify Seven Factors

A. *Pride.* Teachers should take pride in their profession and in their position at the college or university. At times, faculty convey the message that they are "too good" to be at a place like a state university with "inferior" students, or that they are basically researchers and have more important things to do than teach. Lack of pride among faculty leads to negative attitudes among the students.

B. *Simplicity is the Keynote to Elegance.* The more a professor either purposely or unintentionally complicates the subject matter, the less respect the students seem to have for that teacher. The best professors present their material in clearly thought-out sequences and highlight the important points in a way the students can understand. The best teaching clarifies rather than confuses.

C. *Preparation.* Good teachers prepare for class in advance and deliver well-organized presentations. The students said they can spot teachers who aren't prepared or don't "know their stuff" inside of three minutes. A professor who is "blowing smoke" with extraneous or unrelated material puts students to sleep. Good professors teach a class for the full 50 minutes. Good professors also don't use the same set of yellowed notes semester after semester, but continually update their presentations with current research and information.

D. *Care.* The teachers who are the "best" are the ones who show that they really care about the job they are doing and the welfare of their students. A teacher who is conscientious about instructional responsibilities (such as reading and grading papers in a timely fashion, making judicious use of audio-visual materials, and not relying largely on student presentations for course substance) shows the kind of care that impresses students. *Good* teachers are also *cheerfully* available to students outside of the classroom and at times not just limited to their office hours.

E. *Writing.* "Life is not a multiple choice exam," said one of the students. Teachers who take the time to create and grade essay-type exams earn high marks from their students. Students see multiple choice exams as an easy way out of evaluation responsibility. Essay exams are a much better means, the students say, to determine what they have actually learned, and students also indicated that they study differently (and less intensively) for multiple choice exams. The panel also said that many courses should, but do not, require "term" papers, which students see as a means for improving their writing skills.

F. *Standards and Expectations.* The academic standards and requirements of the faculty should be high. The more faculty members expect and demand from their classes, the more they will get and the more their students will benefit. The students who really care about their education *want* the professors to make the courses more demanding.

Courses should not be taught "down" to the students, but rather, students should be pushed to produce more and better work. The teachers who do this — as well as assist and coach their students on *how* the work should be done — get the best reviews. Deadlines should be established and adhered to except under the most unusual circumstances. There should be no "gentleman's C's." Students should have to earn every grade they get.

G. *Substance.* One of the most interesting aspects which emerged from the two-hour discussion was that "good teaching" was not so much a matter of *style* as it was of *substance*. Jokes, "magic shows" and clever techniques don't need to be part of the instructor's repertoire.

A teacher who is prepared, concerned, caring, clear,

up-to-date, demanding, and firm will be a good teacher — even if the presentation of the material is not "entertaining." A good teacher reaches students with a quality commitment to the "details" of teaching.

Up with Teaching!

Editor's Note: Throughout this year — more by accident than plan, we must honestly admit — we've been including items on valuing teaching, how we as faculty can better appreciate the complexity of what we do and how we can encourage our institutions to better support instructional efforts. Consider the following as a continuation of this emphasis.

Picture this: an art gallery, filled with 35 photos, posters and three-dimensional figures, all about college teaching. You see photos of familiar faculty and read their printed answers to the question *"What makes teaching good?"* You see posters with other ideas and insights about teaching. You see brightly colored pictures of students and hear what they think makes good teaching.

Too good to be true? No, you're not imagining things. You're touring an exhibit hung in the art gallery of Niagara County Community College last September. The exhibit was the brainchild of Ralph Klicker, Dean for Extended Learning at NCCC.

"The idea came to me while I was in the art gallery. I was thinking about teaching — that it is art, much like the paintings I was seeing. Gee, I thought, it sure would be neat to make an 'artistic display' of teaching. When I got back to my office I knew I wanted to do it, but I had no idea how."

Klicker decided he'd start by describing his idea to faculty at the college and asking them to help by answering the question raised above. Professor Larry Plant's insight (below) was one of the answers Klicker used in the exhibit. In addition he combed the literature for insights and ideas — several of which he gleaned from issues of *The Teaching Professor* — and drew on his own 13 years of teaching experience.

Art Adds Impact to Ideas

With materials and random ideas in hand, Klicker went to Al Ligammari, the graphic artist at NCCC. "He was really instrumental in making it happen. It was his idea to make the displays black and white, with only the pictures of students being in color. He actually hung the show as well."

How did it turn out? "Much better than what I thought. Wow! It was really inspirational and helpful and got faculty and students talking about teaching. There's always a bit of magic about good teaching and I think the exhibit really captured that sense."

Comments from faculty and students confirm this assessment. One instructor wrote, "This really helps me get my act together for the semester." Another: "The exhibit shows that we are all different but we all have the same aim ... to educate and enlighten."

College President Gerald Miller said of the exhibit, "It was a wonderful showcase of faculty wit and wisdom. It served as a catalyst for the year-long celebration of teaching excellence at NCCC." One student comment alone made the exhibit worthwhile. "I want to be a teacher but I am a little shy. When I read what makes a good teacher I feel that I can do the job."

But the story does not end here. Klicker is available to consult with others who might be interested in making an exhibition like this happen on their campuses. He has prepared a two-page handout with details on how this exhibit can be brought to other campuses and/or how he might assist other faculty and institutions in using an activity like this to further value teaching. Write to him at Niagara County Community College, 3111 Saunders Settlement Road, Sanborn, NY 14132-9460.

"The day-to-day problem with classroom teaching is not pedagogy. The content and method are masterable by anyone who posses reasonable intellectual competence and serious intent. The real problem is in the mastering of energy, motivation, enthusiasm and vitality. To generate excitement about 'Pavlov's slobbering dogs' the 197th time you have introduced the topic taxes knowledge at 5%, method at 5%, with the remaining 90% squarely in the realm of theater."

—Larry Plant, "Up with Teaching" Exhibition, Niagara County Community College, New York

The Teaching Professor

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How to Test the Texts

Editor's Note: How do we select textbooks? Generally we take a look at a number of available ones, maybe talk with some colleagues about what they use, and then try to find one that "marries" well with what we currently teach or plan to teach in the course and the level of the students.

In other words, we don't use clear-cut criteria. We don't submit potential texts to a systematic and organized review. We certainly don't consider texts in light of research on how students best learn from printed text.

That is why we are pleased to be able to share with you the first (and only, to our knowledge) text selection checklist that incorporates these concerns.

Textbook Selection Checklist

Please circle the appropriate response.

I. Coping with difficult words / concepts

1. Is italic or bold type used? Y/N
2. Are new concepts listed or defined? Y/N
3. Does a glossary appear within the textbook? Y/N
4. If yes, is it a 'running glossary' found in the margin? Y/N
5. Are footnotes avoided? Y/N

II. The use of instructional aids

6. Does an overview or summary precede each chapter? Y/N
7. Is there a summary at the end of each chapter? Y/N
8. Is there an advance organizer used at the beginning of the chapter? Y/N
9. If yes, does it provide a useful framework that helps clarify the ideas ahead? Y/N
10. Are behavioral objectives available for use? Y/N
11. Are additional questions inserted into the text? Y/N
12. If yes, do they adequately alert readers as to what information follows? Y/N
13. Does the author, by the use of instructional aids, indicate to the reader what material is important? Y/N

III. Typographical organization

14. Are the heading levels and consistent within the chapters? Y/N
15. Do major headings appear in lower case? Y/N
16. Are subheadings written in the form of a question? Y/N
17. Are spatial cues effective for scanning? Y/N
18. Do chapters provide cues which are simple and clear to follow? Y/N
19. Is the text 'chunked' to promote more efficient reading? Y/N

IV. Presentation and appropriateness of illustrative materials

20. Are the illustrations used (i.e., pictures, diagrams, cartoons and photographs) relevant to the text? Y/N
21. Do the illustrations help to explain the text? Y/N
22. Do the illustrations provide crucial information for understanding the text? Y/N
23. Does the illustrative material have captions that are clear and relatively self-explanatory? Y/N
24. Is illustrative material positioned nearby to the text reference? Y/N
25. If yes, is it referenced clearly? Y/N
26. Does the author use a variety of materials (including flow charts, algrithms and information mapping) to maintain appeal? Y/N
27. If yes, are clear instructions given as to how to use these illustrative aids? Y/N

How do we select textbooks? ... We don't use clear-cut criteria. We don't submit potential texts to a systematic and organized review. We certainly don't consider texts in light of research.

V. Provision for self-testing

28. Are questions provided at the end of each chapter to test understanding? Y/N
29. Is the questioning aimed at an appropriate level? Y/N
30. Are there answers available for the reader's use? Y/N
31. If yes, is information available which pinpoints the answers within the text, e.g., paragraph 3/page 67? Y/N

VI. Follow-up

32. Does the author provide additional notes and/or suggestions for further reading at the end of each chapter? Y/N
33. If yes, does the author discuss the relevance of the reference? Y/N
34. Are the follow-up materials appropriate for introductory students? Y/N

VII. Clarity of the author's intent

35. Does the author suggest to the reader how the textbook should be read? Y/N
36. If yes, does the author provide different instructions for beginning students and more advanced readers? Y/N
37. Do the intentions of the author 'link together' well? Y/N
38. If yes, do the cues provided by headings/subheadings assist in making the text more cohesive? Y/N
39. Is there a logic and a consistency in the page and chapter design? Y/N
40. Would the majority of readers find the reading required easy? Y/N

Checklist Score: total the number of Yes responses. Maximum Score = 40.

From: Hemmings, Brian, and Battersby, David. "Textbook Selection: Evaluative Criteria." ***Higher Education Research and Development.*** **Volume 8, No. 1, 1989. Reprinted with permission of the authors.**

It's Time to Begin Once More ...

Editor's note: Last August-September we inaugurated the teaching year with an article offering "advice and ideas" for the first day. That prompted the following comments from William Taylor at Virginia Tech, excellent advice with which to begin this term.

First impressions *do* count, and the fact is that you have only *one* time to make that impression. The main concepts can be summarized into *preparation* and *selling*. There are two adages that address each of the concepts that make the point even clearer. First, "Failing to prepare is preparing to fail." Second, "When nobody sells, something terrible happens. *Nothing*." Selling involves knowing the product, the customer, and the environment.

The main concepts can be summarized into preparation and selling. First, "Failing to prepare is preparing to fail." Second, "When nobody sells, something terrible happens. Nothing."

Start teaching the first day of the term! Let the students know that this topic is important and justifies attention every day of the term. If you prepare and sell yourself and the course the first day, you can place your course in the "favorite class" position that gets additional attention. If you wish to reward the students with some time off, give it to them when they really need it. Slow down the pace near the end of the term and let the students appreciate your interest in them.

My experience with students is that the first day of each term there is a feeling of *energy*, wanting to become a student again. Many faculty do everything in their power to squelch this feeling by wasting the first part of each term and then cramming the material into the last week of the term. Being different makes life easier on the student and makes you a better teacher.

"Probably the most violent and aggressive act that any person can do to other persons is to invade their minds with ideas and twists of meaning which disturb the comforting security of things known and faith kept. Yet this is what I, as a teacher, am required to do."

–R.W. Packer, "Breaking the Sound Barrier: A Dramatic Presentation," in *Teaching in the Universities: No One Way*

What about Cheating?

Students cheat — anywhere between 40% and 90% of them, depending on the study. The major reason, they say, is so they won't fail in a course. But that isn't the *only* reason.

A study by Elizabeth Nuss documented that 21% of 146 students surveyed at Indiana University, Bloomington, said they cheat because "no one ever gets punished for it." Certainly their peers don't make them accountable: in the same study, only 3% of the sample indicated that if they saw a student cheating they'd report the incident.

Maybe that's understandable (though certainly not excusable), given the extraordinary strength of peer pressure undergraduates feel. But what about faculty? How are we responding to this problem of epidemic proportions?

Margaret Jendrek points out that "rarely" have faculty reactions to academic dishonesty been studied. She sees that as disturbing for two reasons:

- "Faculty members have the opportunity to structure situations to either increase or decrease the likelihood of academic dishonesty."
- "Faculty members' attitudes and responses to academic dishonesty may create a climate that either fosters or inhibits academic dishonesty."

To rectify this lack of focus on faculty reactions, Jendrek surveyed 743 faculty at a public, Midwestern university with 16,000 students; 45% returned the questionnaire. Jendrek was interested in whether or not the presence of a clear institutional policy on cheating encouraged faculty to take the designated action against cheaters. The institution in the study had such a policy.

Large Gap between Policy and Practice

Despite the fact that 60% of the faculty responding indicated they had witnessed students cheating on exams, only 20% took follow-up actions in compliance with the stated university policy, which in this case meant arranging a meeting with the student and department chair to determine the kind of follow-up action required.

Faculty in this survey seemed more inclined to take the matter into their own hands: 65% reported penalizing students who cheat — most commonly by giving them a zero on the examination exercise. That leaves a significant percentage completely ignoring the issue.

Percentages in the Nuss study were not quite so discouraging. There 26% of the faculty indicated they would warn the student, but not change the grade, and only 1% said they would ignore the matter. Note that both these studies rely on faculty reports of what they do. Neither studied the actual action faculty take.

What about the faculty inclination to take matters into their own hands — confirmed by the Nuss study where 60% took action independent of others? Is there any problem with this approach? Jendrek thinks so.

"Faculty members who handle the situation in a one-on-one fashion serve consequently as judge and as juror; no impartial hearing takes place." Moreover, since no one reports offenders, those who repeat are in effect allowed to "cheat" their way successfully through an academic program.

Faculty in the Jendrek study ignored instances of cheating for a number of reasons. Sometimes they were not 100% sure the student was in fact cheating — and "wandering eyes" are difficult to document. Sometimes they were uncertain of the official policy or had put in their syllabi individual polices at odds with the university policy. In other cases they expressed a certain "helplessness": the class was large, or calling one student on one instance would not help the university-wide cheating problem.

Communicate the Value of Academic Integrity

These faculty reasons are understandable. But they're not excusable. If we are to get any handle at all on this problem, we must stick together in enforcing university policies and affirming the importance — indeed *necessity* — of integrity in the academic enterprise.

In discussing her findings Nuss writes "The results suggest that we may indeed be communicating the value we place on academic integrity. The message may imply that the academic community is willing to tolerate minor indiscretions or academic shortcuts, but that planned, deliberate, blatant behaviors are not acceptable." Is that really the message we want to convey to students?

It's fine to stay we ought to stick together, enforce policies and encourage academic integrity. But that's not enough. We need to offer ideas, strategies and insights. For that purpose we turn to two resources which can contribute to faculty efforts in this area.

In their article, "How to Halt Student Dishonesty," Avinash Singhal and Patti Johnson have constructed a table which identifies various forms of cheating as it occurs on homework, exams and lab reports. The table lists ways of detecting the various cheating behaviors and, most importantly, proposes means to prevent the particular brand of academic dishonesty. The table is generic, and so it suffers from a certain oversimplification, but as a ready reference, as a way of empowering us to act and giving us options, it ought to be among our instructional resources.

Recently the Higher Education Administration Series has published a volume, *Academic Integrity and Student Development*, which covers academic integrity from multiple perspectives. Particularly useful is chapter III, "Strategies to Prevent Academic Dishonesty." (The authors recommend, for example, numbering tests as a way of ensuring that no copies are stolen.) This short book also contains some intriguing case studies which can be used to explore definitions of cheating with colleagues and students.

Nuss, E. M. "Academic Integrity: Comparing Faculty and Student Attitudes." ***College Teaching*** **(Summer 1984): 140-144.**

Jendrek, M. P. "Faculty Reactions to Academic Dishonesty." ***Journal of College Student Development*** **(September 1989): 401-406.**

Singhal, A., and Johnson, P. "How to Halt Student Dishonesty." ***College Student Journal*** **(Spring 1983): 13-19.**

Kibler, W. L., Nuss, E. M., Paterson, B. G., and Pavela, G. ***Academic Integrity and Student Development: Legal Issues and Policy Perspectives.*** **The Higher Education Administration Series, 1988. (Order from: College Administration Publications, Inc., Box 8492, Asheville, NC 28814. Cost: $9.95.)**

The Classroom Territory

Sometimes we like to think evolution has moved us far and beyond our animal ancestors. Sometimes our behaviors bespeak a much closer kinship.

Take, for example, the territorial claims made by students and teachers in the classroom. For all intents and purposes, instructors don't need to assign seats. By the second or third week of class, students have settled into seating patterns that more or less remain intact the rest of the semester. Notice the annoyance — or maybe it's discomfort — when the seat is taken by someone else or when the familiar rows are transformed into a circle. Students are creatures of habit.

And so are faculty. We use space in the classroom in predictable, observable ways.

Witness, for example, the legendary senior professor at a certain institution, who conducted senior seminars around a rectangular table while standing behind a podium at the head of the table. Generations of students participated in a "game" unbeknown to the principal participant. When the seminar was going well, the instructor would venture out from behind the podium, reducing contact to a single hand. When students observed him in this position of vulnerability, they would vie to raise challenging and provocative questions because "good" ones got the professor to move back behind the podium. And if yours made him retreat, you received kudos and commendations from your colleagues.

Or take the editor of this newsletter, whose students pointed out to her that *only* on the day she returned exams did she position herself against the chalkboard, hands extended on either side, holding onto the chalk tray. From that back-against-the-wall position she argued why option c was the best answer and how no credit could be given for b, even though half the class had chosen that option.

The Messages in Our Behavior

Territorial behavior in humans, as in other species, is not just predictable. As these examples illustrate, it contains other important messages as well. It says something about how the creature feels about the situation.

When faculty discuss their duties in the classroom, even when we think about those responsibilities quietly to ourselves, we seldom consciously acknowledge the *vulnerabilities* inherently a part of teaching tasks. But our behavior indicates that we know. Why the podium? Oh yes, it does put the notes within comfortable visual range. But it also puts something substantial between us and the students. It protects us. makes less of us visibly vulnerable and gives us something to hang onto.

These things are small, irrelevant details? Don't kid yourself! Little things mean a lot.

How do faculty "intimidate" students? Sometimes verbally, but more often nonverbally, in the language of territoriality. We move out to them, cross the *boundary* between our space and theirs, stand over them, look down at them. These powerful moves establish our authority and reinforce our ability to control. Used without sensitivity and insight they can dramatically change the climate for learning in a classroom.

Strategies for Managing the Environment

We need to understand and use this language of the classroom because it gives us effective and constructive ways of managing the environment. Examine your behavior in class. Where do you locate yourself when asking questions? Back against the board? Behind the podium?

Try moving out to the students. Take a relaxed and informal stance, but make them "feel" your presence, to emphasize that you are seriously committed to getting an answer. Your openness before them conveys your vulnerability in the exchange.

Consider territorial behavior from another perspective. Animals work diligently to establish and maintain their territories, and certainly we too go to great lengths to "mark" our property lines. Why do we claim such a measly space for ourselves in the classroom? Why don't we expand our boundaries, thereby making our presence and influence more strongly felt throughout the classroom? It will help us better control disruptive behaviors.

But there's a more important effect. As we roam throughout the territory students get a chance to observe us up close. They experience our enthusiasm and concern at close range, almost larger than life, and so all the more memorable and convincing.

The objective is certainly not to make of the faculty animal an aggressive, unconquerable beast. Those of us who are brutes need to be tamed. But most of us are not. However, if we want or need to take a stronger stand in the classroom territory, we can do that only if we become aware of the classroom as territory and learn to make the moves that establish our presence and purpose among a group of equally territorial beings.

The Teaching Professor

Volume 4, Number 2 February 1990

Getting a Class to Gel

by Linc. Fisch

I've long been aware of a process that seems to occur in almost every course I teach. For lack of a better term, I've called it "gelling."

Suddenly there comes a day when one is conscious that the wariness of strangers thrust together by the vagaries of registration has eased. Students and teacher begin to work together toward a common goal. They become comfortable with each other. Students begin to ask questions spontaneously. They respond more readily to teacher queries.

It's a moment that arrives without fanfare, and when it does, a good feeling develops. Much more important, learning is enhanced. The course is on a roll. I'm sure a lot of teachers have similar experiences.

Gelling often occurs about a third of the way through the term. When it shows up earlier, I'm *delighted*. When it's delayed, I'm *frustrated*. On the rare occasions when it doesn't occur at all, I'm *devastated* — both students and I hang on, hardly able to wait until the parting of our ways. All of us are thankful that the academic calendar provides an honorable no-fault means for severing our unproductive and apparently incompatible relationship.

Until recently, I thought that gelling was a group phenomenon. The class comes, perhaps not consciously, to some sort of common sense of moving forward together. But my friend Rebekah Womack suggests an alternative: what I've termed gelling may be a composite of individual processes that she calls bonding, a natural process between student and instructor.

In an article, "Of Student Bondage: A Poke at Professional Distance," she says, "[Bonding] isn't quite so tender as what occurs between parent and child in moments following labor and delivery. But it has its own transient wonder. It isn't superglue. But it's strong enough to cement an alliance for a semester."

How does the academic bonding process begin? What conditions foster it? Rebekah thinks that often it is initiated when an instructor is able to call a student by name: that's one early indication of recognizing and respecting a student's individual identity.

Bonding continues to build through brief conversations with a student before or after class, or by a chance meeting in the corridor. I find it supported when I provide students with useful pointers on how to deal efficiently and effectively with course material.

I often distribute and discuss a one-page summary of these, "How to Succeed in Mathematics with the Least Amount of Effort." (That title, of course, is calculated to draw immediate attention; students soon get to the part which emphasizes that a lot of effort, applied wisely, is still required.) Bonding intensifies during the give-and-take of working one-on-one in office conferences.

Usually, I take time on the second or third day of a course, after enrollment has stabilized a bit, to go through an introduction exercise. Students chat in small groups and then introduce each other to the rest of the class, telling some interesting things about that person. I'll admit that it's an unusual process in a math class, but I find that it puts all students more at ease, increases their willingness to speak out and contribute in class, helps all of us to call each other by name, and ultimately leads to enhanced learning.

Bonding: A Proactive Approach

Bonding is nurtured by finding things of common interest between student and instructor. Sometimes this can be a matter as simple as reading students' T-shirts. "Ah, Popo Agie University — are you from Lander, or have you traveled in Wyoming recently?" I ask a student sporting a shirt emblazoned with a university seal and a moose. She responds, and we are off and running in a conversation about hiking and camping in the Wind River Mountains.

It helps to be somewhat familiar with the territory. "Jeff Amburgey," I call from the roster on the first day of class. "Are you from the Montgomery County Amburgeys or the Knott County Amburgeys?" It turns out to be Knott County, and we take the conversation to Carr Creek, then up Wolfpen and Dead Mare Branches, and finally discover that I've stayed overnight in his great-grandfather's log cabin.

Bonding often evolves from willingness to disclose things about one's own self and interests. My references to photography, my comparing academic perfor-

mance with performance in the concert hall or on the gridiron, and my comments on exploring hidden areas in the Red River Gorge all return dividends when students here and there pick up on things that match their own interests. It extends our interactions and relationships.

What works *against* bonding? Maintaining Perfect Professional Distance (PPD) -- as Rebekah calls it. PPD keeps both physical and mental space between teacher and students. It avoids subjective feelings that detract from uniformity. It "simplifies" the classroom process by restricting it to straightforward instructor-controlled activity. PPD is the intellectual version of Don't-Touch-the-Student. It's the embodiment of the Familiarity-Breeds-Contempt Axiom.

I think that bonding and gelling are things that happen naturally with students if only given a chance. The teacher can provide the opportunity by establishing personal openness and responsiveness. Given a conducive climate, the students take it from there. To be sure, forcing such a climate won't work very well, and it can even be counterproductive.

I've suggested to Rebekah that the *alternative* to PPD is ALC — Appropriate Learning Closeness. Establishing ALC is done one-on-one and with the class as a whole. It varies, of course, according to individual and collective acceptance and response.

I don't encourage bonding because it's comfortable or fun. I encourage it because I think it can be an important condition that enhances student learning. Teachers have to touch students' minds — and hearts.

Linc. Fisch authors the regular column "Chalkdust" for The Journal of Staff, Program and Organizational Development, *in which an earlier version of this article appeared.*

Research Focus

What Do Students Think of All Those Part-Timers?

The ratio of part-time to full-time faculty continues to rise, despite proclamations of doom from the prophets among us. According to these prognosticators, the presence of so many part-time faculty will sooner or later have dire consequences for our students. Two Canadian researchers decided to test that hypothesis by asking 356 students about their perceptions and experiences with part-time faculty.

They started by asking if students preferred being taught by full- or part-time faculty. Result: 50% had no preference, while 26% were unaware of the faculty member's status. Of the rest, 18% preferred full-time and 5% part-time. Researchers thought maybe the large percentage who were unaware of faculty status were freshmen, but more than half of the "unaware" group were upper-division students.

Another question elaborated these findings. Researchers asked students taught by part-time faculty to rate their competence relative to full-timers. Result: 44% of the students rated the part-timers about the same. Only 10% rated them as lower or much lower.

As might be expected, part-time faculty received low marks in two categories: "familiarity with the university's administrative procedures" and "regular office hours." Who's to blame for these deficiencies? Probably both the part-timers and the university. Administrative procedures are generally summarized in various publications available to part-time instructors or they can be discovered by instructors without much effort. On the other hand, it's difficult to hold regular office hours if you don't have an office.

The conclusions of the researchers: "Students do not perceive the presence of a large cadre of part-time faculty as entailing significant costs for their learning experience .... The findings caution against viewing the elimination of part-time instructors as a solution to the problem of improving university teaching. Of course, it cannot be concluded that such costs, if not perceived by students, do not exist." (p. 83)

Lundy, Katherina L.P., and Warme, Barbara D. "Part-Time Faculty: Student Perceptions and Experiences." ***The Canadian Journal of Higher Education*****, 19:2, 1989, 73-85.**

THE TEACHING PROFESSOR

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Participation in Large Classes

An impossible proposition? No, but a challenging one. We've tackled both topics in previous issues (large classes and lecturing in April 1988, participation peripherally in lots of issues, and substantively in September 1987). But if regular correspondence from faculty is any indication, the topics merit further consideration, especially together. Here are some suggestions and ideas. Consider them in light of your content area and your teaching style and realizing the inevitability of adaptation and alteration.

1. Plan participation activities. Most faculty don't. In small classes with 25 or 30 students interaction can be spontaneous and successful. Not so (at least not so very often) with 75, 100 or 200 students.

Putting a time limit on question-answer exchanges seems arbitrary and compromises the Socratic method — but it's necessary.

Decide as part of your preparation *when* you'll ask questions and *for how long*. Putting a time limit on question-answer exchanges seems arbitrary and compromises the Socratic method — but it's necessary. You can't afford to take up the time of 150 students just to make a point with one — at least not on a regular basis.

Moreover, planning to devote three five-minute segments to questions and answers makes the interactions manageable. Many faculty avoid opening up large classes to student participation for fear of having the student interaction run away with the rest of the period. This way the instructor can plan to stop the questions at a certain point — and succeed.

2. Use closed questions. Closed questions have a one- or two-word right answer — like, How many electrons in the third main level? or Who wrote "The Star-Spangled Banner"? They work well in large classes because the answers don't consume a lot of time. On the other hand, they aren't the kind of questions that stimulate a lot of mind power.

However, closed questions effectively break students out of the passive mode, especially if the instructor uses them to begin, as a way of reviewing and getting the class ready for new material. They work best when used in a group, fairly rapidly and with visible instructor energy. Think about them as a way of getting mental heart rates up, as a way to work the class.

Move out to the class, among your students .... Don't wait for hands to raise. Take any answer, even mumbled responses.

3. Don't make a big deal of calling on people. "Yes, you in the green shirt, no, not that green shirt, behind her, next row up, with glasses" slows down the questioning, makes it awkward and uncomfortable for everybody. Move out to the class, among your students. Call on people with direct eye contact or point in a general direction. Even if the student you've called on with a direct look doesn't answer, you can bet you've made him or her think about the question. Don't wait for hands. Take any answer, even mumbled responses. "I heard 32. That's right." Then on to the next question, to a new group of students.

4. Make better use of rhetorical questions. Used *properly*, rhetorical questions make students *think*. But most aren't used that way: they're buried in surrounding comments or answered in the same breath as they're asked.

Used properly, rhetorical questions make students think. But ... most are buried in surrounding comments or answered in the same breath as they're asked.

Put a moment of silence (at least) before and after each question. Give students some teasers. "Here's a question you need to think about." "I'd want to ask myself this question when I reviewed for the quiz." Rhetorical questions don't announce themselves as such. In other words, when you ask, students don't know "Are we going to have to answer this or not?"

Clearly rhetorical questions work less well in large classes, when no student ever has to answer out loud. If you don't make them talk, you can tease them with rhetorical questions. Make them think they may have to come up with the answer. Even if they don't have to, the question generates the desired mental activity.

5. Use student contributions in your lecture. If a student raises a good question during office hours, or if the TAs tell you about a question asked in a lot of the discussion sections, or if a student in a previous class asked the question, talk about the question and its answer in the lecture. "After class last week, one of you raised a really good question ...."

Yes, you might call this cheating, because it really isn't "participation" — but it does *approximate* the activity, with some of the same benefits. It shows students

that you listen to their questions and value them enough to answer, thereby encouraging them to raise other questions. It helps create an interactive atmosphere.

6. Consider a question box. Some faculty use them successfully in big classes. Bring the box to class, place it outside your door or rotate it through the lab sections. Encourage students to put questions in the box. Sometimes it's still hard to get them to use this device. One faculty member we know "primes the pump." He puts a question in the box, a good one which he praises and answers at length in class without acknowledging its source.

One faculty member we know "primes the pump." He puts a question in the box, a good one which he praises and answers at length in class.

Instructors who use this technique report that it saves them time because they can prepare good, clear, succinct answers. If questions can be put into the box anonymously, students afraid to ask in front of so many others still have an opportunity to get answers. (For a more elaborate version of this idea, see the "Writing Chemistry and Improving Instruction" in our April 1988 issue).

7. Be at ease and confident during exchanges. Don't look like you hate it, like it's agony. Look like you *love* it. Smile frequently. Be encouraging. Be in control. Don't belabor exchanges with individual students. Complete these exchanges after class.

Look like you love it. Smile frequently. Be encouraging. Be in control.

Encourage students to speak loudly and clearly by doing so yourself and making them do likewise. If a question is too softly spoken, ask across the room if it was heard. If the student looks as if he'd rather die than repeat it, ask someone near him to repeat the question. When somebody asks a good, relevant question, point that out: "Somebody just raised an issue everybody in this room ought to be thinking about."

In case you haven't noticed, these ideas and suggestions don't promote the kind of quality participation most faculty prize. But what prevents many faculty from doing better with large classes is their unwillingness to compromise, to see this setting as being different, requiring new, adapted strategies and techniques.

Yes, you can argue that large classes are not as easily conducive to learning as small ones. But certainly large classes where faculty attempt to interact with students are more conducive to learning than those with *no participation*.

Who's That Graduating from College?

Arthur Levine and Associates look at "demographic realities and opportunities" for the next decade in a new book, *Shaping Higher Education's Future*. They tell us something most of us already know.

Graduating classes will have fewer traditional college-age students. Between 1979 and 1986 numbers in that group steadily declined, for a 21% loss. We've had a small respite the last three years, when their numbers increased by 7%. However, the largest decline ever is upon us through 1992, followed by small increases until the end of the decade. By 1992 the number of 18-year-olds will have gone from 4,451,724 in 1979 to 3,109,095 — an overall decline of nearly one-third.

Most of us can't quote the numbers, but we've felt the effects as admissions operations gear up, as extended degrees and weekend colleges flourish, and as academic alliances build bridges to new student populations.

But sometimes the shift still catches us unaware. Levine recounts how it happened to him. "I was a brand-new college president. I was about to award my first college degree — to a student who had missed commencement because of an illness. As I walked into my waiting room to meet her, I realized this was a very special occasion, more special than I ever imagined. Her grandmother was already there. I chitchatted with the woman while waiting for her granddaughter to arrive. About ten minutes into the conversation, the woman asked if she could have a picture of me handing her diploma to her. My first college degree was given to a 73-year-old woman." (p. 3)

From: Arthur Levine and Associates, *Shaping Higher Education's Future: Demographic Realities and Opportunities, 1990-2000*. San Francisco: Jossey-Bass, 1989.

Research Focus

Coursework and Learning: Measuring the Larger Outcomes

"Testing how much students learned as undergraduates without looking at what they took in college is a bit like examining the fuel efficiency of a college motor pool without knowing how many dump trucks and compact cars there are in the fleet." So observes Jim Ratcliff, director of the Center for the Study of Higher Education at Pennsylvania State U. and director of an Office of Educational Research project. The project uses test scores and transcripts from graduating seniors at six different types of institutions to explore patterns of coursework and how they affect student learning.

Early in their review of transcripts, Ratcliff and associates discovered "students at a single college or university do not experience the same education." In their samples, the transcripts of 100 graduating seniors contained between 3,900 and 4,300 courses, or from 778 to 1,597 different courses. This means that the percent of coursework in common among five students or more ranged from 15 to 36%. Conclusion: "It means little to make generalizations about the quality of education at the institution *as a whole* when students present such a wide *diversity* of educational experience on their transcripts."

The researchers are quick to point out that this diversity is to be expected. After all, students major and minor in a variety of programs. But they tend to share a general education core of required courses, typically completed in the first two years. One wouldn't expect them to share more than 50% of coursework — but researchers found they share considerably less.

Several related and equally interesting findings emerged as the researchers studied patterns of coursework. They found that development of *general learning abilities* doesn't have a one-to-one relationship with traditional academic boundaries of departments and disciplines. For example, not all quantitative reasoning development happens in math courses; those skills can also be acquired in courses such as statistics, accounting or test and measurement in education.

Further proof of the *arbitrariness* (and one is tempted to say *irrelevance*) of curriculum boundaries can be found in the intended patterns of coursework. Courses are assigned numbers, at levels that signify different degrees of knowledge and skills suitable for students at different times in their academic careers. Some courses have prerequisites. Institutions publish catalogs, class schedules and program descriptions that outline these intended patterns of coursework.

But do students partake of educational offerings in the prescribed order? *No*. How many times do seniors end up taking required courses during their last semester? How many sophomores are taking 400-level courses? These researchers contend the actual patterns of coursework have quite a different effect when the courses aren't taken in the order intended.

The preliminary findings of this research project should cause us to question a number of basic assumptions about the effects of education on students.

- We need to teach recognizing that students don't share a common curricular experience at our institution.
- We need to be less quick to assign responsibility for certain kinds of learning to particular departments and courses.
- We need to rethink our coursework intentions for students in light of their actual experiences of our curricula.
- We need to ask questions about *what* is being measured, *how* it's being measured and *what that tells us* about how we should change the experiences of undergraduates at our institutions.

From: "Determining the Effect of Different Coursework Patterns on General Student Learned Abilities: A Working Paper" by James L. Ratcliff and Associates. Center for the Study of Higher Education, Pennsylvania State U.

Teaching Aid

Note-Swapping

The practice sounds sinister, of dubious ethical merit. In fact, it's one of *53 Interesting Things to Do in Your Lectures* proposed by Graham Gibbs, Sue Habeshaw and Trevor Habeshaw in a small book published in Great Britain (and difficult — and costly — to obtain in the States).

The swap in this case occurs at the end of class or after each major content chunk. Give students a few minutes to trade notes with someone nearby. The exchange lets students see what somebody else saw as the main points, how they differentiated between major and minor points, what drawings and details they chose to include and what facts (if any) they missed or misunderstood.

The benefits are even greater if you give students the opportunity to chat about what appears in each other's notes — and *why*. Encourage them to discuss material noted by one student but not by the other. They should talk about proportion and detail. What are the main ideas? They should identify written material that may seems incomplete or unclear. After the discussion, allow them an opportunity to correct, revise and otherwise clarify notes, as well as a chance to raise questions about disputed issues with the the entire class.

The swap takes time, probably the last 10 to 15 minutes of the period, if all the benefits are to be real-

ized. It probably can't be used every day — but what a good idea for every now and then! Faculty regularly complain about the way students take and use notes. Students regularly report they haven't been taught how to take notes. The swap idea teaches students something about note-taking *and* forces them to review course material before they've had a chance to forget what it means.

Forum

Metaphors and Other Instructional Images

Besides serving to adorn and vivify language, metaphors and other figures of speech help us with a number of important intellectual tasks. Howard Pollio notes that although "most of us would probably draw a sharp line between poetry and practical problem-solving ..., the history of creative human thinking offers a quite a different view. Some of the most important scientific, philosophical and technical insights were first achieved in the form of a poetic or imaginative image."

He offers two examples: Brunel, who solved the problem of underwater construction by observing how shipworms tunnel in wood, and Einstein, who reported that seeing himself as a passenger on a ray of light holding a mirror in front of him contributed to early formations of the theory of relativity.

Allen Schlesinger writes of analogies, but uses a metaphor to effectively explain how poetic images make unfamiliar ideas easier to understand. "Analogies are temporary scaffolds useful in the construction of a concept." They allow us to approach the concept, to build up to it, to get close enough to see it clearly and thereby understand it.

David Deshler sees metaphor contributing to still another intellectual task. "It is one way that human beings have of sorting out perceptions, making evaluations, expressing feelings and reflecting on purposes. It is the stuff with which we make sense of our world."

He continues by explaining how metaphors make it possible to describe aspects of reality beyond our direct experience. "They have the capacity to expand the scope, range, relevancy, accuracy, and applicability of a perspective. Their nonliteral comparisons allow us to break imaginative boundaries and to express the heuristic power of thought."

And just how might these general functions of metaphor translate usefully for the college educator?

Deshler offers an interesting answer. "The metaphors with which we describe ourselves and our enterprise offer fascinating insights into higher education organizations as living, changing cultures that reflect values and aspirations."

Pollio is more explicit. "They reveal the often implicit bases on which we think about important issues, such as the nature of the university or what we might have in mind when we reflect on teaching and learning."

Deshler is right about the "fascinating insights." He found over 300 metaphors in transcripts from 83 interviews with administrators, faculty and department secretaries at a large state university. He cautions that those metaphors should be considered "as unintended cultural artifacts (interviewees didn't know of Deshler's interest in metaphors) from a single university reflecting a particular period of organizational history, and as not necessarily generalizable to other campuses." But references to faculty as "top notch," research as "cutting edge," students as "warm bodies," administrators who offer "lip service" to teaching, and the P and T process as "a football game where the rules change every quarter" sound familiar, and they offer insights into feelings and assumptions many of us share.

Metaphors Generally Negative

Deshler found that approximately 75% of the metaphors in those transcripts were negative. He offers two theories to account for this disproportion.

"Human beings in general tend to be much more colorful in describing their complaints than their blessings." On the other hand, this negative orientation may be symptomatic of a deep dissatisfaction and frustration with life in our academic communities. "When viewed this way, one can detect a hunger for appreciation and recognition, professional survival, a sense of community or shared fate, empathy and compassion for others, active participation in governance, and academic responsibility."

What can we learn from the collected metaphors, analogies and images used to describe teaching and teachers? That's a question of interest to us and — we hope — to you. Pollio asked grad students and professors at the U. of Tennessee-Knoxville for "clichéd expressions" concerning the classroom — and quickly had a list of 130. In a subsequent issue we'll share how Pollio grouped those figures of speech and what he thinks they reveal about teaching and learning.

In the meantime, we'd like to persuade you to share with us the images and metaphors you use to describe your role as a teacher, the activities of instruction and the processes of learning. Send them to the editor (address on page 2) by March 31, 1990. We'll report them and invite you to join us in discovering some "fascinating insights."

Pollio, Howard. "Practical Poetry: Metaphoric Thinking in Science, Art, Literature and Nearly Everywhere Else." ***Teaching-Learning Issues*** **(Fall 1987): 3-17.**

Schlesinger, Allen B. "How Do I Teach You? Let Me Count the Ways." ***Creighton University Window*** **(Winter 1986-87): 15-19.**

Deshler, David. "Metaphors and Values in Higher Education." ***Academe*** **(November-December 1985): 22-29.**

The Teaching Professor

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Writing to Learn

by Robert Kraft, Eastern Michigan U.
Teaching Professor Advisory Board

"The discipline of translating thoughts into words and organizing these thoughts logically has no equal as intellectual training." John Fielden wrote this long ago in a *Harvard Business Review* article (May-June 1964). The article is still part of required reading in my graduate writing class.

As a writing teacher for 20 years, I'm intrigued by this remark. So I regularly ask my grad students if they agree with Fielden. So far all of them have agreed. (Maybe they've guessed my opinion and want to get in line, but some cite mathematics as comparable training.)

As for me, I believe that what I truly gained from my own undergraduate days resulted largely from the papers I wrote. I'm convinced that if I had listened to fewer lectures, taken fewer notes, and written more papers, I'd have gotten more from those days.

As a consequence, my literature students write responses to everything they read. I know they won't *think* unless they *write*.

Not all of them like it. It's easier, they say, to take lecture notes and exams. But if you're with me so far and believe that teaching is defined as *enabling* or *causing learning*, shouldn't we ask students to write more? Of course. But I think there are two primary reasons why we don't.

Two Reasons Why We Don't Teach Writing

One is that "writing to learn" is an idea not really fixed in the minds and purposes of teachers. We think of writing only as communication, writer to reader. But that is writing only in its later stages — revised writing tailored to a specific audience. Initially, writing is *self-discovery*. Composing is highly focused thinking. You'll frequently hear writers say they don't know what they think until they write. Once they've discovered what they think, they revise to suit an audience.

A second reason may be that teachers don't feel confident — or perhaps competent — to respond to student writing. Many feel they must "do the English teacher thing" to every piece of student writing. That usually means enforce all writing conventions in red, make marginal comments and god-like summary judgments at the end. Such a response is not always necessary. And sometimes not even a good idea. Constant judging starts to inhibit.

I certainly understand the first reason and empathize with the second. But if writing is central to learning and "has no equal as intellectual training," shouldn't it be a constant activity in the classroom?

I think so, and while my students write finished papers — "finished" to me means revised to suit readers -- I don't require that for *everything* they write. Instead, I ask them merely to read their written responses to one another as part of the collaborative learning structure of my class. These responses are their solutions to content problems I give them. And the responses substitute for quizzes because they assure me my students are keeping up and *thinking* constantly.

We English teachers celebrate when we learn that extensive writing is going on in classes other than our own. Many of us have felt that the burden of teaching writing should not be ours alone. We can't do it alone.

Teach Writing to Generate Thinking

But "teaching writing" — with all that it implies — need not be your emphasis. Writing to *generate thinking* may be your central purpose. Wilbert McKeachie, author of *Teaching Tips* and perhaps the country's best-known authority on college teaching, tells us our students must be actively thinking if they are going to learn. They even should be thinking about *thinking*.

To that end, there must be writing. That writing may be just for discussion starters. It may be free responses to any kind of issue, as a way to get students engaged. Or it may be just turned out and turned in, read to classmates, kept in a journal, or sailed away on paper airplanes.

Naturally, I hope all students will revise and rewrite for readers too. And as often as possible.

I congratulate the professors presented here. (pp.5-6) They've found unique ways to bring writing to the center of their classroom activity. Their students cannot avoid learning — even when they don't want to. And sometimes, we know, they don't want to.

Finally, I want to underscore the remark by geology

Professor Webb in his article in this issue: "My primary goal with the essays is to promote writing, learning, and critical thinking, rather than obtain material for grading." Hear! Hear!

"When I Was a Student ..."

I hear the phrase often. It's usually inserted somewhere in the middle of a diatribe about "those students in my class" who do all manner of inconceivable things. They expect three excused absences, and more for unusual circumstances (like three exams in one week). They expect instructors to cover *all* all the readings in class or do *all* the homework problems on the board. They question grading policies and arrogantly assert the validity of their poorly informed opinions. "Why, when I was a student, we'd never think of ..." doing what students do today.

It's not the nostalgic reminiscing I object to. It's the underlying assumptions. Face it, most faculty end up in higher education because they liked what happened to them in college. They made it through the system successfully — unlike other students in college then or now. But I think many faculty teach assuming the students in their classes are like them. "I didn't care about grades in college. I wanted to learn," reported a faculty member recently. "I didn't like classes where all the emphasis was on grades." He was in my office because his students had petitioned the dean demanding that this faculty member be required to tell students his grading policy. I laud this faculty member's concern with learning, but to teach today assuming students are not interested in grades is to court disaster. So is teaching assuming that students love to read, that they understand that learning to solve problems is hard work. that they know and respect our intellectual heroes.

But I'm also bothered by the arrogance I hear in faculty assertions about themselves as students. Were they really as respectful and well-rounded as they remember? I have memory flashes every so often that certainly make me wonder about myself.

We could argue for some time about what faculty were or were not in their student days and still not get at the issue I find troubling. It is the assumption that students in college *should* be like these possibly idealized students of yesteryear, that students today are something of a lesser breed.

Is that what we really believe? I don't think so, which is not to imply that all student behaviors are acceptable. Some of cause outrage. Many students we have in class today are less well-prepared, less well-motivated, less well-convinced that a college education is anything more than professional certification. But that certainly does not make them inherently inferior. It just makes them harder to teach.

And that's what I really hear faculty saying when they complain about students. The arrogance is there, but I think it's a cover for the *anxiety* and *frustration* many faculty experience in their classrooms.

The tried and true instructional methods of yesteryear work much less effectively with these students. Their success and failure is much more closely tied to what happens to them in the classroom than it used to be. For those of us with long years of teaching behind us, we see our jobs changing and we see ourselves ill-equipped to handle the changes. Consequently, we complain about students and maintain the problems are with them. Responsibility for solutions, however, falls squarely on our shoulders. It's time we got honest and faced up to the challenges.

For Your Further Information ...

We provided information in our December issue about the National Faculty Exchange Program, which prompted Assistant Dean of Instruction Steve Collins at Modesto Junior College to write us about the Community College Exchange Program. He indicated that this organization has over 400 participating colleges, including institutions in Canada and Australia. For information write: Community College Exchange Program, Attn: Gary Filan, Director, 3910 E. Washington, Phoenix, AZ 85034.

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The Problems with Problem-Solving

Look at the curriculum and instructional activities in any number of technical fields and you quickly discover that problem-solving skills hold a central position: instructors do problems in class, students do problems at home and on tests. Given this importance, a definition or description of the activity should be easy and forthcoming. Donald R. Woods offers one, in "How Might I Teach Problem-Solving?": "Problem-solving is the mental process that we use to arrive at a 'best' answer to an unknown or some decision, subject to a set of constraints." (p.55)

The definition seems straightforward enough, but what skills does this "mental process" require? Woods offers an impressive list:

- a knowledge base pertinent to the content of the problem;
- the ability to identify, locate, obtain, and evaluate missing information;
- the ability to learn on one's own;
- such thinking skills as analysis, creativity, ability to generalize and to simplify and broaden perspectives;
- such attitudes as motivation and perseverance;
- ability to cope with ambiguity, fear, anxiety, and procrastination;
- interpersonal and group skills;
- communication skills; and
- an awareness of how one thinks, one's personal preference or style when learning or processing information. (p.55)

In other words, teachers who seek to develop their students' problem-solving abilities assume for themselves no small task.

Unfortunately, faculty tackle that challenging task not mindful of student approaches and with instructional strategies of limited effectiveness. For example, students today love to memorize, and many are really quite good it. They try to learn how to solve problems by memorizing the problems and their solutions. They do well if instructors give them problems "just" like the ones they did in class or assigned on homework, but on related problems requiring skills of analysis and application they falter, and quickly it becomes the instructor's fault for using "tricky" problems. In other words, students might be able to solve all manner of problems but still be poor problem-solvers.

"Problem-solving is the mental process that we use to arrive at a 'best' answer to an unknown or some decision, subject to a set of constraints." But what skills does this mental process require?

Related to students' propensities to memorize is the problem of having them solve and see problems solved. Woods uses some of his own research to document that in one four-year engineering program students observed professors working more than 1,000 sample problems on the board, solved more than 3,000 homework assignments, worked problems on the board themselves, among other related experiences — and still "showed negligible improvement" in problem-solving skills. "If they were given a related but different problem situation, they were not able to bring any new thinking or process skills to bear." (p.59) In other words, doing problems doesn't seem to make that much difference in the development of the skill in question.

Woods also looked at the types of problems instructors select and found that "by and large" they were "not acceptable media for improving problem-solving." He and colleagues classified each problem according to the level of intellectual activity as suggested by Bloom's taxonomy. Even at the junior and senior levels, still roughly half the problems were at the lowest level, knowledge and comprehension. Across the whole curriculum only half (roughly) of the problems developed the higher skills of analysis and synthesis.

How should problem-solving skills be taught? Woods offers a number of suggestions:

Help students see the structure of our discipline. This tackles the tendency of students to memorize. They focus on the details, the specifics, because they don't see the larger picture. Giving them a more global perspective helps them put isolated problems in "places" that can then be related to other problems.

We need to continually ask students questions like, What have you done so far? Why have you chosen to proceed in this manner? ... What are the possible next steps? And we need to find the "I don't know" response unacceptable.

Require students to memorize tacit knowledge. Closely related to the preceding suggestion, the advice here is encourage students to begin developing the intuitive, experiential knowledge that comes with time in the territory. Woods uses an example from his own field. "If someone calculated the velocity of water pumped in a pipeline to be 500 meters per second (m/s), my experience as a chemical engineer would cause me to question this. I think the number should be in the range between 0.5 and 15 m/s, usually between 1 and 2 m/s."

Students have no experiential base, nothing that guides them to where in the "ballpark" an answer ought to be. Tacit knowledge, as Woods illustrates in his example, helps immeasurably. It gives them general rules of thumb that help them avoid stupid mistakes. He recommends having students memorize, since they have limited experience with the content.

Focus on problem-solving as a skill to be taught. "Problem-solving is a body of knowledge embedded in cognitive and behavioral psychology that can and should be taught." (p. 66) Most of us teach assuming students will get the problem-solving skills by *osmosis*. Some may, but many will not. All develop the skills more efficiently and more deeply, if they are taught *explicitly*. This may mean instructors will have to make their knowledge and understanding of problem-solving processes more explicit. It also may mean something much more practical, like, as Woods suggests, grading one assignment for the process used and not for the final answer derived.

Increase our students' awareness of the processes that they use. He believes we contribute to their lack of awareness when, for example, we present them with a diagram or problem solution. We never mention the five failed attempts, the process we went through arriving at the final version which we present in class. We present and students see "a very sterile and emasculated version of the mental processes used." (p. 61)

No one questions the importance of problem-solving skills ... in college and throughout life. ... We need to explore the most effective ways of developing these skills in our students.

We need to continually ask students questions like, What have you done so far? Why have you chosen to proceed in this manner? What have you done previously that relates to what you are trying to do now? What are the possible next steps? And we need to find the "I don't know" response unacceptable. Woods suggests other strategies for making students aware, such as having them explain to each other what they are doing.

No one questions the importance of problem-solving skills, not only for success in college, but for use throughout life. Given their importance, we need to explore the most effective ways of developing these skills in our students. This well-researched and referenced article makes an important contribution.

From: Donald R. Woods, "How Might I Teach Problem-Solving?" in J.E. Stice, ed., *Developing Critical Thinking and Problem-Solving Abilities*. New Directions for Teaching and Learning, no. 30. Jossey-Bass, Summer 1987.

Tips for Productive Classroom Climates

1. Deal with disruptive students individually, not in groups.
2. Deal with disruptive students in person, not over the phone.
3. Deal with disruptive students outside of class, not during class, where your credibility is on the line.
4. When talking to disruptive students, focus on how the behaviors they are engaging in affect you when you are teaching.
5. Do not bluff when asked a challenging question.
6. Set policies and procedures at the beginning of the course — and stick with them throughout the course. Change policies and procedures that don't work, yes, but not until the next time you teach the course.
7. Do not foster a "me against you" attitude.
8. Do not deal with students when they are emotional.

"How different would our universities be if students did not pay their tuition until five years after graduation, and then only in proportion to their success in life?"

—Albert Shapero, Ohio State University, in *The Lakehead University Teacher*

Writing in Health

by Martin Turnauer, Radford U., Virginia

I adapted a letter-writing format as the basis of interaction between myself and the students in my general education personal health classes. Each student writes a letter to me on stress, nutrition/weight control, drugs, and sex. I respond to each letter personally by a computer. All information remains confidential.

All the final drafts are preceded by a preliminary draft which I do not read. However, this process ensures that the final typed letters have had at least one revision/proofing.

I have designed the assignment in a way that builds student trust. Students start with the letter on stress. They readily identify with and are reasonably comfortable communicating about stress. This letter is followed by nutrition/weight control, which is a health dilemma we all experience, and culminates with the feelings and experiences the students share in the drugs and sex letters.

Grading focuses on the mechanics of writing — grammar, clarity of expression and spelling — rather than content, so that the students communicate honestly without concern for content grades. The letters, which are surprisingly well-written, show the developing trust between the students and professor.

The time spent orchestrating a personal health class based on communication is time-consuming but rewarding. In the sex letter, which the students thought was the last dialogue between us, 30% (61) of the students wrote that they were sorry to end the exchange. My response to students always identified the alternatives available to enhance and better their lives. Most of my responses simply reinforced behaviors which the students recognized and actually wanted to do on their own.

During the final exam period, the students reviewed all their letters, examined my comments, and then identified which proper health behaviors they now practice. They also listed the health behaviors which they did not change and why they didn't feel the need to make those changes. This letter organized all their personal health letters into one overview.

On one hand, I agree with the students, in that I too am sorry to see the class come to an end. However, on the other hand, with three sections of Personal Health in a single semester and a total of 201 students each writing four letters to me, the responses required exhausts me. But it does allow me to know students in a large group individually.

Reactions by students like Amy encourage me to continue to experiment with this framework for presenting and implementing proper health behaviors: "Reading, writing personal letters and having you answer those letters confidentially, gathering information and sharing that knowledge with our classmates makes one say, Hey, well, now I've got to do something about it. And I have!"

Writing in Geological Sciences

by Thompson Webb III, Brown U.

One trick that I discovered that helps me include writing assignments in undergraduate science courses is to make each one brief (2 to 4 pages). Students learn to write by writing and revising. In contrast with long term papers, short assignments are less painful for students to produce and require less time from me for reading, commenting and grading. By appearing within the course in a timely fashion, such assignments allow the students to participate in discussing and critiquing ideas central to the course.

These assignments thus complement and supplement the lectures, and stimulate active involvement by the students in learning the material. By assigning three to six of these short essays, I can use my comments on the first two or three essays to communicate my writing standards to the students. I often allow students to revise their first essay or two in light of my comments and class discussion. I can then enjoy watching them grow and improve their writing and thinking in response to my comments.

My primary goal with the essays is to promote writing, learning, and critical thinking, rather than to obtain material for grading. The grades are a byproduct of the exercise, but, for well-recognized reasons, the grades are a powerful way to communicate my standards to the students. After discovering how hard the students would work on even the short assignments, I have made the essay grades 25% of the final grade in the course. That tells them something of the importance that I assign to clear writing, and rewards them for their hard work.

Part of my motivation in promoting writing within my courses is to make use of my research skills in teaching. As a researcher I am spending much of my time writing articles and editing my own prose and that of colleagues. These skills are important in my career, and I have become good at them. By including a significant amount of writing in my course, I was able to share these skills with the students and to help them to prepare for being effective in their own careers. My work as a researcher thereby contributes directly to my teaching.

Writing in Psychology

by Brian N. R. Baird and Dana D. Anderson, Pacific Lutheran U., Washington

Some years ago, in the midst of one of our traditional term-end gripe sessions about how poorly our students write, we realized that we had sown the seed for this bitter harvest in our own syllabi: a due date for term papers at the *end* of the term. We recognized that

when we were students our writing never benefitted from this due date, since evaluative feedback was minimal (a letter grade) and opportunity to make use of it delayed (until the *next* semester's end). It was, we admitted, graduate school with its multiple drafts and repeated feedback that really taught us to write. Realizing this, we concluded that our students need to experience the same critique-and-redraft method we needed.

We start the redrafting approach in the syllabus. It contains three due dates: the first, a third of the way into the term, requires submission of an initial topic proposal and preliminary bibliography; the second, several weeks later, requires a completed, typed first draft; and, at least a week before the course ends, the revised, final draft is due. Proposals and first drafts are returned to students within a week, leaving plenty of time for revisions. The final draft deadline gives us time to grade and return papers while students can concentrate on preparing for exams.

Because our approach is novel for most students, it is stressful for them. To counter this, the syllabus includes a packet of support materials that identifies writing resources and provides a rationale for the assignment. It also provides a list of common writing problems and a checklist indicating the specific dimensions we will use to evaluate the first draft and grade the final. This checklist must be completed and signed by an outside reviewer chosen by the student and turned in with the first draft.

The outside reviewer, usually another student, makes our job easier by catching the grosser spelling and grammar errors. More importantly, the common human tendency to reject criticism out of hand is lessened when peer's and professor's critiques agree.

In our critique of the initial draft, we lean heavily on the checklist. It both simplifies and standardizes our feedback. It also identifies the student's existing strengths. Without this encouragement, a student's first encounter with detailed critical feedback can be devastatingly discouraging. The checklist also identifies areas where the final draft can improve upon the first. Such improvement is a major criterion for the paper's grade. Clear feedback on the initial draft makes grading the second straightforward and relatively quick, significantly reducing our end-of-semester stress. More important, the final grade is more intelligible to students, who know then not only "what they got" but *why*.

One of the most rewarding things about the approach is that it seems to produce a shift in student's perceptions. The common undergraduate belief that term papers are humiliating ordeals changes as students begin to see assignments as a series of problems that, with practice, they can learn to solve. Some students even view their papers as an opportunity to consider and manipulate ideas. This shift in perception is often a revelation to students (and can be to faculty too).

We believe the benefits of this approach (including the fact that one actually gets to read some decent student writing at term's end) justify its cost in faculty time. We encourage our colleagues to consider teaching their students, as they learned themselves, to *re*write.

Research Focus

Classroom Experiences of New Faculty

In an effort to discover how new faculty members cope with career pressures, Jim Turner and Robert Boice interviewed (on a variety of different occasions) 100 of them at a large state university. The interviews covered a wide range of topics associated with the academic profession. Of particular interest are some findings relating to teaching experiences.

Most of these new professors reported spending 16-20 hours a week preparing lectures and other course materials. Of special note was the pattern shared by the subset of the group (relatively small) who do not fare well in the classroom.

According to researchers, "They reported feeling highly motivated but noticeably insecure in their own knowledge and skills." (p. 54) They spent 35 hours per week preparing — generally amassing large sets of lecture notes. As for reports of their performance in the classroom, the researchers note, "They came across as stiff, formal, and generally uncomfortable." (p. 54) These new faculty described themselves as "humorless," "non-supporters," "content-driven." They also reported fostering little student participation.

When confronted with less than positive student evaluations, the new faculty were often angry, distraught and confused. Then they blamed students, as "an ill-prepared and unmotivated lot, incapable of responding to high academic standards." (p. 54)

All new faculty regardless of teaching performance reported similar general areas of concern and perceived areas of weakness. In rank order, the three most frequently mentioned were:

1) "adapting to the appropriate pace and level of difficulty for the students";

2) "feeling professionally overspecialized, while not having a well-rounded knowledge of their own discipline";

3) "having trouble establishing an appropriate professional demeanor in their relationships with students." (p. 54)

These findings raise an interesting question: How different are new faculty from the rest of us?

From: "Experiences of New Faculty" by Jim L. Turner and Robert Boice, in *The Journal of Staff, Program and Organizational Development*, Summer 1989, pp. 51-57.

The Teaching Professor

Volume 4, Number 4 April 1990

Rethinking What It Means to Be a Scholar

This month the Carnegie Foundation for the Advancement of Teaching will present at the American Association for Higher Education conference a new report, The New American Scholar, *co-authored by Carnegie Foundation President Ernest Boyer and Senior Fellow Eugene Rice. Gene Rice, a member of the* Teaching Professor *advisory board, spoke with the editor about the contents of this report.*

TP: I gather from the title of the new report that you have some problems with current definitions for scholarship.

Rice: Yes, we do. Since World War II, with the success of the sciences and the development of our graduate schools, the definition has become narrower and narrower, so that now we understand scholarship to mean publishable research on the cutting edge of a discipline. We sense a great dissatisfaction with the way scholarship has evolved and believe the time is right to rethink what it means to be a scholar. We'd like to reframe the whole debate.

TP: In what ways?

Rice: Well, first I need to be very clear that the model we are proposing does not devalue research. The advancement of knowledge is a necessary and essential part of our educational enterprise: it must go forward. But the advancement of knowledge isn't everything there is to scholarship. We describe in the report a four-part model, with the *advancement of knowledge* as one of the quadrants.

TP: Tell us about the other three.

Rice: In addition to the advancement of knowledge, we see a scholarship involved in the *integration of knowledge.* Those of us in higher education need to have the capacity for synthesis, and this has gotten lost, given our current view of scholarship. Currently our most common integrator in higher education is the textbook. But we fear that with the increased emphasis and value placed on specialization many faculty have lost the capacity to integrate, especially the way it needs to occur in undergraduate education.

We also propose that notions of scholarship should include the *application of knowledge.* We see a hierarchical relationship between theory and research on the one hand, and practice and application on the other. In this relationship practice is seen as derivative: it comes out of the research and is therefore secondary. We propose a more even relationship between the two — one in which we recognize and appreciate the wisdom of practice. We need to take practice more seriously and benefit from the relationship between the two.

Finally we propose a component of scholarship we call representation. Here we argue for a *scholarship that supports teaching.* We believe teaching needs to be embedded in these larger notions of scholarship — that it needs to include the advancement, integration and application of knowledge, but scholarship for teaching that has an integrity of its own needs to be recognized and honored.

TP: Can you elaborate a bit more on this scholarship for teaching, which I suspect will be of particular interest to readers of this newsletter?

Rice: Yes, we think it has three dimensions. The scholarship for teaching has a synoptic capacity, that is, it has the ability to draw the different strands of a field together in ways that provide coherent meaning. It's a matter of placing what is known in context or making connections between the knower and the known.

The second dimension relates to what Lee Shulman calls "pedagogical content knowledge." We know that educational jargon is a problem, but we want to talk about a form of scholarship that transcends the split between the *intellectual substance* (the content) of a field and the *process of teaching.* We believe significant work in this area is taking place in the disciplines but it needs broader recognition and acceptance.

Finally, the scholarship of teaching takes into account what we know about learning. There is a body of knowledge dealing with how students learn, and faculty need to take that literature seriously. They need to understand how students make meaning out of what is said in the classroom and done in the laboratory.

TP: So where does this view of scholarship leave the teaching vs. research debate?

Rice: Far behind, we hope. We see that debate as largely unproductive, a dead end that leads us nowhere. We don't see our approach as the only alterna-

tive, but we propose it largely to get the current debate rephrased.

We think we must abandon our current teacher-scholar model. It poses impossible standards that very, very few of us can meet. This broader conception of scholarship allows the individual faculty member, departments, even institutions to identify their strengths and focus on them.

At the institutional level we think there's a crisis of purpose. Institutions have mission statements that outline goals and objectives that move in one direction, while the dominant concept of scholarship pulls in another. Faculty are confused and dispirited. Also, colleges and universities find themselves trying to be what they are not — and falling short of what they could be. Our institutions realize their diverse missions only if faculty are committed to and rewarded for scholarly work congruent with the fundamental purposes of our colleges and universities.

We need lots of different kinds of higher education institutions in this country. If we broaden our conceptions of scholarship, we open up the possibility of these different forms of scholarship interacting and enriching each other.

TP: This all sounds wonderful, music to the ears of faculty who do value teaching and have long proposed that the complexity and difficulties intrinsically a part of effective instruction be looked at as "scholarly" endeavors. But how do we make it happen? How can we support and further the model you propose?

Rice: The key lies in reworking the reward system — getting faculty and administrators to recognize other forms of scholarship as legitimate. Faculty need to work on ways of documenting and assessing these alternative forms of scholarship. Administrators need to see the connection between scholarship and mission. Most college and university mission statements fit much more comfortably with these broader notions of scholarship.

I'm particularly excited about the implications of these notions of scholarship for faculty. It just provides so much more flexibility. With our current model, the only way you move and grow professionally is to specialize further. You can still do that with this model, but you have other alternatives as well. Presumably you could emphasize different forms of scholarship at different times during your career, giving yourself so much more variety and challenge across a career in higher education.

TP: How can we acquire a copy of this report?

Rice: The full report will be available in late spring from the Carnegie Foundation for the Advancement of Teaching, 5 Ivy Lane, Princeton, NJ 08540.

An Interesting Idea ...

Here's an interesting way to think about how successful you are in the classroom. When the class starts, there's an imbalance of expertise. You know lots about the subject matter; the students know little. As you teach the material, a transfer takes place. The difference between what they know and what you know is reduced. That doesn't mean you know less, only that they know more and you have less you can teach them. The closer the balance, the greater your success.

Does the balance ever tip to the other side? Does the teacher ever run out of material, have no content left to teach? Occasionally — and it's anxiety-provoking when you feel like it's about to happen.

I remember a particularly bright, curious and highly motivated student I had early in my teaching career. I suggested references in the library, and he looked them up. I asked tough philosophical questions, and he came in to discuss them. I raised issues, and he considered and resolved them. I felt *exhilarated*: here at last was the student I'd always wanted to teach.

But I also felt *threatened*. I didn't realize just how much until the end of class, when he came to compliment me on the course. "I really learned a lot in this course. Do you teach anything else I could take?" The "no" came out more quickly and emphatically than I wanted. But I just couldn't have him in another class. I'd already taught him everything I knew — or so it felt.

"Teaching is informing, forming, and transforming."

— Unknown

The Teaching Professor

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Developmental Theories, or What Happens to Students in College?

Scenario: An instructor of religious studies in a beginning course on world religions offers some historical criticism of the Genesis account of creation. A student responds belligerently, asserting the inerrancy of the Biblical account. After class he confronts the instructor and accuses him of heresy. The student asserts he knows what the truth is and will not be shaken in his beliefs by some liberal professor.

Scenario: A humanities instructor is discussing Oedipus Rex in class. She offers a variety of interpretations for the final scene, where blind Oedipus marches before his people to exile. She asks students what they think. As the discussion continues, it becomes clear that the instructor thinks some interpretations are more legitimate than others. A student objects, asserting that everybody has a right to her or his own interpretation of the work. All those interpretations are equally valid and students ought to be allowed to decide whatever they want to about the conclusion.

The faculty teaching these courses and others would benefit from knowledge of some of the developmental theories that attempt to explain the kind of intellectual growth that typically occurs during the college years. As students grow and mature their intellectual orientations change. As with other kinds of growth, intellectual development isn't always easy.

Students tend to arrive at college believing that knowledge is a "collection of discrete facts." This makes learning nothing more than getting the "right" information from the professor and text.

The first and best known studies of intellectual development were completed by William Perry and associates at Harvard. Over 100 students were interviewed in two separate four-year studies conducted during the late '50s and early '60s. Perry's work has been criticized because virtually all of the subjects in his studies were male. The intellectual development of females has now received attention via the work of Mary Belenky and associates. Joanne Kurfiss has skillfully integrated the works of both these research groups into the four major developmental categories, named by each of the respective research groups and summarized here.

Level 1: Dualism/received knowledge

Students tend to arrive at college believing that knowledge is a "collection of discrete facts." This makes learning nothing more than getting the "right" information from the professor and text. Kurfiss puts it succinctly: "Dualistic thinkers do not realize the degree to which the information presented in a course or textbook is selected, interpreted, and systematized. They view the professor as the authority, presenting factual knowledge known to all experts in the discipline." (p. 53)

Gradually students come to realize that opinions "differ in quality. Good opinions are supported with reasons."

These are the students we have in class who want to know the "right" answer and by all means don't want to be confused with other possible answers. Kurfiss concludes with an important distinction: "Rather than reflecting a personality characteristic like 'passivity' or 'vocationalism,' their resistance to critical thinking reflects a legitimate developmental quandary as they encounter a world far more complex than they have realized." (p. 53)

Level 2: Multiplicity/subjective knowledge

Courses like those in the humanities and social sciences confront students with numerous unknowns and conflicting theories and opinions. Gradually students come to accept these ambiguities, and that marks their passage from level 1 to level 2. However, "when no absolute truth exists, one 'opinion' is as good as another." (p. 54) So students at level 2 get angry with professors who claim the validity of one idea over another. "Students at this level recognize complexity but have not yet learned how to navigate its waters." (p. 54)

Level 3: Relativism/procedural knowledge

Gradually students come to realize that opinions "differ in quality. Good opinions are supported with *reasons*." For Perry the term "relativism" captures the sense that "what counts as true depends on (is relative to) the frame of reference used to evaluate the phenomenon in question." (pp. 54-55)

Belenky and associates found that females employ a somewhat different technique for sorting through opinions. "Connected knowledge [their term for it] attempts to understand the reasons for another's ways of thinking. The students undertakes a 'deliberate, imaginative extension of one's understanding into positions that initially feel wrong or remote.' " (p. 55)

Level 4: Commitment in relativism/constructed knowledge

In the end individuals take positions and make commitments, even though the definitive "right" answer is unknown. Constructed knowledge, as Belenky and associates call it, "integrates knowledge learned from others with the 'inner truth' of experience and personal reflection."

Constructed knowledge ... "integrates knowledge learned from others with the 'inner truth' of experience and personal reflection."

Key to Understanding Student Reactions

Progress through these developmental sequences is not always an orderly progression that parallels the four (or so) years in college. Students (like people in general) mature at different rates and to different degrees. Perry observed students who stopped growing, sometimes pausing for as much as a year. Some regressed; others escaped or avoided the process.

Development theories can help faculty understand student reactions and put them in an appropriate context. Kurfiss explains: "Understanding students' progressive transformations as knowers enables faculty to appreciate the gradual and often painful path students must tread to recognize the uncertainty of what was once truth for them and to acknowledge legitimacy in perspectives that differ from their own." (p. 67)

As the world of certainty begins to unravel for students, as the safe comfort of always knowing for sure starts to wear thin, and as the dilemma of having to decide becomes real, their fear, frustration and anxiety may vent itself in harsh comments, confrontative questions and belligerent proclamations. At that point they don't need us to counterpoint in kind. They need gentle nudges ("enticements," Kurfiss calls them) and temporary hideouts that will help them move to less secure but more realistic intellectual postures.

As the world of certainty begins to unravel for students, ... their fear, frustration and anxiety may vent itself in harsh comments, confrontative questions and belligerent proclamations.

Ed.'s note: There's been a great deal of very complex and intriguing research and theory in the area of developmental theory. Interested faculty ought to delve into the topic more deeply.

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Take Note ....

From time to time we've considered the art of lecturing (April 1987, May 1987, August/September 1989, November 1989) and, to a lesser extent, the art of note-taking (March 1987, August 1987, February 1990). Yet sometimes a brief comment can help us put things into perspective, perhaps better than a long discussion. So we offer these observations by Judy Smith, from her article "Lay That Pencil Down or Stop Me Before I Note Again" (St. Norbert College *Beacon*, December 1989, p. 4):

"Interesting phenomena take place in college classrooms around the country when students pick up pencils to jot down for posterity the pearls of wisdom that drip from distinguished professors' lips. In most instances, the physical act of placing pencil to paper causes the brain to react in two ways. First, the vocal chords are disengaged: one cannot write and speak at the same time. Second, the critical processing centers of the brain slide, click, or thunk into neutral: one cannot write and think at the same time."

That One Negative Comment

I recently spent an hour on the phone with a faculty member talking about one negative evaluation received from a class with 15 students in it. That's right — one negative response.

The other comments the faculty member described as "OK" and "really quite favorable." But one student did not like the class. "You're too opinionated and you don't respect the opinions of students. Why do you think Kafka's ideas are so much better than ours? The tests were not what you said they would be and no other teacher at this college has such an unfair and inflexible grading policy."

Serious criticisms, to be sure, and the faculty member labored throughout the conversation to discover what had happened between himself and the student to cause these harsh assessments. He thought he knew who the student was and did remember a heated discussion in class about Kafka during which he "got on a student's case" when it became clear the student hadn't read the work being discussed but still wanted to venture opinions. And there was another student who had rewritten a paper and not gotten a better grade on the second version. But opinionated? "I just can't understand that. I have them read all sorts of things. They've got to be exposed to different viewpoints. I don't endorse one over another."

After about thirty minutes, I made a "radical" suggestion. "Gene, have you ever considered that this may not be a legitimate criticism? Maybe the student is wrong. How come no one else in the class described you as opinionated?" The faculty member quickly agreed, but then continued to anguish over this one negative evaluation. Only after repeated queries did he read one or two of the favorable assessments which were way more than mildly positive.

Focus on the Positive

If this were the first time I'd had a conversation like this, I could ignore it, but it isn't. Many of us do focus (excessively, I'm tempted to say) on the negative comments about our teaching. I'm no exception. I vividly remember the student who told me to my face that people like me "should never be given the chance to influence student minds." I also remember some of the compliments, but they're not burned on my mind like the criticisms. They don't follow me around months, even years after the class is over.

Why do these often isolated and many times undeserved criticisms have a way of haunting us? I suspect it's because teaching requires us to expose ourselves, forces us to be *vulnerable*. When we teach we reveal things about ourselves, how we view the world, what we value, how we behave, and what we believe about ourselves. Students can and do challenge who we are; the process is rarely painless.

The negative comment (or comments, if it's one of those classes) does (or do) merit careful consideration — but they must be put into context, measured against all other comments from this and all other classes. They may or may not be fair criticisms. Even if they legitimately describe the experience of one student, we should not conclude that it was the experience of all others, in all our classes, across all those years of teaching.

Does it matter if faculty get preoccupied with the negative comments? Yes. I've seen faculty members change their opinions of themselves as teachers based on two or three isolated negative comments. I've seen the quality of teaching in a classroom decline because the faculty member can't get past what a few students said about this class the last time he taught it. I've seen faculty members become cynical and negative toward all students because of the reactions of a few.

We need to toughen our hides and take those negative comments. If after consideration, after consultation with colleagues and maybe other students, we decide the criticism is due, so be it. Now, let's work on making the appropriate changes. If after the same careful consideration we come to the opposite conclusion, then leave the comment and move forward, remembering the favorable ones. ●

Student Evaluation Results: Responding with Reason

The number of institutions using student evaluations of faculty instruction continues to rise. The number of institutions with reliable, valid and constructive evaluative practices continues to remain low. Faculty concern about evaluation activities remains high. The complexity of the issues makes them difficult to resolve.

As one reads through the objective, but intricate research findings that explain how and why evaluation contributes to personnel decisions and improvement initiatives, one is impressed by the need for *translators* — persons who will summarize the myriad of sometimes conflicting data, persons who will assert the practical implications of research results.

As one listens to faculty, with their bold, emotional, but largely uninformed assertions about the student evaluation and its outcomes, one wishes for the *voice of reason* — the thoughtful, rational response, the calm, collected vision of the problem and its solution.

If dialogue about student evaluation continues to be an issue for your department or campus, consider both the work of a *translator* and *a voice of reason*.

William Cashin, director of the Center for Faculty Evaluation and Development at Kansas State U., "translates" the vast corpus of work on student evaluations into 34 concise and readable recommendations which cover the system of evaluation used and the form, as well as the administration and interpretation of results.

He recommends, for example, using "multiple sources of data about a faculty member's teaching if you

are serious about accurately evaluating or improving teaching." He suggests "to obtain reliable student rating data, collect data from *at least ten raters*." If you want the data to be "representative," it must be collected from at least two-thirds of the class. If you want to make generalizations about the overall effectiveness of an instructor, you want to "sample across both courses and time." If you're interested in helping your department or university use evaluations more constructively, this resource can help to accomplish that objective.

The voice of reason belongs to Kenton Machina, a philosophy professor at Illinois State U. Listen to what he says about negative student comments: "It simply will not do to assume that what the students say about everything is true, even when the students in question are mature graduate students, or to dismiss everything the students say, merely because they are non-majors or freshmen." (p. 20)

In further describing the requirement that faculty "be prepared to interpret the results ... in an intelligent manner," Machina explains that "when students complain that the reading materials assigned were rather more difficult than they would have liked, and that the course was more demanding than it should have been for a course outside the students' major fields, I think that means the course stretched them intellectually, and I take the student complaints to be a *positive* comment." (p. 20)

Personality and Effective Teaching

He also addresses, with reason, the concern of faculty about the role of "personality" in unduly influencing evaluation outcomes. "I think that those who use this belief against student evaluations have not thought things through sufficiently. Even when we ask the students to answer questions about more or less straightforwardly factual matters, such as whether the instructor came to class regularly prepared, we ultimately want to find out how educationally effective the instructor was. Keeping this in mind, there is no reason to expect personality to drop out of the picture, since certain kinds of personalities will be educationally more effective than others, working with a given set of students." (p. 21) Doing away with student evaluations does not eliminate the effect of "personality" on learning outcomes.

Machina concludes: "Most students in my experience are overly generous in their evaluations of their teachers, despite those few who stand out in my memory as being unashamedly nasty. We need to listen to these folks with a wise and understanding ear. If we do, putting aside our insecurities and hurt feelings when they do not fully appreciate all that we have tried to do for them, we will learn much." (p.22)

William Cashin, "Student Ratings of Teaching: Recommendations for Use." IDEA Paper No. 22, January 1990. Center for Faculty Evaluation and Development, Kansas State U. Copies are available for $1.00 from the Center, at 1615 Anderson Ave., Manhattan, KS 66502. Payment must accompany orders.

Kenton Machina, "Evaluating Student Evaluations." *Academe*, May-June 1987, 20-22.

It's Not Like It Used to Be

When did you attend college? Late '50s? Early '60s? And you lived in a dorm, worked during the summer, but not during the school year, had taken a college prep curriculum in high school, were 18 when you started, attended a college or university where male students outnumbered females and minorities numbered a handful. Right? Or pretty close? Statistics from the '50s indicate this was probably a pretty typical college experience.

Statistics today indicate that what it was like then bears little or no resemblance to what it is like now for college students. Just in case your notions of the typical college experience aren't keeping up with the times, Aubrey Forrest highlights some of what's changed between 1955 and 1985:

- The percentage of college students older than 25 years of age increased from 20% to 40%.
- The percentage of female students increased from 34% to 52%.
- The percentage of freshmen enrolled in at least one remedial course went from near zero to 35%.
- The percentage of freshmen who expected to work at least part-time while in college grew from a small percentage to 40%.
- The percentage of all college students attending college part-time grew from 23% to 42%.
- The percentage of college graduates who took more than four years to complete a degree rose from 30% to 55%.
- The percentage of full-time college students who live on campus and are in the 18- to 22-year-old range fell from a majority position to 17%.
- The percentage of racial minority college students rose from less than 5% to 18%. (However, between 1975 and 1982, 29% more blacks graduated from high school, while black enrollment in college decreased by 11%.)

So, it's not like it was when we went to college. These changing student populations have large implications for the way we teach and the way they learn. We need to keep reminding ourselves of that.

Forrest, Aubrey. "Managing the Flow of Students through the Higher Education System." *National Forum: Phi Kappa Phi Journal.* Fall 1987, 39-42.

"I think of a class as a kind of magic space where we are set off for 50 minutes from the ordinary concerns of life to concentrate on the issues before us."

— J. Dennis Huston, Professor of English, Rice U., 1989 Council for the Advancement and Support of Education Professor of the Year

Thoughtful Practitioners

We regularly report research findings relevant to teaching and learning in higher education. That's because we believe research ought to affect practice: what we know about how students learn and teachers teach ought to make a difference in the way we conduct classes.

But we haven't been all that forthcoming with specific suggestions for individuals: How do you decide what to do about the findings, based on what you teach and in what setting you teach it? To be quite honest, we'd never given it much thought.

That, however, was before an article in the November 1989 issue of the *Phi Delta Kappan*. The article asks those of us concerned with the influence of research on practice to "keep in mind the image of the thoughtful practitioner: one who can intelligently evaluate research in education, reconcile that research with practical knowledge, and use artistry in taking the context into consideration." (p.214)

In other words, research results don't warrant automatic implementation — not before they've been looked at critically. That means "taking the whole complex investigation into account, thinking about other variables that could account for the findings, considering the strength of the evidence and the statistical results obtained, weighing possible contraindications, and so forth."

In the best case, that means going to the study and reviewing the results. Time and knowledge of educational research methodologies may prevent the best case, but they do not preclude a careful consideration of results in light of long (or not so long) experience in the classroom.

Research Results and Classroom Realities

Research results also need to be looked at with a practical eye. Often it's a cost-benefits analysis. If you ask more higher-order questions, which make students think, better remember the content, and become more skilled at application, those questions take time — and that means some essential content in the course doesn't get covered. A practical assessment of research results helps you decide how much of the "good thing" you can afford to incorporate in a class already packed full of other "good and necessary things."

Finally, there's some artistry involved in the eliciting the desired response as well. Despite all the evidence supporting a positive relationship between higher-order questions and student achievement, some days in class, in some classes they should not be asked. Deciding not to ask them is a judgment call, based again on a teacher's experience, a host of contextual variables and the teacher's intuition. Integrating all that information into the decision to do what the research recommends requires artistry.

From: "Nurturing the Critical, Practical, and Artistic Thinking of Teachers" by N.L. Gage and David C. Berliner, *Phi Delta Kappan*, November 1989, pp. 212-214.

Approaching Diversity, Common Ground and Even Higher

by B. Hannah Kliger, U. of Massachusetts, Amherst

It was several days after being asked to speak at a faculty conference on values and the curriculum that I began to analyze what we had been studying in my introduction to Yiddish language and literature course. We were reading a story called "If Not Higher," written by one of the founders of modern Yiddish literature, I.L. Peretz.

In this gem of a story a rabbi disappears every year during the most holy of times on the Jewish calendar, around the Jewish New Year, and his disciples feel sure that their leader must simply ascend to heaven. A skeptic, hearing of this miracle, decides to find out just where it is the rabbi goes. Playing detective, he hides under the rabbi's bed, so that he can trace the rabbi's footsteps. He discovers the rabbi disguises himself as a peasant, goes off into the forest, and brings firewood to the home of an old sick woman. When the skeptic returns from his mission, the villagers ask him where their rabbi goes. Does he indeed ascend to heaven? The skeptic replies: "If not even higher."

This is a story, not about living with differences, but about approaching common ground. The two factions — represented by the rabbi of the Hasidic sect of Judaism and the skeptic who symbolizes the opponents to this more mystical tradition — were irreconcilable, historically, and remain so to some degree in modern Jewish life. Yet, in this story, the discrepancy between the two viewpoints is resolved as boundaries and markers of difference and distrust are transformed into the beauty and wonder of diversity. In the story, we focus on intragroup diversity, but the principle is the same and applicable for intergroup relations.

This simple Yiddish story caused me to realize I must now, as indeed all of us must, think about what we teach in light of broader questions of multiculturalism and pluralistic expression, heterogeneity and the potential for conveying the value of difference.

But is this mandate really applicable to us all? We asked similar questions of each other in a faculty development program at the University of Massachusetts initiated by the Lilly Endowment. Six junior faculty from various departments were selected as teaching fellows to meet regularly throughout the academic year to explore various aspects of the profession.

What would bridge our differences, we wondered. Can math instruction compare to teaching ancient history? Or plant and soil geology? At the year's end, even the "skeptics" in our group were positively convinced that no matter what our specific teaching competencies may be, as faculty we share common concerns about our craft and our responsibility to students. In addi-

tion, we felt part of a community that cared passionately about teaching, where we had bridged our academic boundaries to create a supportive network that nurtured honest sharing about our work and, very significantly, about ourselves.

In a similar vein, faculty conferences on diversity in the curriculum can also be meaningful. Meetings where colleagues are willing and ready to share how they make students aware of the multiculturalism that pervades our world, I believe, *also* foster ongoing reflection about the diversity that exists among us, the faculty. These issues need to be discussed frankly and constructively, as we each face our own hesitations and discomfort in articulating these differences to each other and our students. My point? We must successfully face ourselves, before we can face our students.

When we are ready to face our students, we must ask ourselves, Who are they? Do we know? Do we let them tell us and each other? As we invite students to join our journeys, be it in a course on Jewish history, or accounting, or sociology, do we know the baggage they bring along? What a difference it makes to teach Judaic Studies 101, a survey of Jewish civilization, if I have some sense of who is traveling with me.

I have learned, from the colleague I invited to serve as my teaching mentor during the Lilly Fellowship year, to ask students to write a one- to two-page statement at the beginning of each semester, to tell me what they would like me to know about them. From these brief essays, I learn much about the contrasts — geographic, cultural, economic — in my very own classroom. And sometimes, the mere asking and telling opens new doors, and relieves some of the great silence that exists among us all, students and faculty alike, when it comes to diversity.

I add my vote to those who urge new and innovative steps to break the silence. I would also add that by choosing to value diversity and to embrace the common ground we share, we will be reaching towards the high goals and ideals which our educational institutions must strive to attain — if not even higher.

Effective Instruction: Student and Faculty Viewpoints

Critics of student evaluation frequently argue against its use because they contend faculty and students have different ideas about good teaching. Students use criteria that differ from those of faculty evaluators. Frequently there lurks in the argument an assumption (sometimes implied, sometimes stated) that the student criteria tend to be inappropriate.

In the large body of research on student evaluation are a number of studies that address the relationship between faculty and student assessments of instruction. Kenneth Feldman decided to analyze a group of these studies to explore "the extent to which students and faculty, in fact, do differ in the criteria each group uses in evaluating teaching." (p. 292) He located 31 studies where students and faculty at the same schools were asked about the importance of various dimensions of teaching. In most of these studies students and faculty identified the attitudes, behaviors and pedagogical practices they felt contributed most to instructional effectiveness.

Across the 31 studies the average correlation was +.71, "which indicates a substantial though clearly not total, similarity between the criteria students and faculty use in judging effective teaching." (p. 298) In 12 of the 31 studies correlations were at least +.85, in 9 of the studies at least +.90. Feldman writes in his conclusion that "extant evidence shows faculty members not to be much different from students in their views on good teaching." (p. 319)

And so the objections of student evaluation critics, at least in this category, can be put to rest. Nonetheless, "substantial" areas of similarity do not mean complete similarity, and Feldman decided to explore the dissimilarity that does exist. Given the coding and ranking system he used to compare the studies, the differences could be explored in 22 of the 31 studies.

Differences of Perception

Through average standardized ranks and rank ordering of the various instructional dimensions (calculated by means explained fully in the research), Feldman discovered a "pattern of students placing more importance than faculty on teachers being interesting, having good elocutionary skills, and being available and helpful. Students also emphasized the outcomes of instruction more than faculty did. Faculty placed more importance ... on teachers being intellectually challenging, motivating students and setting high standards for them, and encouraging self-initiated learning." (p. 291)

The comparison also specified more clearly the areas both groups evaluated highly. "Students and faculty were similar in placing high importance on teachers being prepared and organized, clear and understandable, and sensitive to class level and progress." (p. 321)

A final note: Feldman avoids describing faculty and student views of effective instruction in terms of the extent to which they "agree" and "disagree." He points out that, at least in one sense, the terms imply the areas of agreement/disagreement are explicit, known to each group. Are they? We don't know, but some of us suspect not. Feldman points out we won't know for sure until research addresses the issue. Until then, we'd best not assume the respective parties know where they agree and disagree.

Feldman, Kenneth A. "Effective College Teaching from the Students' and Faculty's View: Matched or Mismatched Priorities?" ***Research in Higher Education*****, Vol. 28, No. 4 (1988), 291-344.**

The Teaching Professor

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Cooperative Learning and College Teaching: Tips from the Trenches

by Jim Cooper, California State U.-Dominguez Hills

Collaborative Learning is a form of instruction in which small groups of students and/or faculty work together on an academic task. One type of Collaborative Learning is *Cooperative Learning*, an instructional strategy well researched at the K-12 level but less understood at the college level. It can be distinguished from Collaborative Learning in two ways:

- It focuses on structures designed to ensure student-student interdependence.
- It emphasizes individual accountability: virtually all of a student's grade depends on individually completed tests and papers, rather than undifferentiated group grades for team work.

A group of faculty members at California State U.-Dominguez Hills have formed a group, affectionately known as CLUG (Cooperative Learning Users Group), to discuss classroom applications of Cooperative Learning. These discussions resulted in the following tips for successfully implementing Cooperative Learning, which we would like to share with faculty elsewhere.

1. Organize. The three most important things in setting up a Cooperative Learning classroom are Structure, Structure and Structure. Many group learning situations are sabotaged because teachers are not precise about the task, the role of each person in the group and the relative contribution of the group activity toward the course grade. When this happens, students get off task and begin to see the group assignments as busy work.

2. Retain individuality within the group. Assess the individual contribution of each student, rather than giving group grades. This can be done by testing all students individually, by having student assign grades/or evaluations to one another at the end of group work, or by some other means. If some group grading for group work must be done, be sure that the group grading constitutes a very small amount of the total grade (perhaps a few "bonus" points which might help raise a test score from a B- to a B).

3. Focus on the *goal*, not the *means*. Design Cooperative Learning tasks that require students to *learn* something, not to *do* something. If all group members are expected to learn new skills or competencies and are individually tested or otherwise evaluated on those skills, students will work together to teach one another. If the group simply has to complete a task (such as a work sheet), one or two students will dominate and others will sandbag or freeload — one of the most common complaints among those using more traditional team learning procedures.

4. Make it relevant and keep it in perspective. Make sure that Cooperative Learning tasks are perceived by students as relating to course objectives and not seen as busywork or an attempt by the instructor to avoid work. For example, assign a reading on a given topic, then lecture on the topic, then give a series of Collaborative Learning activities tied to the reading and lecture which allow the student to practice the skills to be mastered. Practice allows students to "elaborate" on the newly presented skills, transforming the material into information understandable to the average student via "student" talk, as opposed to "teacher" talk.

5. Form groups with care. In our experience it is best for groups to be formed by the teacher. We try to form heterogeneous groups based on prior achievement, race and sex. Student-selected or randomly selected groups tend to generate off-task behavior and to reduce students' ability to learn about others of varying cultural and ethnic backgrounds.

6. Optimize through size. In general, groups of three to five are best, with four often the ideal number. Fewer students results in insufficient diversity of views and more students decreases each persons' opportunity to practice orally the skills to be fostered.

7. Supervise and structure. In-class group work is usually more productive than out-of-class group work. Instructors need to monitor the performance of groups in order to resolve academic and social problems and modify the assignment if it isn't working. If out-of-class group work is necessary, very explicit structures must be built into the assignment to ensure promptness, productivity and equal contributions from all group members.

8. Start small. Begin with one class, preferably a class with which you already feel comfortable. At Dominguez Hills, most of us use Cooperative Learning

as an adjunct to lecture, discussion and other techniques, not in place of such techniques. We generally use these activities for 10% to 35% of the total class time.

9. Adjust your methods. Less content can typically be covered in class when using Cooperative Learning. This may necessitate covering some material via homework activities, including handouts, reading of the textbook, etc. However, our experience is that students in our cooperatively taught classes learn more of what is taught and retain it longer than when the same content is presented in other instructional formats.

David and Roger Johnson at the U. of Minnesota have documented these anecdotal findings and have found that Cooperative Learning does foster both general academic achievement and higher-level (critical thinking) skills across a wide range of disciplines. Thus, our own observations at Dominguez Hills and the research suggest that students taking advanced courses when their prerequisite courses used Cooperative Learning will have *more* mastery of content than students taking advanced courses when their prior courses were taught using more traditional instructional procedures.

10. Look for opportunities. We have found within our faculty group, as did Johnson and Johnson, that Cooperative Learning may be applied across a wide variety of disciplines. We have used the technique in a number of courses, including French, Spanish, literature, statistics, clinical science, biology and graduate/teacher education.

11. Prepare the necessary social skills. We find that such skills as active listening and helping one another in mastering content often have to be spelled out in the course syllabus and perhaps even modeled and reinforced during the class. It is a mistake to assume that our students will demonstrate these skills without building in structures to ensure such behavior.

For a complimentary article and annotated bibliography on applications of Cooperative/Collaborative Learning at the college level, write to Jim Cooper at CSUDH, HFA-B-316, 1000 E. Victoria St., Carson, CA 90747, or call 213/516-3961. Additional materials, including a workbook on Cooperative Learning and college teaching, can also be obtained at cost.

"Teaching is very much like athletic competition. Preparation is lengthy, performance is brief. Nevertheless, the season is long and you have to pace yourself, holding something in reserve for the crucial moments."

— Robert L. Kabel, Penn State U.

Keep Those Comments Coming

It's one thing to get a discussion going in class, but quite another to sustain student interaction. John H. Clark, in "Designing Discussions as Group Inquiry," in the Fall 1988 issue of *College Teaching*, describes this as the need for "keeping the heat under a discussion." In addition to providing this helpful metaphor, Clark offers a number of suggestions for doing just that, to "help return responsibility for learning" to the students:

- Make a visible display of keeping a written record of student ideas, questions and factual contributions.
- Use the record to tie student contributions together, to point out differences, or to wrap up the discussion.
- Convert student questions to statements and ask for other opinions.
- Convert student opinions to questions for the quiet or withdrawn students.
- Deflect questions of interpretation to other members of the group.
- In response to student assertions, ask for examples from others.
- Ask questions that require inference, prediction, analogy, or synthesis of divergent ideas.
- If the class looks blank, reframe the last student response as a new question or assertion.
- Tag important assertions or questions with the student's name: e.g., The Fred Hypothesis or The Virginia Theorem or The Beth Disclaimer, using them as hinge points for further discussion.

THE TEACHING PROFESSOR

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Focus

Handouts

Do you use handouts? Have you ever given more really thought about *why?* What instructional objectives do handouts accomplish? Do they accomplish these objectives to a greater or lesser degree depending on their quality?

In their article, "How To Improve Handouts," George Brown and David Tomlinson explore seven potential uses for handouts. You can see if the way you use handouts appears on the list; but more important, you might discover other ways handouts could help you help your students.

Handouts used outside class may:

— Orient students to the *prerequisite knowledge* necessary to understand course or class content. Here the authors envision a brief course outline, perhaps with a highly selective set of readings, functioning as a "valuable road map" enabling students to see where the course content came from and in what direction it's headed. The authors also envision handouts to remind students of the salient features of foundation material, which students probably covered in previous courses and probably don't clearly remember.

"Teaching is more effective if we know what essential points we wish to convey. Similarly, learning is improved if students know what is expected of them.

— State the *learning objectives* for the course or class. The authors write, "Teaching is more effective if we know what essential points we wish to convey. Similarly, learning is improved if students know what is expected of them. So, one purpose of a handout for a course or a lecture is to provide a checklist of objectives for both ourselves and the students."

— Indicate *alternative sources of information.* These handouts — or reading lists — identify for students other relevant material. Beware of the compulsion to be comprehensive: "The longer the reading list, the less likely a student is to read any of the texts and articles." They recommend that instructors avoid "random walks" through the literature, but rather prepare lists that direct students to essential chapters or article sections and include notes and comments to help harried students make informed choices for limited reading time.

— Provide *supplementary information.* Handouts help instructors with too much material to fit into a single class session: they can present additional information on a handout. Instructors who use this method must:

- give students reasons to study handouts,
- be sure students have the opportunity to raise questions and discuss this supplementary material at some point during class, and
- be aware that information overload can impede learning.

"The longer the reading list, the less likely a student is to read any of the texts and articles."

Handouts used in class may:

— Provide *structure and perspective* on a topic: "A handout can be used to guide students through a lecture." Again the road map analogy helps to clarify the role of these handouts. They contain the signposts and landmarks students can use to guide them toward the lecture's final destination. With these handouts it helps to leave space so students can add their own elaborations to the signposts and landmarks. Sometimes these handouts can be organized as a series of related questions which are answered as the period progresses.

— Summarize *lecture content.* The idea is to give students a set of lecture notes in the hope they won't expend all their mental energies on getting down everything you say, that they'll use the time in class to think about and respond to lecture content. A complete set of lecture notes is a "recipe for passivity" — especially in courses where students are not motivated. However, using a handout like this for part of the content may encourage more mental processing.

— Ensure *accuracy and efficiency* in the transfer of detailed information. Handouts are especially useful if students need to copy diagrams, models or other graphically depicted content. It takes time to transfer drawings into notes, and frequently the accuracy of the diagram suffers in the process. To ensure that students are active, provide students with the diagram but let them label the parts.

From: Brown, George, and Tomlinson, David. "How To Improve Handouts." ***Medical Teacher*****, Vol. 2, No. 5 (1980): 215-220.**

Students "Participate" with Each Other

by Beverly C. Pestel, U. of Notre Dame

Class participation usually focuses on the interaction *between teacher and student.* Participation in my classes focuses on interactions *among students.* I have made extensive use of a paired learning strategy modeled after a technique presented by Arthur Whimbey and Jack Lochhead in their book, *Problem Solving and Comprehension.*

Instructions for participation are given during the first week of class. The learning strategy requires one student to answer a question, give an explanation, or do a problem, while the other student plays the role of a critical listener. These roles are alternated with each situation.

I may begin my class with a brief review of the previous material by saying something like: "In our last class, we were discussing the concept of entropy. Describe the meaning of entropy to your partner." At another point in the class, we will have discussed all of the concepts associated with a particular problem. I will then put problems on the overhead and direct students to solve them using the Whimbey pairs strategy.

The intent ... is to give students the opportunity to participate and at the same time illustrate to them the responsibility they must take in their own education.

The *advantages* of this strategy are obvious. Everyone has the opportunity to participate in a meaningful way in each situation presented. There is no problem of having to repeat answers for the whole class that were originally heard by only a few. It eliminates the decisions of who to call on or of how to respond to incorrect answers. Additional advantages are that students are able to either demonstrate what they know or reveal to themselves where they need to concentrate their efforts. Listeners have the privilege of hearing how other students perceive the material or procedure and are introduced to alternative ways of thinking about the concepts or doing the problems.

The obvious *disadvantage* is that students may explain things to one another incorrectly. To counter this, I generally offer a summary if an explanation or answer has been assigned. If the assignment is a quantitative problem, I will provide the correct answer, but never a step-by-step solution.

Students Assume Greater Responsibility

The intent of this strategy is to give students the opportunity to participate and at the same time illustrate to them the responsibility they must take in their own education. I will never give a full explanation, answer or solution. Students have a tendency to remain passive rather than active during the participation time if they know that passivity will eventually be rewarded with an answer from the teacher. If, on the other hand, they realize that the only detailed answer they will receive is the one they generate, participation is enhanced.

I have used this strategy in entry-level college chemistry courses to the extent that I never do a sample problem for the class. Applying the concepts we have been discussing to a specific problem is their challenge and responsibility. Controlled studies have indicated that students taught this way perform as well on tests as students taught in a more conventional way — if not better.

The results have proven that most of my apprehensions and assumptions were unfounded:

- I expected a lot of problems to surface; many have not.
- Students would need for me to tell them everything; they do not.
- Students would not use the time wisely; they do.
- Students would work at different paces; I simply put supplemental problems on the overhead for the faster students.
- The confusion of having half the class talking at once would be a problem; it is not.
- Students would not learn efficiently from one another; they do.
- Students would not accept the responsibility for learning; some do and some do not — but this is true in any class situation.

Academic Integrity

by Tom Franklin, U. of Wisconsin-Stout

"What About Cheating?" (*The Teaching Professor*, January 1990) challenges students and faculty to clarify their values and institutional policies about academic dishonesty. I agree that faculty have the responsibility to structure situations to influence the likelihood of academic dishonesty, and that indecisive faculty attitudes and responses to academic dishonesty create a climate of tolerance. However, strategies designed to detect and prevent cheating assume that dishonesty will occur. In my view there may be other, more affirming strategies to consider.

A year ago I conducted an experiment with two sections of an undergraduate psychology course. In one section with 25 students I implemented an "Honors Policy" in which students were told that the Psychology Department was considering developing a program to help improve the levels of trust between students and staff, and that part of that plan included a new test-taking policy. At the beginning of each test period I stated, "Because I believe that you are here to learn and develop, and that you are trustworthy, I will leave the room while you are taking this test." At the end of each test students were asked to sign statements that they had neither given nor received help during the test and that they had not seen anyone else giving or receiving help during the test.

The control group of students, which numbered 28, was not given any information about a department honors policy, I was present in the classroom during their tests, and no statements were signed after the tests. After the final exam, both groups were given a questionnaire about academic integrity, their test-taking experiences, and their perceptions of student/teacher relationships in the course.

In comparison with control students, those who were shown trust and who believed that their conduct could influence a policy decision on academic integrity believed that:

- their teacher genuinely trusted them,
- if teachers told their students that they are trusted, then less cheating on tests would be likely,
- more expressions of trust from teachers were needed, and
- a teacher's presence during a test can hurt concentration.

In contrast, control students believed that:

- a teacher should be present to supervise students taking tests so cheating won't occur, and
- some students would cheat on tests regardless of whether a teacher is present. They were also more offended by how tests were administered in the course. The honors students reported witnessing significantly less cheating during the tests than control students.

I recognize that the results of this research are open to criticism and my optimism about people may be naive. Nevertheless, as we consider academic integrity, we need to give priority to *enticements to honesty*, not just *deterrents to dishonesty*. Encouraging mutual respect and trust feels far better than being a classroom cop.

Assessment: Here to Stay

"Assessment" may still be an administrative buzz word at your institution, but measurement of the educational impact of an institution on its students is here to stay. In a recent article, Patrick T. Terenzini notes that "seven national reports have appeared in the last five years, all critical of higher education ... and all giving a central role to 'assessment' " as a means to remedy the deficiencies. The implication: faculty need to know what assessment means and what the crucial issues are surrounding it.

Terenzini offers relevant background in three areas: definitional issues, organizational and implementation issues, and methodological issues. For faculty new to assessment the easiest and most relevant place to begin is with definitions.

Terenzini points out that there's no consensus as to precisely what "assessment" means:

> Some have used the term to mean testing individual student achievement levels in various academic areas. To others it means a review of the general education program and an evaluation of whether students are receiving a 'liberal education.' To still others, it means a series of surveys of current students, alumni, or even employers, undertaken for program evaluation and planning purposes. And to still others, it means nothing less than institution-wide self-study, applicable to teaching, research, service, and administrative and management functions. (p. 646)

Because the definitions suggest such different approaches, Terenzini offers three questions that should guide any consideration of assessment.

"What is the *purpose* of the assessment?" Why is it being proposed? To enhance teaching and learning? To provide data for some higher authority, like a state legislature?

"What is to be the *level* of assessment?" This question relates to the matter of who is to be assessed, individual students or groups. If the interest is in groups -- department, major, college, class year, or ethnic group, for example — then the individual information is aggregated to summarize characteristics for the group.

***"What* is to be assessed?"** Education has a variety of outcomes; which ones are of particular interest? Terenzini offers a typology proposed by Peter Ewell, who categorizes outcomes in four basic dimensions:

- *knowledge* outcomes, including both breadth and depth;
- *skill* outcomes, including basic, higher-order,

and career-related;
- *attitudes and values* outcomes; and
- *behavioral* outcomes, meaning what students do both during and after college.

Terenzini concludes, "Time spent in committee work and in other forms of public discussion of these three questions will be time extremely well spent. An inadequate conceptual foundation for an assessment program will produce confusion, anxiety, and more heat than light." (p. 649)

From: Terenzini, Patrick T. "Assessment with Open Eyes: Pitfalls in Studying Student Outcomes." *Journal of Higher Education* (November/December 1989): 644-664.

Check Those Lists

Various checklists have appeared in *The Teaching Professor* (Textbook Selection Checklist January 1990; Assessing the Instructional Climate Checklist, August/September 1989; Teacher Behaviors Inventory, October 1988; Checklist for Evaluating Multiple-Choice Tests, November 1987; and Checklist for Developing Instructional Awareness, April 1987). But we've never explained why we value checklists and how we think you ought to use them. We intend to remedy those omissions now.

Much can be learned from checklists. Think of a checklist as an attempt to identify and describe important components or dimensions. Take the Instructional Climate Checklist, for example; by virtue of including items on the list, it asserts that these are the relevant components of any instructional climate. Checklists offer definitions or delineations of abstractions we may understand only vaguely, imprecisely. They help by making some aspect (instructional climate, in this case) real, concrete — something we understand more clearly and discuss more accurately.

But as with so many definitions, we don't always agree. Checklists can (we think they *should*) stimulate debate, reflection, thought and interaction. Is everything that should be on the Textbook Selection Checklist there? Is something there that shouldn't be? Think of suggestions for additions and deletions as alternative definitions, which may be more appropriate for a particular context. The checklist is the catalyst that begins this further and larger reaction.

Checklists also provide concrete criteria against which specific examples can be compared. You think your multiple-choice tests are pretty good? The Multiple-Choice Test Checklist won't tell you if you're right, but it does offer a template, so you can see how your test lines up with a set of criteria proposed by people who know about test construction. Checklists are valuable as a framework for point-by-point assessment.

From some perspectives, the fact that checklists don't overtly judge may be seen as a weakness. You simply check the items off or indicate how often you do them. The Teacher Behaviors Inventory says "Writes key terms on blackboard or overhead screen." It's not a question of right or wrong; either you do or you don't.

From our perspective that's a strength. It makes practices, policies and procedures concrete. In the case of this inventory, the abstract ingredients of effective instruction are translated into concrete behaviors. Granted, this mechanistic view cannot be our only perspective. But it's nice, for a change, to talk about what teachers do without making judgments.

Checklists have value because:
- they offer "definitions" of aspects of instruction not always easily defined,
- their definitions stimulate dialogue,
- they offer concrete criteria, and
- they offer gentle judgments.

But how do we use them to fully realize their value?

Get the Most from the List

First, we suggest using them to raise consciousness. Read through the items carefully and think about the collection of them as being a tentative, but complete definition of the topic. The list can help you clarify and develop your understanding of the particular area described. Even if you stop here, the checklist serves an important purpose.

If the checklist describes a tangible object like a test or textbook, you can lay the list on one side and the object on the other as you proceed through the list. We recommend a very mechanical, systematic use of checklists. Yes, they're valuable if you read them through and use them in a general way to assess a textbook, but the value increases to the extent the confrontation between criteria and object is direct.

The systematic use of checklists is even more essential when the object is intangible, such as classroom performance. It doesn't do much good to know in a general way that something did or did not occur: you need concrete examples. Go through the checklist, fill it out, and think about the items carefully: a checklist can be a valuable vehicle for self-assessment.

Face it: if you fill out checklists on your own, it's easy to cheat. You may be doing it for nobody but yourself. However, self-confrontation is never easy. You can obviate this limitation if you use checklists systematically and seriously — and if you involve somebody else. Think your multiple choice test really is that good? Give it and the checklist to a colleague. Compare that completed checklist with your own.

Finally, not all the useful checklists have been published here. Do you have a favorite? Consider sharing it with the editor. Include the source, in case we decide to publish it here, so we can give credit and secure permission. And don't overlook the possibility of creating one. What should happen in any cooperative learning activity, or lab session, or study skills work-shop? Make the list and you've got the start of a checklist which colleagues, students and conscientious use can help refine.

The TEACHING PROFESSOR

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Faculty Vitality

Granted, the end of the academic year is hardly the best time to raise the issue of vitality, with most of us still exhausted. Nonetheless, we have the summer to consider how we might plan to better make it through the year (and years) ahead.

"Faculty vitality" tends to be one of those trendy terms that's been written about lots more than it's been studied. From the literature it's not clear what it means or what fosters it.

The few scholars studying it do assert that it's more than simple productivity and that it varies with institutional settings. "Vital" professors at a community college or liberal arts institution or research university are not the same. But how do they differ from each other and from their less "vital" counterparts in attitudes, practices and achievements?

Roger G. Baldwin begins to answer that question and contribute to a better understanding of "faculty vitality" in a research project that includes interviews with 50 faculty in the "vital" category and 40 labeled "representative." Those interviewed were from four different institutions and fairly evenly distributed across humanities, sciences and social science fields.

Differences between the groups emerged in a number of areas. Although the small sample and qualitative nature of the study preclude definitive statements of differences, the results merit consideration, particularly when we contemplate the quality of our lives in the academy. To promote that reflection we offer the results as recommendations to promote vitality:

1. Diversify your academic career. Vital faculty in this study had more complex, multidimensional careers. They did more different things: consulted, worked on special administrative assignments or moved into administrative work, taught in different departments, or engaged in different kinds of research projects. Fewer than half the vital faculty reported feeling stuck sometime during their career, compared with 62% of the representative group. "Vital professors seemed to find many ways to expand their work lives and make room for professional growth." (p. 169)

2. Plan your career — don't just let it happen. Nearly twice as many "representative" professors indicated they had *no* goals for the near future. Baldwin believes that "focused, achievable goals ... serve to stimulate and direct faculty work efforts." (p. 173)

3. Collaborate, take risks, consider role changes. "Many of the most productive and esteemed academics live professional lives that contrast sharply with the stereotyped professor working alone for years in a laboratory or singly in front of a class of note-taking students." (p. 176) Vital faculty collaborate: they team teach, cooperate in research projects and jointly author publications. They take risks, like helping to establish new academic programs, experimenting with teaching strategies and pursuing interdisciplinary teaching and learning opportunities.

4. Seek out supportive administrators. Half of the vital faculty interviewed noted that administrators had helped them in some way; only 20% of the other group mentioned administrative assistance. Administrators helped in various ways. Sometimes they made funds available to purchase equipment, reduce course loads or recognize previous accomplishments. Other times they conveyed genuine interest, concern and appreciation for faculty work.

Researchers wonder how much of our vitality is the product of individual factors, such as innate ability and personality, and how much of it is a result of institutional environment. There's no question that each of these factors contributes, but isn't it possible that faculty themselves play a role? Can't we look at our colleagues who approach their academic lives with enthusiasm and vigor — and learn from them?

Reference: Roger G. Baldwin, "Faculty Vitality beyond the Research University: Extending a Contextual Concept." ***Journal of Higher Education*** **(March/April 1990): 160-180.**

Crib Sheets

by Jules Janick, Purdue U.

crib v. To cheat on a school examination. (*Dictionary of American Regional English,* 1985).
crib n. A device or object used for cheating in an examination. (*Webster's Third New International Dictionary,* 1961).

Students call small pieces of paper containing key notes or formulas, concealed and used surreptitiously during examinations, "crib sheets." Their use is considered a form of cheating somewhere between peeking and stealing the exam.

When not used by students, crib sheets are perfectly acceptable. No one requires professors to memorize their expertise. They use notes during lectures — which can be fleshed out and distributed as course notes or reformulated into textbooks. Even experienced platform performers usually carry a card with a few notes and, perhaps, their opening or closing sentences to forestall anxiety. Crib sheets have become institutionalized as nametags at professional meetings — now made in large type so nobody needs to admit he or she can't recall the name of a long-lost colleague. The modern development is the projected crib sheet: the slide lecture.

I consider the crib sheet a rather benign form of cheating whose major use is to forestall anxiety — not unlike the perfectly acceptable practice of cramming the night before exams. Preparing a good crib sheet, one that packs the required information on a tiny slip of paper, is an art form that, properly done, is self-defeating. The gentle cheater, to his or her surprise, finds that the material has been learned. Thus, the development of a good crib sheet resembles its antithesis: studying.

Question: Is a student who prepares a crib sheet, carries it into an exam as a security blanket, but doesn't use the material because it has been learned, a cheater? Is the security of a crib sheet an unfair advantage?

In the belief that proper crib preparation is indistinguishable from studying, I have institutionalized and legalized the crib sheet in my courses. I allow students to use a legal crib sheet for the final exam, which covers the entire semester's material. The rules are:

- Both sides of a single 8" x 10 1/2" piece of paper may be used.
- Cribs must be written by hand — not typed — and signed.
- The crib sheet is turned in with the exam.

No one has failed to take advantage of the opportunity.

I aim to reduce exam anxiety and to encourage good study habits. (I realize I am tricking the students into studying.) The process provides me with valuable information. I can evaluate why poor students, in fact, do poorly. I also use the crib sheet as a form of self-evaluation. If some students can summarize a whole term's lectures into a useful crib, I feel I have done my job. If some areas result in confused crib sheets, I have failed to communicate clearly.

As you might expect, "A" students have great crib sheets, while poor students make poor ones. Some are marvelously conceived, organized and written. I have been tempted to grade crib sheets rather than the exam. I used to keep the turned-in crib sheets to avoid recycling, but I have become aware that personalized crib sheets are useful only to the originator. I now return crib sheets with the final exam but sometimes keep a photocopy of the best ones, out of admiration.

In my opinion, the "legal crib sheet" encourages students to organize their study habits at the same time that it reduces exam anxiety. It has the added benefit of encouraging me to examine my success and failure in the classroom. Finally, students like the concept.

"There is an ancient proverb which says, 'Give a man a fish and you feed him for a day; give him a fishing rod and you feed him for the rest of his life.' Our educational proverb might read, 'Teach students subject matter, and you give them perishable information; teach them how to learn, and you give them knowledge and independence for the rest of their lives.' "

— K. Patricia Cross, "Dealing with Diversity: The Challenge of College Teaching," *Change*, September 1983, p. 22

The Teaching Professor

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Forum Follow-Up

Your Instructional Images

Ed.'s note: In our February 1990 issue we wrote about metaphors and how they shape our thinking about ourselves, our students, our institutions and our profession. We invited you to share your favorite instructional "images" and you did. Thanks to all who wrote. From that correspondence we share this collection of "gems."

From Kenneth N. Carter, Jr., who teaches chemistry at Northeast Missouri State ...

- about his "expected, and often conflicting, role(s) as a teacher":

"I have a 'mafia model' of education: I have to be the Godfather, the Don, and the Enforcer by turns. The Godfather tells you what you are going to do, the Don is everybody's good friend and wants to help you be the best mafia member you can be (a real 'facilitator'!), and the Enforcer rubs you out if you get out of line. I set the course standards and determine policy, encourage students in growth and meeting the standards, and enforce standards by assigning grades and rubbing out the GPA of students who don't take the Godfather up on his offer. I use this metaphor to explain to students why teachers can seem to care so much at times, yet be so intransigent on other occasions. It may be because of these different functions."

- about student expectations:

"Many of my students are trailers who expect me to be the tractor. But I expect them to have their own motors! What I want is a convoy! Yes, good buddy, let's put the pedal to the metal and roll for the state line! I'll help tune your motor, and read the map, but I'm not 'the little engine who could' with a string of boxcars headed down some track."

- an update of the old image of spoon-feeding:

"Tube-feeding."

- a pathological reworking of a tired metaphor, "cramming":

"Academic bulimia, intellectual binge and purge! I do not mean to trivialize or exploit a tragic physical and emotional condition. I consider both the literal and metaphorical conditions pitiful and outrageous."

"I attempt to structure my class in a way that reflects the language. Like the grammar and punctuation rules we rely on to guide a reader through the thoughts we put to a page ..., that help define the limits of the text, I give the class rules to follow."

From Nick Carbone who teaches English at Lyndon State College in Vermont ...

- about how he structures his class:

"I attempt to structure my class in a way that reflects the language. Like the grammar and punctuation rules we rely on to guide readers through the thoughts we put to a page, the sign posts, the pauses, the squiggles and dots and dashes that cue them to ends and beginnings, that help define the limits of the text, I give the class rules to follow, strict rules on attendance, a paper's presentation, due dates, course requirements and goals. I try to set limits so that I can allow them free play, much the way a sonnet limits the length and number of lines, but never the play of conceits, images, and theme."

From Bill Searle, who teaches management at Asnuntuck Community College in Connecticut and believes it's healthy to have many images of a teacher's role, offers these samples from his much larger collection:

- Translator (particularly when some textbook author gets pretentious)
- Observer (some of my students' best work comes when I just watch)
- Resident of slum housing (does the administration really think anyone can work in this mess?)
- Hermit living and thinking in a wilderness (does anyone else struggle with the 'large' issues?)

From Victoria Miller, who teaches English at Alverno College (WI), as quoted in *Alverno Magazine*:

"I see myself as a travel guide on a tour bus with a broken microphone. The students are tourists. I can only gesture and point — show emotion, perhaps — but eventually, we have to stop the bus so everyone can get off and take a closer look."

From Robert J. Kloss, who teaches English at The William Paterson College of New Jersey, we have "Coaching and Playing Right Field: Trying on Metaphors for Teaching," in *College Teaching* (Fall 1987). Kloss proposes the coaching metaphor and elaborates on that image, in an article reminiscent of the piece Bob Kraft, who also teaches English, wrote in the January 1988 issue of *The Teaching Professor*, "Coaching to Learn." Kloss suggests that teachers try "playing right field":

"I see myself as a travel guide on a tour bus with a broken microphone. The students are tourists. I can only gesture and point .... Eventually, we have to stop the bus so everyone can get off and take a closer look."

"When a boy, I was small, scrawny, and underweight without compensatory abilities like speed or quick reflexes. As a consequence, I was always chosen last when baseball games were organized. Anyone who has endured this childhood humiliation knows the feeling of batting last and being sent, without fail, to play right field. Few balls are ever hit to right field, so the player there has a lot of time to punch the pocket of his glove and daydream about hitting the game-winning home run in the bottom of the ninth ....

"It is this participant-observer role ... that I willingly assume in class today. Once the students and I agree on the rules of the game, among which is that I will function primarily as player-coach, I get out of the way, remain silent, and let learning go on as they interact. Should someone hit one in my direction, I handle it if appropriate; if not, I call for some other player to take it. I shout encouragement to whoever needs it (and most do); I suggest a better stance to take; I praise a good play, ask how a bad one might have been prevented." (p. 138)

From Richard G. Tiberius, a teaching consultant in the medical school of the University of Toronto, who argues an important premise in his excellent article, "Metaphors Underlying the Improvement of Teaching and Learning," in the *British Journal of Educational Technology* (May 1986):

"Metaphors structure our understanding of the process of teaching and learning and thereby influence our efforts — both research and practice — to improve this process." (p.144)

And what shall we learn from all these images? Carbone writes eloquently, "I've never found any one metaphor that conveys what it is to be a teacher, although those that describe nurturers come closest — parent, coach, guide, leader and the like. It seems that to cover all that a good teacher must be requires some Protean device, some kind of metamorphic metaphor that shifts kaleidoscopically, melding shards and shapes of meaning and description the way we adjust our own collage of skills and emotions to fit the instructional occasion."

"*Vital professors* typically are individuals who challenge students academically and contribute to their overall development. Usually they participate in the governance and intellectual life of their institution and are involved in the debates of their discipline or professional field. Vital professors are curious and intellectually engaged. They enjoy the respect of their colleagues and are effective in the multiple roles of members of the academic profession. Perhaps most significant, vital professors grow personally and professionally throughout the academic career, continually pursuing expanded interests and acquiring new skills and knowledge. Adjectives that would apply to vital professors include: enthusiastic, caring, dedicated, vigorous, creative, flexible, risk-taking, and regenerative."

— John W. Gardner, quoted in *The Journal of Higher Education*, March/April 1990, p. 180

Small Groups: Troubleshooting

All instructional strategies have their problems, and small group activities are no exception. Richard G. Tiberius, author of a recently released publication on small group teaching, sees the most common problems falling into three categories: the *goals* of the group, *interaction* within the group and the *motivations and emotions* of the group.

With *goals*, the problem may be that they are unclear, unattainable or unacceptable. Problems with goals may arise for various reasons. Maybe they're *unclear* because they haven't been established. Maybe they're *unattainable* because time allotted to the task is insufficient or the group structure doesn't fit the task. Maybe they're *unacceptable* because students and teachers aren't pursuing the same ones.

As for *interaction*, the most obvious problem in most classroom groups is the *lack* of interaction. Sometimes it's because teachers try to coerce students to participate or don't reward them when they do. Other times it's because students don't know each other and are afraid of feeling foolish in front of each other.

Less obvious, but probably just as troublesome for small group interactions, is the tendency of the teacher to dominate. We forget how overwhelming our authority appears to students and, in the absence of their involvement, how frequently we exercise it.

Finally, sometimes participation in small groups suffers because students don't participate equally. That occurs because some students tend to dominate, while others like more passive roles. It also occurs if cliques form in the group or if the group is too large.

With *motivation*, the problems arise when students and/or faculty are tuned out. Students do that because they don't find the subject matter interesting, they're unclear about the relevance of the group process, or they've worked too long without a break, for starters. Faculty lose their commitment when students are disruptive or uncooperative, when students offer no feedback, or when there are no colleagues interested in discussing the strategy. Some students resist work in groups. They argue heatedly among themselves, challenge the teacher's authority, or ignore the feelings of other students in the group.

That's a summary of the problems many of us have experienced with small groups. But what about solutions?

Tiberius' book is an especially valuable resource in this area. For each possible cause of problems (like those mentioned above, and lots more we don't have space to include), he offers "suggestions" — sometimes nine or ten — to help faculty design and use group teaching methods so that the problems don't occur.

For example, in tackling the problem of students who don't participate because teachers don't reward participation, Tiberius "suggests" the following strategies:

- Encourage groups to reflect on their content and process, to make them more aware of their achievements.
- Encourage students to reward each other, possibly during special formative feedback discussions.
- Have students compare where they are now with a complicated question and where they were when they first addressed the question.
- Display student comments on a flip chart.
- Reward student comments by using them.
- Remember who said what.
- Let students experience the process of arriving at conclusions on their own.
- Allow students to make decisions about their methods of learning.
- Explain the benefits of small group learning.

If small groups are prone to this many problems, are they worth the effort? Yes. First, because lectures, discussions, labs and performance methods are just as susceptible to problems. Second, as Tiberius notes, "Actually doing something, like talking, instead of just looking and listening, increases people's involvement in learning. And there is evidence that active involvement motivates people to learn and allows them to do so more effectively." (p. 2) And finally, because these problems can be overcome, fairly easily, if you have a practical guide like this one.

Reference: *Small Group Teaching: A Trouble-Shooting Guide* by Richard G. Tiberius (1990). Order from: OISE Press, Ontario Institute for Studies in Education, 252 Bloor St. W., Toronto, Ontario, Canada M5S 1V5. Cost: $26.50 Canadian or $24.00 US, plus $2.00 postage and handling. Purchase orders or payment must accompany orders.

Ancillary Materials Teach Students to Swim

by Jon A. Sperling, Queens College, City University of New York

"Do I have to know that?"

"Will that be on the test?"

"Are we responsible for this whole chapter?"

Since my first day as a teacher some 20 years ago this question, in all its variations, is the one I have most often been asked. This is not the sort of question ever heard by the formidable Professor Kingsfield in his "Paper Chase" law class. But the Ivy League law school is a far cry from the day-to-day reality of teaching in many city, state and private institutions of higher learning across the country. Real students have problems and difficulties never encountered by those who matriculate into Camelot Academy.

Our students come to us with many diverse problems. We recognize the more obvious ones: finances, family disorganization, peer pressure, language

barriers, social background, hormones, psychological imbalances and such.

But are we aware of the problems we teachers generate for our students? To the students, the university is like a new world, full of strange countries called Psych 11, Bio 1, Soc 1 and so on. The teachers are like tour guides presenting a seemingly indigestible amount of facts and scenic areas in a language that is barely intelligible.

To compound the problem, the textbooks which should, ideally, serve the students as Baedekers through these foreign countries, all too often overwhelm them with "saturation input bombing." Hundreds of pages of facts and figures are complemented by a plethora of ancillary materials, including teachers' guides, students' study guides and test files, some maybe even available in software format.

"Do I Have to Know That?"

While this proliferation of ancillary materials certainly provides a wealth of topic input, it seems to me to subvert the purpose for which it was designed, that is, to answer the basic question: Do I have to know that? Instead, it saturates without providing the direction requested.

That basic question can be annoying to most teachers. It is natural to want to respond, "I'm teaching it, and of course you have to know it. Otherwise, I wouldn't bother teaching it!"

But, are we really pandering to mediocrity by answering that question? Quite frankly, many of our students are doing mediocre work, because of one or more of the problems mentioned above. If we say to these students, "Here's the course material, you wade through it, pick out the truly pertinent information, make discriminatory judgment regarding what you need or need not memorize," we are actually saying, "Jump in the water and sink or swim." Too many of these students will sink, straight to the bottom. It is not wrong to offer these students "swimming lessons" at the entry level, to prepare them for the deep water of the advanced level courses.

If the available textbooks, with their expertly and painstakingly prepared ancillary materials, do not provide the basic "swim instruction" our students need, then what will? My solution has been to create my own supplementary booklets, carefully tailored to fit the material I present in class, and clearly outlining what the students in my class need to know. My "targeted input teaching" consists of two separate booklets, which are sold to the students at cost.

One booklet is the *Lecture Supplement*. It consists of approximately 120 pages of carefully drawn and labeled diagrams which are identical to diagrams and sketches which I present during my lectures, using an overhead projector. There is room in the margins for students to take some notes, though a lecture notebook is still necessary.

The second supplement, the *Sample Exam Questions* booklet, contains some 800 sample multiple-choice questions. At the beginning of the semester I advise my students that, while the questions on my exams will not be identical to those found in the booklet, studying that booklet will greatly enhance their potential for doing well on the exams. For my sample questions, I select many of those which my students have repeatedly told me are "tricky." The booklet contains only questions, no answers, so I am not "giving the answers away." I am, however, familiarizing my students with the type of questions I ask.

Writing the supplements is not as easy as it might initially appear. It requires a considerable investment of time to prepare the diagrams, write the exam questions, and distill out the most pertinent facts from the prepared lecture. However, it is an investment in time which returns a fair rate of interest.

First, once the drawings are made and prepared for the overhead projector, it frees up valuable lecture time which would otherwise have been used for drawing or writing on the chalkboard while the students slowly, and not always accurately, copied what the teacher was writing.

By carefully editing the handouts and having them printed and sold in book form, I not only saved my lecture time, but I also saved the department considerable money. The booklets are sold at cost to the students, at a nominal $5. But when the department was paying for the handouts, at approximately $5 per student, times 250 or more students, per semester, the cost certainly wasn't nominal.

Bonus: Display Your Teaching Talents

In addition to saving irreplaceable lecture time, the supplements prove beneficial to the teacher in yet another way. They help answer the teacher's question, "How do I demonstrate my skill as a teacher?" How, indeed, can a talented instructor make teaching ability evident? The supplements help by providing clear, open and honest ways to show what kinds of material you present in your lecture and, just as important, the manner in which you present that material. They are graphic demonstrations of the day-to-day experience of sitting in your lecture hall.

Teaching the "big course" at City University is not like lecturing in the rarefied air of the Groves of Academe. But it need not be fraught with frustration and exasperation either, nor need the teacher lower expectations to match the abilities of the so-called "lowest common denominator."

By initially investing the extra time and effort to create a custom-tailored supplement, the teacher can empower the students with a guidebook that bridges the gap between the students' own background and language, and the language and experiences of the country known as Bio 1. By bridging this gap, both students and teacher benefit.

Into the Larger Whole of Knowledge

by James P. Charpie

Ed.'s note: The following essay was written for a graduate course on college teaching. Students were asked to articulate a theory of teaching. Charpie is a Ph.D. candidate in the department of engineering science and mechanics at Penn State University.

"To make any lasting impression, there must be unity and completeness in the works of the human mind." So opens Jacques Barzun and Henry F. Graff's *The Modern Researcher*, and — if the complexities of teaching can be reduced to a single thought — so goes my theory.

Both by education and practice I am an engineer, and my teaching interests lie in the realm of physics and engineering, although, it will be seen, they are not confined to theory alone. A psychologist I am not, although any theory of teaching would, it seems to me, involve some psychology, however elementary it may be. If my theory is homespun, then in its defense I can say that I have been spinning it for many years!

It began its evolution when, at one point in the 10-year interlude between college and college that I worked as an engineer, I had to call upon some of the thermodynamics I had been taught as an undergraduate. That I hadn't learned it was, unhappily, more of a reflection on me than on the professor who taught it, but all that mattered then was that I didn't know it. So I studied enough to get over the immediate hump, then set about to *learn* it this time.

From page one of the preface I started, and it was a life-changing experience. That was more than decade ago, but the memory remains vivid to this day. For once there was time! And with time, God's wonderful creation, the mind, could work its wonders. I studied *all* of the book, not just the pieces a school term would allow, and I did most of the problems — many of them several ways — not just the few on a course syllabus. And if a problem proved intractable at one sitting, I simply laid it aside. If, a couple of weeks later, it still refused to yield, I laid it aside again. Few problems refused to yield a third time.

How can I describe what happened? There was no pressure, there was a surfeit of time, and there was my indispensable guide through the strange world of energies and entropies — the well-written textbook. The pieces found their homes in the integrated "whole" of the science — some into a larger "whole" than just thermodynamics — many, I knew, to remain there indefinitely.

I knew at the time that I was not practicing with isolated facts, to be used today and forgotten tomorrow, but fitting them into a cohesive "whole" — a structure that would be standing many tomorrows hence, a structure that was yet mostly an empty frame waiting for other thoughts and ideas to make their homes there. Building that structure and filling it are what I consider to be genuine learning, and in it I find great joy.

The mind's natural thirst for structure or order is a marvelous thing in its own right, but it plays the central role in my theory of teaching. What Barzun and Graff say about history could, I believe, be fairly applied to any branch of knowledge: "The writing of history requires a pattern, the reason being that the human mind cannot fix its attention on anything that does not present or suggest form. The mind tends to impose a form if one is not supplied."

Such a thought may seem to those familiar with the sciences as being hardly in need of stressing. The sciences are *too* orderly, they argue, orderly to the point of quenching all life, all interest. Isn't that what makes them boring? I say yes, precisely! In a classroom setting they are invariably presented as being handed down from some smoke-shrouded Sinai carved in stone as were the commandments of old. Yet nothing could be further from reality!

Explore Continuity and Significance

From the philosophers' stone to phlogiston to the ether, science abounds with spectacular, even comical, mistakes. The path to our present state of knowledge is as convoluted as the paths in the human brain. Advances in one field bear on understanding in others: there is *continuity*. No theory ever emerged from a vacuum. Paths leading to a theory are, to me, as all-important as the theory itself. In them lies the continuity of a subject and, ultimately, its *significance*. Why was it ever studied? How did it change the world? How did it change the life of its discoverer? How has it changed mine? What has it led to since then? *Why study it now?*

A subject's continuity — its links to the past and to the people who gave it shape — lifts it above the level of bare facts and breathes life into it. Barzun and Graff say, "It is for lack of comments and interpretations touching on the quality of belief that many textbooks and encyclopedia articles give such a starved and false image of the ideas that have moved great men or inspired great movements. Students who memorize the tags to pass examinations literally do not know what they are talking about." Elsewhere they note, "Every subject can be made interesting, because every subject *is* interesting. It would never have aroused human curiosity if it were not."

My own experience with thermodynamics could not realistically be reproduced in a typical college classroom, but what it taught me could, most effectively, be applied there. My theory of teaching constitutes a desire to facilitate learning by presenting material imbued with life and interest in a form that the human mind naturally gravitates toward, that can be integrated into the larger "whole" of a person's knowledge.

If I can inspire a student to expand that "whole" beyond the realm of science to other realms, to study a

subject for the enrichment it brings him or her, and to study long after college is over, I will consider that I have "produced" an educated person.

Students and Deadlines

Students and deadlines sometimes have trouble meeting. Successful meetings may happen more often when you put due dates on the syllabus and frequently announce them in class. But are there other ways to motivate students to plan and prepare for upcoming exam and assignment due dates? What about giving them a voice in setting those deadlines?

Consider this strategy: The course calendar, as it appears on the syllabus, includes general topics in the order in which they will be covered. The second or third class session you distribute a calendar with the general topics, relevant university dates (like drop/add deadlines) and legal holidays. You list course assignments on the board and offer some general guidelines:

- "The three exams need to cover relatively equal amounts of material."
- "I need at least a week to respond to your term paper proposals."
- "If you want homework graded before the exam, it should be in my hands 10 days in advance."

You and your students then decide when to schedule exams, assignments and other activities. The students write those dates on their copy of the calendar.

Students may need some time to consider "good" dates in light of assignments and deadlines in other courses; they might need to take the calendar home and return the next class period with tentative dates. If it's a small class and the due dates are *not* for exams, it might be possible for individual student calendars to vary. This way instructors encourage students to plan a schedule for the semester *and* distribute their paper-grading tasks more evenly across the course.

Will the strategy make students and deadlines meet more regularly? Who knows? But it might be worth a try.

That One Negative Comment ... Again

It happened to me again, and I didn't find much solace in the words about negative student comments I'd written for the April issue. I do know that what I wrote there about how faculty focus on negative comments is true of me, despite my admonitions. Maybe if I tell the story it will help me better understand the problem and why my advice didn't help me very much.

I taught a graduate course on college teaching this semester, with 21 students from departments and programs across the campus. They were all there because they wanted to be. In fact, some of their programs don't even count the course — but that's another story.

It's been a wonderful experience, one of those "good" classes we're genuinely sad to see end. The last day we talked about student evaluations, what the research said about them, how universities could use them and how they often aren't used very constructively. Then I distributed the form, asking students to complete it and place it in the envelope before they left.

All the way back to the office I debated whether or not I should take a peek. I put them in our office mailbox, then took them out. Curiosity got the best of me: I took them to my office for a quick look. The results were splendid, mostly sixes and sevens on the seven-point scale. My blood pumped. The students shared my feelings about our time together. Oh, how I loved teaching!

Then I came to it — straight ones. Somebody had given me the lowest possible evaluation in every single category. I couldn't believe it. Stupidly I turned it upside down so the ones were on the seven side of the scale, but I couldn't lie to myself about the upside-down printing. Next, I decided the student had misread the scale, meant to give me all sevens but got the high and low side of the scale switched. I read the directions: they were explicit. Nobody who had read them could have made that mistake.

I put all the other evaluations back in the envelope; I wondered if I could live with myself if I put that one in the garbage. I was sorely tempted. It would feel so good to rip it up and pretend I'd never seen it. I carried them all upstairs to the mailbox.

I returned to my office and picked up my grade book. I went through the names of every student, trying to imagine who could have felt so totally negative about what everyone else thought was a wonderful experience. I felt betrayed. Everyone responded so positively, in class, in the office, on the phone. Somebody had fooled me. But why? Why didn't that person make his or her complaints known? At least we could have talked about them. After 20 minutes I still didn't have any idea whose evaluation that was.

On my drive home and throughout the evening I never thought once about all the other evaluations. Not until the next day did I even remember the piece I'd written in the newsletter. When I read it again, I kept thinking, "Somebody else must have written this."

I've distanced myself (at least somewhat) from that one negative evaluation. I've done all the necessary "intellectual" things to put it into perspective. I've taken the advice I offered, now, after the fact, probably because I'd lose still more face if I continued to ignore it.

But the fact remains: that wasn't what I did when I was on my own. What have I learned? It may be too soon to tell, but I think I've once again encountered firsthand the deep-seated vulnerabilities inherent in our profession. Negative evaluations hurt, a lot. I've also learned it's easy to offer advice, difficult to follow it — even if it's your own advice.

The Teaching Professor

Volume 4, Number 7 August/September 1990

How Do We Change?

Most faculty who read *The Teaching Professor* are interested in instructional change — improving their teaching effectiveness. We try to include in the newsletter a variety of ideas and information on teaching and learning with the potential of improving practice.

However, what's proposed in print has no effect on classroom practice if changes aren't implemented. For this reason it's important to understand how faculty do in fact change the way they teach.

Several researchers have studied the process and offer useful descriptions. Ellen Stevens, who studied the change approaches of faculty at a state university in California, proposes three models.

The first she calls "*reactive thinking.*" In this model instruction changes gradually, with a few strategies and techniques being tackled at a time. Those policies and practices are changed completely, "alternated" with other techniques, according to Stevens. The motivation for change here derives from interest in using what meets with "immediate" approval. If a particular class wants homework counted in the final grade calculation, it gets counted. If another class doesn't want the homework graded, the policy is exchanged for one in which homework doesn't count.

In the second model, Stevens sees faculty engaging in what she calls "*reflective tinkering.*" This too, describes a gradual change process; but in this case rather than wholesale substitution of one instructional technique for another, the technique is changed slightly, and usually more than once, as the faculty member seeks to perfect it. Using the homework example, in this model the faculty member might decide to make graded homework an option to be selected at student discretion.

Finally, faculty "*innovate.*" In this model, the change in polices, practices, and techniques is dramatic and, according to Stevens, generally includes changes in the organization of the content, the structure of the assignments, and the methods of presentation. In other words, for all intents and purposes, it's a brand-new course. "Innovation" in this sense doesn't imply that the changes are new to teaching, however, but just that they're new to this individual instructor.

Robert Kozma studied instructional innovation spawned by two programs sponsored by two foundations. Both promoted individualized, computer-based, and inquiry-based approaches to instruction in a variety of different institutional settings. The most "characteristic" aspect of the instructional innovations Kozma noted was their "evolutionary" nature: "New instructional practices are built on past practices."

Faculty who discovered a technique that worked well in one class started using the technique in a second class. Even new approaches are "alternative expressions of attitudes, values, preferences, and philosophies embedded in prev. .y used techniques."

Innovations Not Systematic

Kozma didn't find much evidence that innovations were planned in response to an identified problem or that other solutions were considered before the innovation was adopted. Moreover, evaluation occurred infrequently and was almost descriptive. "Although the deliberateness of the planned change framework may make the innovation process more effective, it is not an apparent characteristic of the way faculty members normally change their teaching practices."

Additionally, Kozma found that if these projects were collaborative, as opposed to the isolated efforts of individuals, they were much more likely to continue, be disseminated, and become institutionalized. Kozma notes the strong orientation of faculty to work alone, but his findings lead him to conclude that this need for autonomy must be balanced against organizational considerations.

The nature of both these studies are *descriptive*, not *prescriptive*. They describe how samples of faculty went about the process of changing the way they teach — not how faculty should or could tackle instructional change. They provide a useful mirror for reflecting about our own processes of change and a place to begin dialogue about alternative and possibly more effective roads to instructional improvement.

Stevens, Ellen, "Explorations in Faculty Innovation." ***The Journal of Staff, Program and Organizational Development*** **(Winter 1989): 191-200.**

Kozma, Robert B., "A Grounded Theory of Instructional Innovation in Higher Education." ***Journal of Higher Education*** **(May/June 1985): 300-319.**

Advice to Students

Ed.'s Note: There are lots of ways for faculty to let students know they care. The most effective ways for you will be the ones that reflect your style and kind of concern. They don't always have to be loud, explicit statements, either. Consider this example excerpted from the Accounting 101 syllabus of John Mitchell, who teaches at the Mont Alto campus of Penn State U.

Some students find this course relatively easy. Unfortunately, many others do not. For those of you who are worried about finding themselves in the second category, here are some suggestions.

1. Bear down at the start of the course. This seems like a cliche. It's unlikely that you'll find many professors who tell you to "goof off" at the start of the course. However, it's particularly important to get off to a good start in accounting, because most of the later material builds on the material from the beginning of the course. By learning early, you'll be sparing yourself double work at the end of the course.

2. Emphasize homework. Accounting is much more readily understood and remembered if you work through the problems. For example, in the Fall '87 semester, the GPA of the students submitting 80% or more of the collected homework was 3.00. The GPA of the students submitting 40% or less was 1.41.

3. Ask questions in class. If you've done the homework and still don't understand what I'm talking about, it's likely that you're not the only one. Feel free to ask questions.

4. See me after class. I see my job as teaching *all* the students, not just the A and B students. Don't be too embarrassed to come for help if you're struggling.

"A university: 1) Something held together by a central heating plant and a parking problem; 2) A circus that never leaves town; 3) A conglomerate that, from the outside, looks like General Motors, but is really 162 Mom and Pop shops."

— Alleen Pace Nilsen, "How to Read Between the Lines: A Dictionary for Modern Administrators," in *Change*, May/June 1990, p. 46

Textbook Organization

by J.O. Maloney, U. of Kansas

Over the years I have become increasingly aware of the failure of typical textbooks to establish in the minds of students a clear concept of the structure of the material that they present. Most texts give adequate attention to details, but offer few overall views.

I observe the deficiency most clearly whenever I ask the students in a class to prepare a summary of a chapter that has just been discussed and worked over. The class members are asked to develop the summary in the form of an organizational diagram.

They are informed that an outline of the chapter will not do; what is wanted is some sort of diagram which makes clear the central idea that is dominating the material, which shows the relations of the various sections of the chapter to that central idea, and which indicates how the examples given and the problems solved contribute to the distinct comprehension of the central idea. They find the assignment difficult, and in their presentations a number of different opinions arise as to the identity of the central idea and of the kind of relations that idea bears to the sections of the chapter.

There are several possible explanations for their difficulties. One obstacle is the inherent nature of a book, which is composed in essentially a linear or filament form: one word follows another, one sentence another, one paragraph another, one chapter another. This form makes it difficult for authors to clarify interrelations among the parts of the material other than those they have chosen to follow in the statement of thought. They may, to be sure, break up their work into chapters and subchapters; they may also provide introductions, cross-references, flashbacks, and summaries. Nevertheless, the basic difficulty will remain: a multidimensional subject is very difficult to present and comprehend clearly in the linear form of treatment.

This material is excerpted from "Improving the Organization of Undergraduate Textbooks," a paper Maloney delivered in 1986 at Heidelberg, Germany, at a conference on improving university teaching.

THE TEACHING PROFESSOR

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Getting Ready: Checklist of Questions for the Teacher

Ed.'s Note: In our May issue we wrote about the value of checklists, offered advice on using them, and solicited favorites from our readers. As usual, you responded generously. As you begin preparing for a new year, may we recommend thoughtful consideration of these questions? They're excerpted from a checklist edited by T. Clearly and published by The Learning and Teaching Centre, U. of Victoria, Canada. We reprint with the Centre's permission.

✔ **How Can I Improve Content and My Presentations?**

- ❑ Is this the year to fine-tune or overhaul a course?
- ❑ Is there an area ... a lecture ... a subject area that never seems to go well? Is it my fault? Is it an oddity, accidental, traditional, or inherent?
- ❑ What has worked best in past years? Can I incorporate more of it, expand on the subject, spend longer on it, schedule it where it will do more good?
- ❑ Can I drop part of the course? Should I? Would anyone be concerned?
- ❑ Is it time to scrap my notes, or research trouble areas again, or bring in a guest lecturer?
- ❑ Would it help to integrate contemporary material, a current event, the "real world," a recent research breakthrough, a new school of thought, fresher jargon, or less of the old kind?
- ❑ How thick is the dust? Have I relied for too long on the same dog-eared notes or a tired, dated text? Is my reading list an antique or a bore?
- ❑ Are the texts I use the *best*? Or merely the ones I'm used to, the ones on which I have notes in abundance?
- ❑ Have student interests and tastes changed significantly?
- ❑ What haven't I tried? Is there something I can add or a new approach?
- ❑ Would rescheduling some of the material help? Can I usefully change the format: discussion to lecture, lecture to discussion, split the class, ask for seminar leadership from students?
- ❑ Have I used demonstration enough? Properly? Are demonstrations most useful at the beginning, the middle, or the end of a class?
- ❑ Do I need new demonstrations in some lectures? Which ones?
- ❑ Have I used films or the overhead projector effectively? Enough? Too much? Do students prefer the projector or the board? Why?

✔ **What Is a Reasonable Work Load? What Is Realistic?**

- ❑ How much work (readings, assignments, workshops, labs, etc.) can I reasonably and usefully impose? How much outside of class?
- ❑ Are my demands heavy, average, low? Are they appropriate?
- ❑ Will the students do all that I ask? Should they? Can they? Have they done it in the past?
- ❑ What about labs? Do they need to be revised? Are they still relevant?
- ❑ How much should I be directly involved in the labs?
- ❑ Should a lab precede or follow corresponding lecture material? Should labs complement or supplement lectures?

✔ **Why Do It? What Is It Worth?**

- ❑ In a few words and all honesty, what's the point of the course as I teach it? How easy is it to answer that question?
- ❑ What's the value of the course, and my ways of teaching it, for the student or the discipline?
- ❑ If I were a bright, perceptive, committed student, what would I like *most* about the course and my teaching? What would I like *least*?
- ❑ How can I improve my performance, planning, preparation, and delivery?

✔ **What Assignments, Demands, and Responsibilities Are Appropriate?**

- ❑ When and what kind? How should tests and papers be scheduled? What options do I have? Have I thought it through carefully?
- ❑ Should there be several shorter papers or one long one? Can I or should I allow for individual choice in assigning written work?
- ❑ Are my tests enough? Too much? Would more frequent tests work better?
- ❑ Can I change — do I *want* to change — my methods?

Why do it? What is it worth? In a few words and all honesty, what's the point of the course as I teach it? How easy is it to answer that question?

- ❑ Should I give a lab exam? If I do, how much will it count toward the lab grade? How much will the lab grade count toward the final grade?
- ❑ Have the decisions I've made in this area worked in the past?
- ❑ What do I test for? Do my tests primarily require and reward knowledge ... intelligence ... memory ... stylistic finesse ... breadth and depth of reading ... originality ... effort? What *should* they test?
- ❑ What do I value in my students' work? Do I make it clear before they write?
- ❑ Will I allow sufficient leeway in my assignments to accommodate student interests? If I accept an alternative project, how will I evaluate it?
- ❑ What do my tests do for — or *to* — my students?
- ❑ Did students *learn* by preparing for and taking my tests, or just prepare to *survive* them? Am I satisfied with my answer to that question?
- ❑ Would oral, take-home, and open-book exams help?
- ❑ Will I use oral exams? Together with written ones? Routinely? Or as a means of assessing students with special problems in writing exams?
- ❑ Should I try open-book or take-home exams? Consistently or occasionally?
- ❑ What are the limitations on testing methods in my department?

What have my goals and hopes been for the course? Were they appropriate? Were they fulfilled or disappointed?

✔ **Shall I "Condemn to Freedom" or Prescribe?**

- ❑ How specific or prescriptive should my paper assignments be? Should I assign topics? Or require students to devise their own? Which method has worked best in the past for students at the level at which I'll be teaching?
- ❑ If I assign topics, will the library or other facilities be able to meet the demand for crucial materials? How can such research problems be eased?
- ❑ If I allow free choice, am I encouraging plagiarism, paper-recycling, or similar abuses?
- ❑ Can the students help one another? Should I allow or encourage group or collaborative effort on assignments? Will this improve performance and learning or cause problems for me or the students?
- ❑ Would it help to provide students with successful papers from other years, as examples? Would there be a point in having students exchange papers? As a stimulation or a sharing of thoughts or information? Or for criticism and response?
- ❑ Can I use the special strengths and knowledge of some students to aid others? Would study groups or study guides based on shared notes and research be useful?
- ❑ Do I love footnotes as much as they think? In assigning and grading papers, will I encourage or discourage the use of secondary materials?
- ❑ How much research will be enough? Why? Have I adequately explained and justified my position to students in the past?
- ❑ How much time and effort is it proper for me to put into helping individual students?
- ❑ What kind of help should I give?
- ❑ Should I be willing to look at preliminary drafts of assignments, to point out errors and make suggestions? If so, will I extend such help consistently on request? Is that fair to those I don't help?
- ❑ Where can I send students who need more help than I can give?
- ❑ Should I allow optional assignments to improve grades? How much weight should such assignments carry?
- ❑ Will optional assignments and reading really be optional, or, in effect, required for those who wish to do well? If the latter, can I justify my methods?
- ❑ What have my tests told me?
- ❑ What have my goals and hopes been for the course? Were they appropriate? Were they fulfilled or disappointed, according to test results?

Will this be the year I reread old evaluations, remember my experiences from other years, and do all the grand things I've always hoped to do?

Will this be the year I reread old evaluations, remember my experiences from other years, and do all the grand things I've always hoped to do?

[The complete checklist, in booklet form, may be purchased from The Learning and Teaching Centre, Box 3025, U. of Victoria, Victoria, BC V8W 3P2 Canada, for $2.00 a copy. Payment should accompany all orders.]

Helping Students Learn Science

Frequently students have trouble succeeding in introductory science courses. Why? Is it only that they lack prerequisite math skills?

Kathleen Turner Wiesenfeld decided to use a Learning Skills Supplemental Course for General Chemistry to answer those questions. Using interviews, she tried to determine exactly what students were doing when they tried to learn chemistry. "I found the basic problem was in their approach to the subject. Their strategies for learning chemistry were very different from those that my peers and I had used as successful students in physical science."

Wiesenfeld believes faculty must teach students the strategies they need to succeed in chemistry. She suggests four.

First, a student needs to "*learn to think like a chemist.*" To help students do that, faculty need to share the way they think about chemistry (in this case) and the images they use as part of that thought process. "For example, we make mental pictures of invisible chemical systems .... We do this so much that molecules and atoms become almost animate for us." Chemists (and other scientists too) connect "macroscopic observations to microscopic phenomena." Wiesenfeld suggests we "remind students to make connections between what is observed and the action at a molecular level. This is so automatic for chemists we forget that not everyone is inclined to do it."

Second, "*Use paper and pencil to 'read.'*" "When students in trouble say they 'read' a chapter, they mean the same way as they would read a novel, while lying on their bed with the stereo blaring." Using the paper and pencil method, students are encouraged to work through, that is, to practice a concept when they read about it. Wiesenfeld goes so far as to ask students to turn in these working notes.

Third, "*Rework lecture notes.*" "When I found students having difficulty with concepts given only in lectures, I assumed they were unable to take good lecture notes, but careful perusal showed complete lecture notes." The problem is that students do nothing with those lecture notes. They may go back over them, but they do not in any mechanical way rework them. They do not practice the problems that appear in their notes.

Finally, "*Solve problems by working from both ends.*" "We show students how to solve problems that are simple for us, but can be misleading from them. Students assume that one should mentally compose a solution and then simply write out the steps as their instructor does. They don't realize that when we solve problems at our own level there are wrong starts, drawings, and discarded sheets of paper. We need to show students what we do when we don't know what to do." Wiesenfeld tries to make her students see that solving problems is like working a jigsaw puzzle. You have to start somewhere and from that point you work out in all directions.

We think these suggestions pertain to many disciplines — not just chemistry. Knowing how students approach learning tasks in any field is important. That knowledge enables us to adapt our instructional strategies and propose more effective ones to students.

Wiesenfeld makes an important observation in regard to our efforts to help students succeed in science courses. "This task is impossible if we, the teachers, stand at our blackboard writing and talking while the students' responses are limited to 'I see,' 'yes,' and 'uh-huh.' Showing students which numbers to put into equations is not helping them to learn scientific concepts. To see what the student is *thinking* we have to put down our chalk, get away from the blackboard, and let the student do any writing or calculations. It is so hard to resist the urge to show them what to do that I consciously put down my pencil or chalk when a student asks a question."

From: "Helping Your Students Succeed in Chemistry" by Kathleen Turner Wiesenfeld in *2 Y C Distillate* 8:1 (Winter 1990), published by the American Chemical Society.

Do Departments Influence Student Learning?

Clearly, ultimate responsibility for learning rests with the student. Much as we might like, we cannot learn the material for them.

However, it's possible to be too complacent (and smug) about the importance of our role in their learning experiences. Blame for failure and credit for success are shared. Collectively as departments and individually as instructors, we significantly influence the approaches students take to learning.

Some interesting research in Great Britain sheds light on the nature of our role. 2,208 students from 66 departments (including engineering, physics, psychology, economics, history, and English) completed an "Approaches to Learning" inventory. Factor analytic techniques identified four orientations to learning (three of them identified in previous work in Sweden by Ference Marton and colleagues):

Meaning — an intrinsic approach characterized by a genuine interest in what's being learned and by active attempts to incorporate new ideas with existing knowledge and personal experience.

Reproducing — an extrinsic approach motivated by fear of failing and characterized by narrow concentration on memorizing details.

Strategic — an approach premised on the need to achieve. Learning processes are structured and organized using either *meaning* or *reproducing* approaches — whatever it takes to get the desired grade.

Non-Academic — an orientation that shows as its dominant features negative attitudes toward studying, a tendency to jump to conclusions and overgeneralize.

Students ir this study were also queried, via a second questionnaire, as to their perceptions of the courses and teaching in 66 departments. Profiles of two different kinds of departments emerged when the student perceptions were analyzed.

First were *student-centered* departments, characterized by good teaching, faculty open to students, and students offered freedom in learning. In contrast were *control-centered* departments, where teaching was formal, faculty were under heavy pressure to cover content and assess rigorously, and students had little freedom to choose courses and study methods.

Are the four approaches to studying and the two department types related? Yes. In the words of the researchers, "Good teaching encouraged students to put more effort into understanding a problem or topic. Students who were tackling a task or a problem in which they were interested were more likely to take deep approaches. On the other hand, inappropriate assessment, heavy workload, and perceived inadequacies in teaching led students away from understanding and towards strategies of reproducing."

Said another way, "Where there is *good teaching and freedom in learning* ..., students seems more likely to develop an orientation towards meaning. But where the context is one of heavy workload and a lack of freedom in learning, students respond by adopting reproducing strategies."

Reference: Ramsden, P., and Entwistle, N.J., "Effects of Academic Departments on Students' Approaches to Studying." *British Journal of Educational Psychology*, 51 (1981): 368-383.

Shadow Messages

by Iver Bogen, U. of Minnesota, Duluth

I went to consult with a colleague the other day about a project I was working on. We set the appointment for 3:15. I arrived on time. Although he was on the phone, he waved me in. And he stayed on the phone and stayed on the phone. I was uncomfortable — sweating in fact — as they continued talking about what seemed to be trivial issues. Waiting, I felt I didn't belong there, and wanted to leave. Although I was experiencing something, I wasn't sure what. Only after thinking about it was I aware that words and actions were at odds. *Surface* and *subliminal* were in conflict.

The overt message was that I was welcome and expected. The meta-message was that I didn't count. Furthermore, albeit unconsciously, I had already decided I was never coming to this office again. All I know is that I said to myself, "I can't work with this person."

What is linear and overt is different from what is unconscious, non-linear, covert, and of which we are for the most part unaware. As receivers of what I choose to call *shadow messages*, we respond to them unconsciously, and they have an impact on what we do. We decide at some deeper level whether we want to relate to this person and to what this person is offering. That is particularly important in an educational setting.

Shadow messages are sent in so many ways:

- Spatial. Where is the desk in the office? Is it a barricade between the occupant and me? How close can I stand to this person? Is the distance greater than what is usual?
- Visual. How formally is she dressed? What pictures are on the walls?
- Verbal. Inflectional tone, willingness to translate technical terms into common language.
- Attitudinal. Willingness to be fallible: "Hey, I'm sorry I made a mistake on that." Willingness to make a journey together: "It's great that you want to learn about that."
- Communicated through availability. My friend, Bill, always seems to have time to talk. It feels great. On the other hand, I can recall trying to see another university person when it was impossible to mesh schedules in less than a month and a half.

This isn't to say that we don't have roles to play as teachers. Part of being an educator is to know the territory — where our personal/professional boundaries are. Students are just as easily confused when boundaries are too permeable as when they are impermeable. Sometimes, though, instructors don't know where their boundaries are; that is, they invite students to supper individually or to a show or to bed. That is a serious territorial problem. And yet students need our friendship.

Sometimes instructors put up barriers to protect themselves. They do this out of ignorance, tradition, or fear of being spontaneous or expanding their own possibilities. There's not a lot of joy here. Not a lot of room for unique humanness.

People are so complicated, anyway. They don't fit into the little boxes of our expectations. Ah, the Procrustean bed: when people don't fit into our pre-conceptions, we chop off their arms and legs to make them fit. But part of trust, without which learning is handicapped, has to do with accepting students as they are, with knowing who we are and walking educationally in the midday sun where our bodies cast no shadows, where what we say and what we do are consistent.

So, what kind of impact do I have as a person or as a teacher? Most of us go through life not knowing the answer to that question, until one day our wives or husbands say, "That's it! I've had it." Or our students turn us off and say to themselves, "I can't learn here."

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The TEACHING PROFESSOR

Volume 4, Number 8 October 1990

Irritating Behaviors: Theirs and Ours

Student behavior in class has been known to irritate faculty. Fact of the matter, faculty behavior in class has been known to irritate students. Drew Appleby decided to clarify this all for us by surveying both a faculty and student group, asking each to identify irritating classroom behaviors of the other. In this survey 43 faculty members and 214 students were asked to answer this question: "What three behaviors of your [teachers/students] irritate you the most?"

Considerable consensus emerged when faculty answers were analyzed. Although 30 different student behaviors were identified, the nine cited most often accounted for 77% of the responses. In order they were:

- talking during lectures,
- sleeping during class,
- chewing gum, eating, or drinking noisily,
- being late,
- cutting class,
- acting bored or apathetic,
- not paying attention,
- being unprepared, and
- creating disturbances.

Of the 645 student answers, their 35 most common responses fell into four categories, with the "communication problems" category containing 50% of the responses and the "unresponsive to student needs" category 41%. The most common communication problem listed related to poorly presented lectures: monotone delivery, digressions, too fast, rambled, repetitious, disorganized — to name a selection of complaints. In the case of not responding to students' needs, the most common complaints were keeping the class beyond the end of the period and arriving late for class. Students also objected to faculty who have a condescending attitude toward students (treat them like children), to faculty who act as if their class is the only one students are taking, and to faculty who feel that their point of view is always correct.

Sometimes the behavior of students and that of faculty become circular, with each contributing to the undesirable response of the other. Example: students yawn, gaze around the room, and otherwise look bored. The instructor reads this behavior as students not caring and concludes, "If they're not interested, why should I try to be interesting? I'll just do it and get it over with." So, there's nothing but lecture, endless instructor talk, and more students get bored and yawn and gaze around.

Results from this survey document in a more definitive way this reciprocal relationship. Appleby notes five pairs of closely related faculty and students behaviors. Consider three examples:

- Teachers are irritated by students who come to class late. Students are irritated by teachers who come to class late.
- Teachers are irritated when student pack up their books and materials before the class is over. Students are irritated when teachers continue to lecture after a class period is over.
- Teachers are irritated by students who cut class. Students are irritated by teachers who cancel or don't show up for class.

Maybe, just maybe, if students and teachers would agree not to irritate each other in these ways, classroom experiences could be more pleasant for both.

Reference: Appleby, Drew C. "Faculty and Student Perceptions of Irritating Behaviors in the College Classroom." ***The Journal of Staff, Program, & Organization Development*** **(Spring 1990): 41-46.**

"Personally, I never worry about flying unless the pilot starts sounding nervous. The same seems true in classroom learning. When the students are convinced that the instructor is 'in control' and knows where the class is going, they will feel more comfortable about taking risks."

— Marilla Svinicki, *Teaching Excellence*, Fall 1989

The Mentor Model in the Senior Writing Seminar

by Jerome L. McElroy, St. Mary's College (IN)

College professors in all fields need to search for ways to improve student writing and learning, and ways to better integrate their own scholarly activities with undergraduate teaching. I use a mentor model in my senior writing seminar in economics to respond to both needs.

This seminar is a required capstone course designed to provide majors with a substantive research and writing experience. It aims: (1) to train students in literature search and quantitative analysis, and (2) to produce a serious paper of sufficient quality for conference presentation and/or journal submission. Content depends on my current research interests. The development problems of small Caribbean islands has been our focus for the last three years.

The course moves through two phases: We begin with the content (background reading, lectures, student text presentations) and then phase in the research and writing program. Creating the paper involves five steps, date-marked on the syllabus:

- hypothesis selection or introduction,
- literature review,
- methodology,
- data analysis and interpretation, and
- summary and policy implications.

I see these five sections three times: first as separate raw pieces, second as integrated into a complete first rough draft, and third as the final revision to be graded.

I integrate my own ongoing research into the classroom in the form of a lab demonstration, to provide a standard by which students can judge their own work. Specifically, about two weeks before the students' assignments are due, I present:

- a testable hypothesis with a justification as to its importance,
- a summary of the literature and the gap the paper will close,
- a methodology that justifies variable selection, statistical technique, and data sources,
- an analysis and interpretation of results, and
- a summary of findings and further research and policy implications.

My experiences with this model have persuaded me that concretely doing the writing with students is preferable to more abstractly talking about it. Student writing has clearly improved over the three years I have been developing the mentor model. Of 20 papers from past seminars, with my assistance three have been jointly presented at professional conferences and one has been accepted for journal publication. My collaboration has included general editing for journal style, rewriting and substantially adding to the literature review, and sharpening up the policy conclusions at the end.

Mentoring undergraduate writing in the context of a capstone seminar course in many fields offers a number of potential advantages:

- It is relatively easy to implement.
- Presenting their work before the academic community motivates students. They also take the course content and the literature somewhat more seriously as they view themselves as potential contributors to a field of knowledge.
- The major project is broken down in manageable tasks, and associated problems are quickly identified and expeditiously handled. This means no global rewrites for students or massive correcting for teachers.
- Students have a clear idea of what content and structure are expected in each task because of the mentor demonstrations. This often allows collegial activities to flourish in the classroom as students share literature, discuss data interpretation, and offer pertinent suggestions for peers and instructor alike.

Faculty benefit as well. This model offers an opportunity to integrate research, writing, and teaching. It enhances scholarly output — a new article every seminar plus possible joint work-ups of student papers in the future.

THE TEACHING PROFESSOR

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Focus

Concept Mapping: A Brief Introduction

by Walter G. Wesley and Beverly A. Wesley, Moorhead State University

We would like to briefly introduce the process of concept mapping and present one example of a concept map. Concept mapping is a useful tool for externalizing and clarifying the understanding of concepts and their interrelationships.

We all enter the classroom with pre-existing conceptual frameworks that have developed from previous learning. These existing frameworks provide a base for learning and integrating new knowledge. However, our existing conceptual frameworks may range from the chaotic to the well-formulated. Frequently those frameworks include misconceptions or inaccurate understanding which may interfere with learning and integrating new knowledge. Concept maps provide a visible picture or road map of our understanding or misperceptions of a given piece of material, and thus they are likely to indicate where we need to develop more accurate conceptual frameworks.

Concept maps provide a visible picture or road map of our understanding or misperceptions of a given piece of material, and thus they are likely to indicate where we need to develop more accurate conceptual frameworks.

A sample of concept mapping follows this piece. A concept map will include a number of concepts, show the relationships between them, and reflect the degree of generality and inclusiveness of the concepts, which is determined by the context of the material being mapped.

General concepts should be at the top of the map, with the specific concepts arranged below in the degree of their generality. The learning task itself determines the levels of a given concept map. In a typical map concepts are written inside circles, ellipses, or boxes. Related concepts are connected by lines, and the nature of the relationship is denoted by connecting words that form propositions. Connections between concepts are linear as well as horizontal, so that a concept map is read from top to bottom and left to right as a sentence or series of sentences.

For example, in the sample concept map the center section would read as follows:

> "A **concept map** *shows* **relationships** *between* **concepts** which *are* **perceived regularities** *in* **objects** and **events** which are *designated by* a **label**, *for example* a **word** or other **symbol**."

The other two main branches of the sample map can be read in the same way, and there are cross-connecting links that may be read as separate sentences or may be incorporated in one or more of the three map segments. It is these cross-links that show relationships between the concepts across the major segments of a concept map.

Concept maps may be used in various ways, such as

- evaluating students' prior knowledge;
- extracting meaning from textbooks, field studies, or journal articles;
- planning lectures, speeches, classroom presentations or papers;
- curriculum planning for a course or program; and
- assessing student learning.

In many of our classes, we routinely require students to hand in a concept map of each chapter covered. For some classes we also use concept maps as the main tool for evaluating learning. Most frequently this is done using cooperative groups.

Most students recognize the value of concept maps for providing a visualization of their learning and for gaining a deeper understanding of material that they map. However, the major complaint expressed by students is the time required to construct a map; this concern can be used to emphasize the difficulty of and time required for true conceptual learning.

Our experiences, and those of others, indicate that the use of concept maps gives students of all ages increased control over their own learning, as well as improving and making it more meaningful.

For more information and many examples of concept maps, see Learning How to Learn *by Joseph D. Novak and D. Bob Gowin (Cambridge University Press, 1984).*

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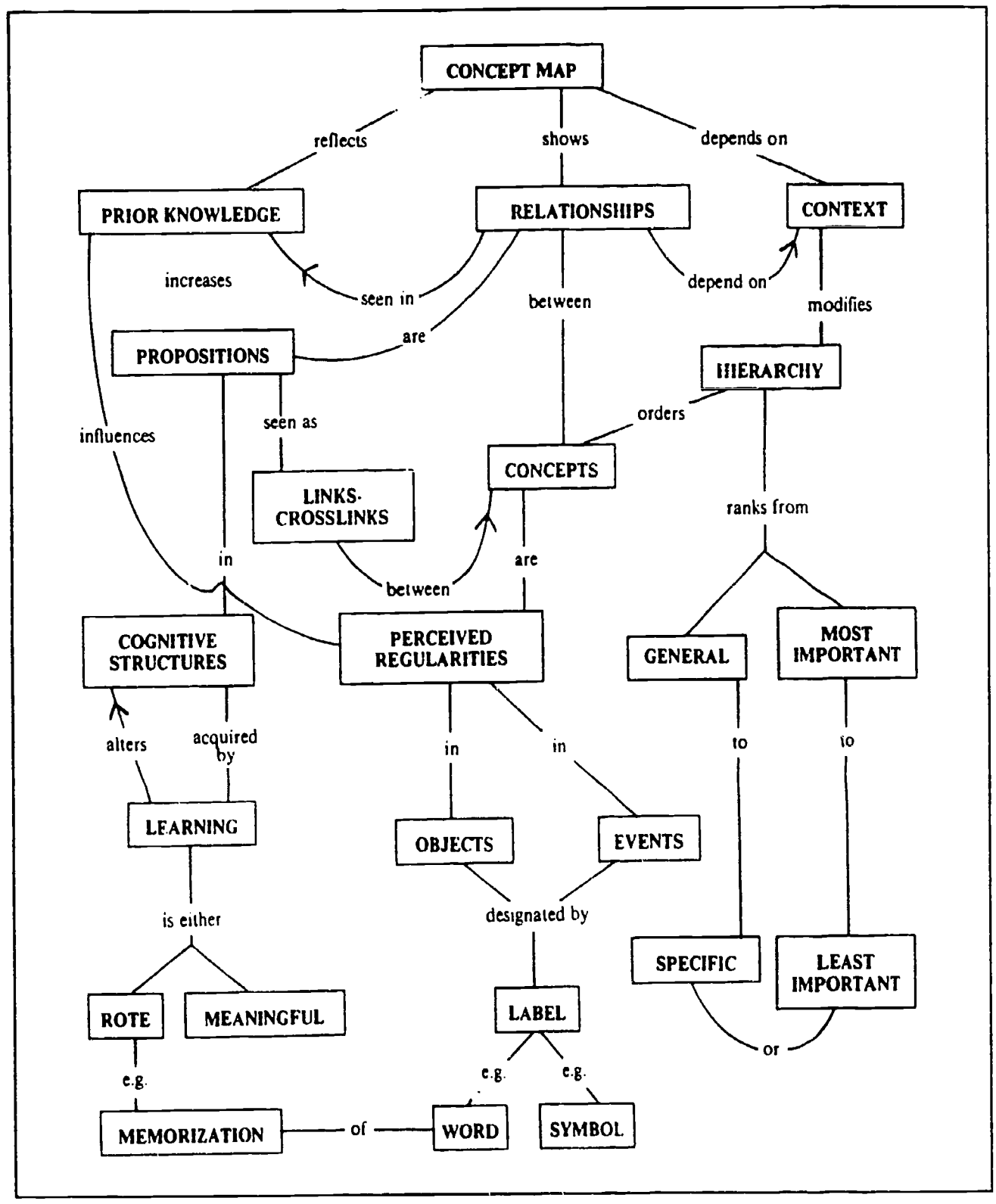

"The spirit of generalization should dominate a university. Whatever be the detail with which you cram your student, the chance of his meeting in later life exactly that detail is almost infinitesimal; and if he does meet it, he will probably have forgotten what you taught him about it. Knowledge does not keep any better than fish. The really useful training yields comprehension of a few general principles with a thorough grounding in the way they apply to a variety of concrete details."

— Alfred North Whitehead

Teaching Tip

Editor's note: Sometimes even a seemingly small technique can revitalize otherwise tired instruction and assignments. Witness these two examples. Neil Williams submitted his piece last January just prior to the beginning of classes. I decided to try it. Every day I simply put the quote on the board or passed out a copy as part of another handout. On the one day I forgot (near the end of the semester) the complaints were loud and many — and so were the compliments on those infamous student evaluations.

The Quote of the Day

by Neil F. Williams, Eastern Connecticut State U.

"I hate quotations. Tell me what you know," said Ralph Waldo Emerson. Nevertheless, it's probably safe to say that all of us academicians have used quotations more than once in our lifetimes of writing papers and articles to support an argument or clarify a point of information. Yet, how often do we use quotations in the classroom where we teach?

If you are looking for a relatively simple way to become a more effective teacher, stimulate your students, heighten their cultural awareness, integrate interdisciplinary subject matter with your own field of study, or just simply augment the "academic ambience" of your classroom efforts, you might try using a well-chosen quotation each day.

The method I've used for years is the "Quote of the Day." At the start of every class, before I do or say anything else, I go directly to the chalkboard and, in the top right corner, write a brief quotation. Every day's quote is different, and the sources range from William Shakespeare to Bruce Springsteen (both famous poets), from Aesop to Erma Bombeck (both famous philosophers).

Sometimes, I write the quotation and don't talk about it at all, allowing it to stand on its merits, but usually I try to work the meaning or application of the quote into my discussion/lecture. As I do, I discuss its author and the author's contributions to our world.

My favorite opening day quotation is Thomas Edison's "Genius is one percent inspiration and ninety-nine percent perspiration." As I guide the class through the course syllabus, I begin to talk about what it takes to be successful in college — or anywhere else for that matter. The point is quickly driven home with Edison's words and some discussion about how the light bulb created more leisure time for Americans.

My job is to prepare future physical education teachers, so I have an almost endless list of interesting quotes. Bombeck's "The only reason I would take up jogging is to hear heavy breathing again" is a classic. Oscar Levant, the unconventional, cynical, and hugely talented pianist of this century, once said, "Beneath this flabby exterior lies an enormous lack of character."

My hope is to clearly demonstrate to my students that virtually all fields of study and endeavor are connected in some way. On some days, the "stretch of the imagination" is greater than others — but that is part of the beauty and enjoyment of the "Quote of the Day."

It would also be a simple matter to apply this method to any area of study, whether it be in the humanities and applied sciences or in the technical or natural sciences field. Einstein's "Technological progress is like an axe in the hands of a pathological criminal" would be an interesting and serious introduction to any number of biology, chemistry, physics, or earth science discussions. A more humorous way to approach similar topics might be the anonymous "Life doesn't exist on other planets because their scientists were more advanced than ours."

By doing a small amount of research or by simply being "on the lookout" for material, you will soon find quotes of all kinds to suit your own purposes. Broadway show music, MTV, and Saturday Night Live are all fertile ground, as are the familiar printed sources.

"But Ne'er the Rose without the Thorn"

There are caveats with all good things, and the "Quote of the Day" is no exception. The first "problem" is that your students will begin to bring you their own quotes, poems, and sayings for you to use, or you will find them mysteriously appearing on the board before you arrive in class. (You have to think fast about how to adapt the volunteer quote to the day's lesson!) The second problem is that if you should come to class without a quote, or neglect to put one on the board, the students will complain immediately. While they seldom acknowledge the ones you *do* write for them, if you dare *not* write one, they moan immediately, "What? No quote today?" As that famous actor and pitchman, Karl Malden, might say, "The quote of the day — don't leave home without one!"

Emerson (the leading figure of the 19th-century transcendentalist movement in America and benefactor of pencil-maker and naturalist Henry David Thoreau) seems to be saying that the *quotations* you use don't substitute for *what you know*. He's right, but I believe they provide the avenue for you to reveal the depth and breadth of your own experience, and to connect yours to that of others. My response to Emerson is, "I love quotations. They help me *teach* what I know."

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The Quote Collection

by Ruth Couch, Arkansas State U.-Beebe

How can we involve sophomore general education students in the study of world literature? How can we make the study mean more to them than just a listing of names and themes in a few major time periods, to be memorized for the test and then forgotten?

Tests encourage one type of retention; research papers require in-depth study of one highly specific topic; but I felt the need for students to have a more personal encounter with the material.

Out of this need, I developed a project called the "quote collection." It is effective in encouraging students to approach the material positively, to make a synthesis of it, and to incorporate it into their thinking.

From the very first day, I encourage them to respond personally to the material. "You don't have to like it," I tell them, "but you need to have some basis for your reactions to a particular selection." I also explain to them early in the semester that instead of doing an additional term paper, they will make a collection of favorite quotes, following certain requirements.

I tell them that they will need to find 25 favorite quotes in the selections that we read during the entire course. They may especially like the quote for personal reasons. The quote may remind them of an idea they have long held, but "ne'er so well expressed." It may deal with an issue they are facing in their lives. Or it may be a quote that enrages them for some reason; they may disagree with it or become especially upset by it. But the common factor for all the quotes must be that they appeal to the student in some way.

I give students the following guidelines for the quote collection. They must include the 25 quotes, list the name of the selection and the author, and explain the context of the quote within its selection. Then (and this is the most important part) they explain what the quote means to them: why they like it or dislike it, why they think they may wish to remember it.

A crucial feature of the collection is the conclusion or epilogue. They study the pattern presented by the quotes, then write a short essay about what the quotes show about them. Some decide they are hopeless romantics. Some come across as realists. Others discover they are preoccupied with certain topics and ideas.

"I Have Bought Golden Opinions from All Sorts of People"

The students start immediately to look for quotes they wish to include. They write up their information about each quote immediately after they select it. When they have selected all or most of the quotes, they devise a classification scheme. It may be very simple — just the names of the time periods studied, a topical grouping, or another system of the student's choice.

The format of the quote collection is simple: a title page, a very general table of contents or outline, the quotes themselves with explanations and comments, and finally, the summary or epilogue. Students type the collection or submit it in an attractive scrapbook.

Many students find the quotebook to be a most satisfying project. I believe it promotes an understanding of the literature. I believe it helps students to fix in mind some materials that they may remember many years from now. I also believe it increases their understanding of themselves.

This project can be adapted to many other areas where students have trouble relating to the content, like history, political science, philosophy, and art. For example, in an introductory course in fine arts, students could collect statements of artists about their style of painting.

Instructors in these areas may wish to be more specific about criteria. But asking students to focus on quotes by fitting them into a context and then applying the quotes to their own lives brings a much more powerful and lasting response to material than do tests and term papers alone.

And I know I usually have a great time reading the books!

Errors ...

Your students aren't answering your questions in class? Consider the following list of "common" errors in questioning to see if your techniques might be part of the problem.

- Asking too many questions at once.
- Asking a question and answering it yourself.
- Asking questions only of the brightest or most likeable students.
- Asking a difficult question too early.
- Asking irrelevant questions.
- Always asking the same types of questions.
- Asking questions in a threatening way.
- Not indicating a change in the type of question.
- Not using probing questions.
- Not giving time to think.
- Not correcting wrong answers.
- Ignoring answers.
- Failing to build on answers.

List from: *Effective Teaching in Higher Education* by George Brown and Madeleine Atkins (New York: Methuen, 1988), p. 73.

Back to the Lab (Again)

In earlier issues of *The Teaching Professor*, we've considered lab instruction, bemoaning the lack of resources available to help faculty design and implement effective lab experiences, among other concerns. Three resources have come to our attention.

The first is *Teaching in Laboratories,* by David Boud, Jeffrey Dunn, and Elizabeth Hegarty-Hazel (Surrey, England: Society for Research in Higher Education & NFER-NELSON, 1986). There are chapters on aims and objectives for labs, strategies, sequencing and organization, assessment of students, and monitoring teaching and learning. It ends with a well-documented chapter that summarizes and describes coherently a large body of research on lab instruction.

The authors consider questions like "What does research tell the ... teacher about the value of laboratory work in the acquisition of technical skills, or the understanding and practice of scientific inquiry? How can laboratory teaching help improve students' conceptual understanding? What is life in laboratory classes really like for students and staff; what occupies their time; what roles does each adopt?" (p. 129)

Responses to the last question give cause for concern. Reviewing research done in the biological and physical sciences at the college level, Hegarty-Hazel cites findings that lab instructors spend 30% to 50% of their time developing subject matter content. In some of those labs teachers talked almost all the time (72%), while in other labs they talked much less (25%).

What were they talking about? "The talk centered on low-level discussion of subject matter and on laboratory procedures." In other words, there was "little emphasis on scientific processes and 'extended thought' questions (generally not exceeding 4%)." (p. 146)

The indictment continues: "Discussion of the nature of scientific inquiry was rare, as was reflection on scientific inquiry in behaviors such as problem identification and hypothesis formulation." (p. 146) The teachers observed were not asking students to think of other ways to approach problems or to design an experiment of their own that might help solve a problem.

Quite naturally, then, by comparison students spent far less time talking — 10% to 16%. When they talked they most often asked questions about techniques and procedures or responded to questions of fact and definition. They spent most of their time (68% to 78%) on tasks related to completing the lab activity, with 10% to 16% for talk and activities unrelated to lab work.

Hegarty-Hazel concludes, "One of the most important themes of this book has been the desirability of using laboratory teaching to aid students' understanding of the processes of scientific inquiry and to permit them to undertake appropriate inquiries. Research suggests that there is a gap between this ideal and common practice." (p. 151)

The second resource is an excellent article by Lois Rosenthal, "Writing Across the Curriculum: Chemistry Lab Reports," in the *Journal of Chemical Education* (December 1987, pp. 996-998). Rosenthal asserts that in the discussion sections of lab reports students frequently fail to "substantiate assertions with data." They "seem reluctant to draw conclusions or make assertions." (p. 997) This she attributes to the fact that students are writing the lab report for the teacher, who knows the answers to the questions posed by the experiment. "It may be useful then, to shift the identified audience away from the teacher, to some hypothetical knowledgeable peer; one who is interested in and mildly familiar with the experiment yet who must be convinced that the conclusions are valid." (p. 998)

The final resource to be cited here, albeit briefly, is a substantive chapter, "Effective Laboratory Teaching," in *Effective Teaching in Higher Education*, by George Brown and Madeleine Atkins (New York: Methuen, now Routledge, Chapman and Hall, 1988). To order call: 212/244-6412. Current price: $15.95.

It's a Complicated Equation

The ingredients of effective instruction as identified by research are well-known. (See the discussion in *The Teaching Professor*, May 1987.) That they cross disciplines may not be as well-known, but research documents that they do. How then do we reconcile this "generic" typology of effective instruction with the very different kinds of content being taught? The nature of the content must at least affect, if not actually determine, the teaching that we do within our various disciplines.

To illustrate, I once reported in *The Teaching Professor* that the periodic table wasn't something that could be put up for discussion. One of my colleagues corrected me: the periodic table can indeed be discussed. However, we can agree that a discussion of the periodic table will be different from a discussion of themes in a novel or of business terms and practices.

We start, it seems to me, with the generic ingredients for effective instruction: we know that it's *prepared* and *organized,* for example. But organization is an abstraction: it has no tangible form. Organized teachers don't bring their organization into class and place it on the table. Rather, they translate their organization into behaviors: they do things in class that convey a sense of *structure* and *direction.*

I observed a class recently where the instructor placed at the door a small file box in which every student had a file. On arriving, students picked up their file. It contained all the handouts for the day and a returned assignment; some also had individual notes from the instructor about class-related matters. During class the instructor asked students to place assignments in the file, write notes if they had problems with an upcoming class activity, and include the products of a group activity. The instructor never said a word about being organized; the use of the file to facilitate a

whole range of structural details said it eloquently.

And in what discipline would you guess this teacher might be? Education? Yes, she was teaching a seminar for student teachers. I submit that this "translation" of organization somehow "fits" education. I can't say exactly why, but this way of organizing is something I envision professors of education doing — but not anthropologists, chemists, engineers, or art historians. Organization gets translated into behaviors that fit a particular academic view of the world.

What makes the equation complicated is finding the fit — it's not automatic. We all know professors of education, anthropology, chemistry, engineering, and art history who aren't organized in this way. How do we find the fit? Quite frankly, I don't know.

There's something else equally obvious from the example. This instructor uses a particularly efficient method for handling logistics that most of us complete with much less organized and efficient behaviors. In other words, her technique is *transferable.* It's not just for professors of education; it would work well in a lot of different classes. This means we can further complicate the fit equation by adding factors from outside the discipline.

And the equation gets still more complicated because the fit with content configurations isn't the only variable. Effective teaching style is the unique expression of individuals. As a rule, effective instructors are *enthusiastic, energetic, and involved with their teaching.* Here again an abstraction — enthusiasm — gets translated into behaviors. The fit works when faculty discover, in a vast repertoire of means of communicating enthusiasm, those ways that fit comfortably with who they are and how they teach. Once again I'm at a loss to explain how they solve the equation. But some faculty find the answer, while others never do.

The point of this? It's another illustration of the complexity that's an inherent part of teaching, another example of how and why we must respect and value what we try to do, and finally a case in point that proves how little we understand of the intricacies of effective instruction.

The Extra Credit Dilemma

"Should one desire to start a barfight in a community tavern, the topics of politics, religions, and maternal heritage are likely precipitants. If one wishes to start a verbal brawl in a university faculty club, the desirability of extra credit is incendiary material."

So begins "Of Barfights and Gadflies: Attitudes and Practices Concerning Extra Credit in College Courses" (*Teaching of Psychology*, December 1989, pp. 199-203). In their article, John C. Norcross, Linda J. Horrocks, and John F. Stevenson report results of a survey of 145 faculty and 525 students at two northeastern universities. Their goal: to take "a little of the heat out of this barfight" and add "a little more light."

Only 3% of the students responded that extra credit should never be offered, while 21% of the faculty took that position. Conversely, 56% of the students said that extra credit should be routinely offered, as compared with 28% of the faculty sample.

In terms of actual practices, 80% of the faculty surveyed at one of the institutions didn't offer any extra credit in any of their courses; 5% offered it in all their courses. At the other institution 70% never offered it and 9% always did.

The survey results showed that extra credit options varied by discipline. At one institution faculty in social and behavioral sciences offered significantly more extra credit opportunities — in 27% of their courses — than their colleagues in natural sciences (1%), quantitative sciences (7%), and humanities (6%).

Students and faculty were also asked to identify potential advantages and disadvantages of extra credit. The principal disadvantage cited by both is that the possibility of extra credit encourages students to be lax and irresponsible: whatever they miss early in the course can be made up with extra credit at the end. The disadvantage ranked second by both was the inequity that results when extra credit options are given to some students but not to others.

As for the potential advantages, faculty and students disagreed more than they agreed. The three most often cited by faculty were that extra credit:

- allows for greater exploration of a topic,
- compensates for serious illness or problems, and
- motivates students to work harder.

Students most often listed that extra credit:

- provides a second chance,
- demonstrates and rewards extra effort, and
- allows greater topic exploration.

As the authors point out, a number of key philosophical and educational assumptions lurk behind our decisions about extra credit. "Are grades a reward for hard work, a quantitative estimate of ability, and/or a means of providing constructive feedback to students?"

If grades are a reward, then it makes sense to allow students additional opportunities to work hard to master the material. If grades are a quantitative estimate of ability, though, letting students improve their grades with extra credit undermines the reliability of those grades. If grades are a means of feedback, "then it is important to determine what kinds of learning are to be shaped."

Like so many instructional issues, this one isn't easily resolved. However, many faculty have tackled the problem and settled the issues with a system that fits their course, students, and instructional setting.

If you've devised an effective system for extra credit, if you have thoughts on the topic, or if you know of additional resources, please write. We'll publish a collection of material in a subsequent issue. To consider your letter for inclusion, we need to receive it by Jan. 1, 1991. A gentle reminder: please be brief. Thanks!

The Teaching Professor

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Revitalizing Required Reading

by Leslie A. Swetnam and Vincent P. Orlando, Metropolitan State College

Assigning text materials to be read by students is a standard practice in most college courses. Studies by Smith and Feathers, reported in *The Journal of Reading* (1983, Vol. 27, 262-269), have shown that high school students are required to do very little independent reading of texts. Their teacher's repetition of the content of the texts in class minimizes the need for advanced reading comprehension skills. Students are rarely instructed in techniques to improve their reading in the content areas.

However, college instructors expect their students to have effective reading skills. College faculty require vastly more reading and of more complex material than high school teachers. In most courses there is at least one textbook and sometimes more. Reading assignments are given regularly and references to the content made in class. Although instructors may spend time instructing their students in researching and writing term papers, most spend little if any time helping their students focus, define, and strengthen their reading for information skills.

To help students better read for information independently, instructors need to answer several questions and communicate with students about these answers. The answers will help students understand that course readings accomplish different objectives and those objectives spell out when and how they should read material for the course.

Why was this particular text selected and what purpose does it serve in the course?

- Comprehensive reference.
- Instructional manual.
- Collection of original sources or cases.
- Compendium of different points of view.

When should the reading be done?

- Prior to class, as an introduction.
- After class, as a review.
- As an optional supplement.
- As assigned in a specific sequence to complement classroom presentations.

How will the material be used in the course?

- Referred to in the lectures.
- Included in open discussions.
- Integrated into the requirements for an assignment.
- Assignment of specific questions to answer while reading.
- Questions on the exams, where the reading is the major source. (The use of test banks provided by text publishers aids in this focus.)

How should the reading be completed?

- Read for a general sense of the content.
- Highlight or underline for a focus on facts.
- Margin notes to summarize.
- Use a method such as "SQ3R" (Survey, Question, Read, Recite, Review) for a focused study.

Ongoing research by Orlando, Caverly, Swetnam, and Fillipo, reported in *The Forum for Reading* (1990, Vol. 21, 4-7), has shown that the content of the exams in many undergraduate courses is covered in class lectures or in an overlap of class presentations and text. On most exams students are rarely asked to answer a question where the text is the major or only source for the answer.

Orlando, Caverly, and Fillipo presented a paper at the 35th International Reading Association meeting, May 8, 1990, in which they reported that faculty in psychology and history courses covered between 75% and 95% of their test items in lectures. These lectures included a review of important text information. This practice does not encourage students to analyze and make independent decisions regarding the importance of material included in text. Rather it teaches them to rely on their instructors to highlight important information. Hence, students do not develop their own sense of judgment or ability to pick out what is important or — even worse — do not read at all.

Spending a small amount of time answering questions about the role of reading in a course and clearly communicating this information to students will make the assigned readings more valuable. If students can be taught to read material and learn independently from print sources, then instructors should be able to include more material in a course — and they will have taught students a lifelong learning skill.

It's Got to Fit

"Do you think I should gesture when I lecture?" A stupid question? Not really. This question and others like it (Should I use overheads instead of the blackboard? Should I throw erasers at sleeping students?) reflect honest queries as to whether or not some aspect of instruction ought to be changed.

The problem is that most of the time when faculty ask the questions, they believe (or at least hope) the questions have right answers. And they do — only the answers aren't right in any absolute or definitive sense.

Whether or not you or any instructor should use gestures or the overhead or other instructional possibilities depends on a complicated interplay of variables.

To begin, any instructional behavior or practice must fit comfortably with your teaching style. It's not that teaching style is fixed, immutable, unchanging, but rather that it reflects the personality of the instructor. If that style is to have integrity, it must fit comfortably with who that person is and what she does. In other words, gestures are an effective way to communicate enthusiasm and show the shape of something or its relationship to something else; but if the instructor never "talks with his hands," then he probably isn't going to be very successful at using them in class.

But it's more complicated than that. Whatever the instructional alteration under consideration, it must also "fit" the configuration of your content. Not too long ago, a faculty member confronted me about the idea of giving students the option of making a final (suggested in *The Teaching Professor*, October 1989). "I like the idea but I can't figure out how to make it work in my class. I teach beginning acting classes."

No matter how good an idea may be, that doesn't mean it should be adopted in all college courses. The idea has to fit the with structure of the course content. Here's an area most of us need to think about more.

What do the nature, shape, sequence, and structure of our content tell us about instructional methods, strategies, and techniques? You can use discussion in accounting 101, but that content lends itself much less readily to discussion methods than the content, say, of a comparative lit course. Can you teach a foreign language by lecturing about it?

And it's more complicated still. Changes in policies and practices must also fit the instructional setting. Can you really offer the option of making a final if you've got 150 students and two days before final grades are due? How well do lectures fit in lab courses or graduate seminars? In the case of instructional setting and content configuration, the examples given here are the obvious and easy ones. Some distinctions are much more subtle. What kinds of learning experiences should students have in capstone courses in a major? What kinds of experiences should they have in general education courses outside their majors?

One last variable in this fit equation: the students. Is the alteration suitable for them, given who they are, what they know, and their current level of intellectual development? Sometimes we are not as mindful as we ought to be of different student learning styles, of what kind of educational experiences have preceded ours and happen concurrently with those provided by our course. In other words, upper-division students might do better at making a final than lower-division students, students with a long history of not doing well in writing courses may need more empowerment, students with little prior interest in a subject area may need more motivational techniques.

Right Answers - But Not Easy

So, the questions as to whether you should gesture, use the overhead, or try a group project do have right answers — but they're right answers you must search to find. Not every variable is significant in every decision, which makes some of the decisions easier.

And although there are right answers, no answer is fixed in stone, given the interplay of variables involved. Teaching becomes a source of rich personal growth if we push ourselves, our content, and our students in new, unfamiliar directions. For example, if the issue is using group projects and you've never undertaken any, can you identify some preliminary projects to try? Try those that don't seem intrinsically at odds with who you are and what or where you teach. The road to effective instruction becomes more interesting when you try some alternative routes.

THE TEACHING PROFESSOR

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Effective Thinking: What Is It?

by Beverly J. Cameron, University of Manitoba

College and university instructors often list the acquisition of effective thinking skills as a goal for their students. But what does effective thinking really mean? A clear concise definition is essential if the goal is to be accomplished. A few classroom suggestions can also help to point faculty and student toward the successful teaching and learning of effective thinking skills.

Many Definitions and Distinctions

The education and psychology literatures abound with definitions of effective thinking by that and other names. John Dewey described effective thinking as "reflective thinking ... the active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and further conclusions to which it tends" (1933, p. 9).

Some researchers equate problem-solving and critical thinking with effective thinking. For instance, critical thinking has been called a "self-contained 'type' of thinking..., the cognitive activity associated with the evaluation of products of thought, [and] ... such mental activities as the recognition of information (including understanding and comprehension), the testing and verification of ideas and information, and the judging of thought products" (Yinger, 1980, pp. 11-30).

Other researchers (Costa, 1985) differentiate between critical thinking and problem-solving. When this is the case, critical thinking is usually defined to encompass general thinking abilities and problem-solving is limited to a series of steps that lead to one or a best solution. Problem-solving steps include the abilities to:

- analyze a situation and problem,
- search related knowledge,
- plan possible means of reaching a solution,
- monitor the solution process, and
- evaluate the results of the solution process.

"When faculty members talk about teaching critical thinking ..., they typically are referring to teaching students ... to solve problems, reach decisions, or make evaluations with respect to standards of excellence."

Creative thinking, sometimes considered a separate part of the effective thinking process, is defined as a combination of "problem finding, idea generation, planning, and preparation" processes (Hayes, 1981, p. 199). Creative thinking refers to "being able to produce along new and original lines" (Costa, 1985, p. 310). It differs from critical thinking in that "the creative aspect allows us to generate new ideas, possibilities, and options. The critical aspect allows us to try out, test, and evaluate their products" (Yinger, 1980, p. 12).

In summary, "when faculty members talk about teaching critical thinking, problem-solving, or reasoning, they typically are referring to teaching students to use their learning in new situations to solve problems, reach decisions, or make evaluations with respect to standards of excellence" (McKeachie et al., 1986, p. 33). On a lighter note, Edward De Bono describes effective thinking as "that waste of time between seeing something and knowing what to do about it" (1971, p. 130).

Working Definition of Effective Thinking.

Clearly there are many ways to describe the effective thinking process. The teaching faculty member needs to synthesize this myriad of distinctions into a workable definition. Consider this one — effective thinking *and* problem-solving denote the following characteristics:

- the ability and general willingness to *use* a factual and experiential knowledge base to recognize, identify, and describe a problem or situation;
- the ability to *apply* appropriate analytical tools, weigh relevant evidence, make logical inferences and valid abstractions; and
- the willingness to *reach* a logical conclusion or solution in situations where only one correct answer exists and also in situations where an evaluation of the relatively best solution or conclusion is required.

This working definition of effective thinking incorporates critical and creative thinking as well as problem-solving into an inclusive process. As such, it becomes a appropriate goal for teaching and learning in the postsecondary classroom.

Teaching and Learning Effective Thinking Skills in the Classroom

It is one thing to have a definition of effective thinking and another to have students learn these skills. Practice and research show that the most successful methods of teaching and learning effective thinking skills have three features in common:

- student discussion of course content and problem-solving skills,
- explicit emphasis on problem-solving procedures and methods, and
- discussion of methods and strategies that can be used by individuals to plan and monitor their own effective thinking (McKeachie et al., 1986, p. 37).

Effective thinking skills must be a central part of both teaching and learning .... Effective thinking skills must be defined, discussed, and used *in the classroom by* both *faculty and students.*

The working definition of effective thinking and the three features of successful teaching suggest that:

- faculty must explicitly explain and model effective thinking skills, and
- students must be actively involved in using the thinking process: they must *use, apply, reach for, and practice* effective thinking skills.

Effective thinking skills must be a central part of *both* the teaching and the learning that go on in a course. It is not enough to talk about effective thinking in vague generalities or expectations. Effective thinking skills must be *defined, discussed, and used* in the classroom by *both* faculty and students.

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"*Like so many great thinkers before us,* we believe that teaching, even when it is carried out by conscientious and caring teachers, often overestimates the relevance of transmitting information and procedures to students, and underestimates the importance of helping students to change their ways of thinking and understanding. In order to remedy this situation, teachers must change their conceptions. ...

"The message of scores of studies of student learning is unambiguous: many students are highly adept at very complex skills in science, humanities and mathematics. They can reproduce large amounts of factual information on demand; they have appropriated enormous quantities of detailed knowledge: they pass examinations successfully. But they are unable to show that they *understand* what they have learned. They harbor profound misconceptions about mathematical, physical and social phenomena. They have hazy notions of the accepted form of expression in the subjects they have studied."

— Paul Ramsden, *Improving Learning: New Perspectives*, 1988, pp.13-14

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Instructor Impact on Self-Esteem

by Robert C. Preziosi, Nova University

Consider the following situations:

1. Two students receive precisely the same negative feedback during class. The performance of one student improves, while the performance of the other worsens.

2. In a small group session on interpersonal relationships, the group is sometimes supportive, sometimes non-supportive. One of the students performs well when the group is supportive, but does poorly when the group is not.

3. In class, one student blurts out that the material is much too difficult to learn in one session. Another student responds by accusing the instructor of moving much too slowly.

A variety of theories could explain each of the three situations. For example, they could be explained by left brain vs. right brain learning, less than optimum choice of instructional methods, negative student attitudes, or a poor learning environment.

Student self-esteem could also account for the somewhat divergent behavior in each situation. Self-esteem is the set of ideas and attitudes that each of us consciously values. It is important because students who feel valued by the instructor are better learners.

What is the role of the instructor in situations like these? What do instructors need to know and do if they are to have a positive impact on student self-esteem?

Essential Understandings

Instructors must keep several important points in the forefront of their thinking and behaving.

Each student brings a different level of self-esteem into the classroom. While the curriculum may be standardized, the approach that learning the course material takes will be dictated by each student's level of self-esteem. This means that from the very first session the instructor must pay careful attention to behavioral cues that indicate the level of each student's self-esteem. The instructor must maintain or enhance everyone's self-esteem through the instructional behaviors used.

Students will think, learn, behave, and feel during class sessions in relation to their level of self-esteem. Instructors can help each student take a positive approach to learning and feelings about learning. This may require only encouragement or reinforcing words/actions. It might also require more direct guidance, which the instructor must be prepared to provide. Every effort must be made to ensure that students have at least as much self-esteem at the conclusion of a course as at the onset.

Students need to feel good about themselves as learners. This means that the instructor must understand each student's learning style and be able to behave and speak in ways which validate a variety of learning styles. The instructor needs to provide *positive reinforcement for student learning* as often as possible during the course. These will only be small momentary events, but they will have a positive long-term effect.

Students will behave in ways that they believe maintain, increase, or renew their self-esteem. Thus, the instructor must provide for those opportunities in whatever instructional design is being used. Such opportunities need to be a part of the student evaluation process regardless of the evaluation approach used. Always remember that if the student's self-esteem is not maintained, increased, or renewed, then optimum learning will not occur.

For students with high self-esteem, instructors need to:

- Communicate high, but reasonable performance expectations.
- Provide challenging learning activities.
- Allow for the expression of high-esteem behaviors that are disruptive. An example would be to allow a student to verbally "pat himself on the back" for answering a tough question posed by the instructor.
- Maintain time and performance quality goals that are consistent.
- Reinforce the feeling of satisfaction with learning.
- Point out how the learning applies to the student's development.
- Interpret learning objectives as challenging.
- Provide opportunities for the extension of learning.

For students with low self-esteem, the instructor should:

- Maintain a supportive environment among students.
- Provide for esteem-enhancing behaviors on the part of the instructor and students. One example would be the use of verbal encouragement by the instructor: "You're on the right track. Keep talking."
- Simplify objectives and learning.
- Help students feel satisfaction when they are successful.
- Require specificity in attitudinal or behavioral learning. For example, a psychology professor asking a student to define "social neurosis" in Freudian terms illustrates.
- Counsel and coach as often as necessary.
- Avoid overloading with negative feedback.

Where to Begin

The process of building student self-esteem begins with a complete awareness by the instructor of the importance of this concept. It requires a commitment that expresses itself in the instructor behaviors discussed here.

One-to-One Teaching

By "one-to-one teaching" we mean the instruction that takes place between one teacher and one student. Sometimes it happens in the context of an independent study or tutorial; more often it happens during office hours, in those short intervals when the teacher tries to clarify a confusing concept, offers advice, or just listens. Listed below are some suggestions for maximizing the potential of this situation when certain student responses jeopardize its outcomes.

The student just doesn't get it.

› Back off, talk about something else for a couple of minutes. It's possible to overexplain an idea or process.

› Think of an example or ask the student for one to see if the concept is understood.

› Direct the student to a written description or solution.

› Involve someone else (maybe another student) who may be able to connect with the student more effectively than you.

› Don't give up or attribute blame.

The student arrives unprepared.

› Be certain the student has explicit instructions on what to prepare, e.g., reading, answers to study questions, preliminary problems to solve.

› Be honest and open in your assessment of the situation if it occurs.

› Don't chew out the student and then proceed to provide all the answers.

› If the situation repeats itself, terminate the session and have the student reschedule — after the necessary preparation.

The student has complaints within your jurisdiction.

› Listen carefully.

› Avoid defensive responses.

› If you don't plan to change whatever the student finds objectionable, calmly explain why you've chosen a particular policy and practice and why you intend to continue using it.

The student has complaints not within your jurisdiction.

› Offer suggestions of a person or place more appropriate for the complaint.

› Help put the complaint in perspective: "Is the fact this course meets at 8 a.m. the only reason you're failing?"

The student wishes to discuss a personal or emotional problem.

› Make sure the student understands your qualifications: you're not a professional counselor.

› Know what psychological resources and services are available at your institution.

› If you decide to let the student proceed, curtail the conversation if the problem is beyond your expertise. Don't give advice you're not qualified to offer.

› Remember: you're the student's teacher first, friend or counselor after that.

The student finds the one-to-one contact with you intimidating.

› Be friendly, smile.

› Meet with the student around a table or in some neutral location, rather than across your desk.

› Talk less and listen more.

› Ask questions, wait for answers, and respond when they're given.

› Offer criticism gently, especially in the beginning.

The student arrives late or not at all.

› Be sure you're present and on time at all scheduled meetings.

› End the meeting at the scheduled time: don't go overtime to compensate for a late arrival. If you need more time, schedule an additional meeting.

› Talk about why arriving late is troublesome.

› Reschedule missed meetings at your convenience.

The student won't leave.

› End the meeting in an obvious manner: "We've covered all the topics I wanted to discuss."

› Set up meetings for a prescribed amount of time: "We'll meet once a week for an hour" — and stick to those times.

› Interrupt : "Sorry, I can give you five more minutes and then I've got to prepare for my next class."

The student doesn't seem to be gaining new insights, but just keeps repeating the old ones.

› Give material that presents alternative insights and seek student response to it.

› Pose hypothetical counterpoints: "I had a student once who believed .... What would you say to that?"

› Occasionally invite others to join your discussions with the student.

Meeting with students one-to-one can be very effective and rewarding — or frustrating and unproductive. Policies, preparation, and a positive attitude can make a big difference.

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On Being Vague

"Vague," a comment peppered regularly in the margins of student papers and essays, flags unclear ideas, thoughts born before their time. But students don't have a corner on this commodity. If they were able to respond in the margins to our lectures, we might find the comment "vague" peppered just as regularly.

Instructor vagueness and clarity have been studied in classroom settings at all levels. To study the concept (somewhat vague in itself), researchers have tried to define it precisely, operationally. In a review of research on the topic, definitions proposed include "vagueness occurs as speakers commit themselves to present information they cannot remember or never really knew." It's a "psychological construct which refers to the state of mind of a performer who does not sufficiently command the facts or understanding required for maximally effective communication."

Interesting and helpful definitions, but how can researchers recognize it? Further specification helps. Researchers hypothesize that vagueness results when certain terms are used. They've placed these terms in nine categories, listed below with examples.

Ambiguous designation
conditions, other, somehow, somewhere, someplace, thing

Approximation
about, almost, approximately, fairly, just about, kind of, most, mostly, much, nearly, pretty (much), somewhat, sort of

"Bluffing" and recovery
actually, and so forth, and so on, anyway, as anyone can see, as you know, basically, clearly, frankly, in a nutshell, in essence, in fact, in other words, obviously, of course, so to speak, to make a long story short, to tell the truth, you know, you see

Error Admission
excuse me, I'm sorry, I guess, I'm not sure

Indeterminate quantification
a bunch, a couple, a few, a little, a lot, several, some, various

Multiplicity
aspect(s), kind(s) of, sort(s) of, type(s) of

Negated intensifiers
not all, not many, not very

Possibility
chances are, could be, may, maybe, might, perhaps, possibly, seem(s)

Probability
frequently, generally, in general, normally, often, ordinarily, probably, sometimes, usually

In the original research using these categories, teachers on the average used 2.18 vague terms per minute, with 40% of them averaging between 2.5 and 4.0 terms per minute. Subsequent research reports 2 to 5 vague terms per minute of teacher talk.

One might argue that the "truth" we teach is vague, uncertain, and tentative, in and of itself, thereby justifying use of these less precise terms and phrases. That's true. It's just a question of frequency. Researchers have been able to document a relationship between the number of vague terms and student achievement in both correlational and experimental studies — again at the elementary, high school, and college levels. The "effect of vagueness terms in cases all cases cited was negative, and was significant in eight of the ten studies cited."

We must fairly reflect what is and is not known about our content, the ambiguity of those truths we teach. But on the other hand and in balance, we must try to communicate what is more precisely known in clear, understandable terms. Operationally: listen to yourself in class tomorrow. If you'd stamp "vague" in the margins more often than you'd expect, make clarity a more conscious goal.

Reference: M.L. Hand, "Vagueness and Clarity in the Classroom." ***International Encyclopedia of Education: Research and Studies*****, Vol. IX. Torsten Husen and T. Neville Postlethwaite, Editors-in-Chief. Oxford: Pergamon Press, 1985.**

More Metaphors

Ed.'s note: Our request last spring for metaphors and the follow-up collection we published continue to generate reader response. Either professors tend to be closet poets or there are dimensions of our profession that defy literal and linear expression. The following was sent anonymously with one of those ubiquitous yellow Post-It notes saying simply, "more metaphors."

Teaching

is running in place
with weights on your feet.
It's an old injury
that never heals and so
I go into each hour still
sore from the last exercise.

Loving the possibilities
of wood — slender shapes,
wings, visions of flight
frozen in seasoned stock
dry and durable — I work
in a sultry greenhouse air,
sculpting in ice

shapes that melt in the mind.
I write on the water, I sweat
and always come away wet
behind the ears.

— Jim Wayne Miller, Western Kentucky U.

(From *Vein of Words*, published in 1984 by Seven Buffalos Press, Box 249, Big Timber, MT 59011. Reprinted with permission.)

The Ethics of Our Profession

"University faculty have not given much attention to ethical issues in teaching and research. There is a large literature on academic freedom, but little on academic responsibilities," James W. Nickel notes in a recent article on the topic. His point: we ought to consider the ethical dimensions of our profession. If we agree, Nickel points out an important distinction. Do we want "standards for disciplining people who behave badly" or do we need "standards of excellent behavior and aspirations and ideals"?

To further clarify the distinction, Nickel identifies responsibilities and privileges associated with our profession. As responsibilities he lists: "to help students acquire advanced levels of knowledge and competence." He believes that to provide appropriate help, faculty must maintain content competence. "Keeping up with one's field is often difficult, and one may be tempted to give up the struggle. Because of this, a code of faculty ethics should emphasize the teacher's responsibility to devote sufficient time to activities such as reading, laboratory work, research, scholarship, conversing with colleagues, and attending conferences."

However, knowledge isn't enough. That knowledge must be communicated. "Here a code of faculty ethics could emphasize the teacher's responsibility to acquire and practice effective teaching procedures."

We don't often think of the privileges of our profession. Nickel suggests they include "having access to people's minds during a formative period, setting the syllabus and choosing texts for one's courses, and choosing how to teach particular class sessions."

Can these privileges be abused? Nickel says yes and in more than one way. For example, teachers can indoctrinate "which we might characterize as teaching in a way the inculcates beliefs without exploring the grounds for those beliefs and possible objections to them." Nickel also believes that teachers can foster a cult of personality in which one glories the self and slanders colleagues in the interest of self-gratification and power. Finally he proposes that teachers abuse their privileges by "diverting class sessions away from the subject of the course to extraneous topics."

Nickel's whole article merits our review. He's right. Many of us are far more knowledgeable about the ethical issues of other professions than our own. And yet this profession can do just as much for good or ill as they. We ought to look at ourselves as we look at others.

Reference: James W. Nickel "Do Professors Need Professional Ethics as Much as Doctors and Lawyers?" In Mary Ann Shea, ed., *On Teaching*, Vol. II. Faculty Teaching Excellence Program, University of Colorado at Boulder, 1990.

Ed.'s note: We highlighted the first volume in this series in our July 1988 issue and are delighted to announce the second volume of articles and essays, all authored by UC-Boulder faculty, just as outstanding as the first. For a modest $7.95, order from: University Book Center, U. of Colorado, Boulder, CO 80309.

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An Open Letter to Teaching Professors

Dear Colleagues,

Ever since I began teaching over 25 years ago, I have been concerned with how to improve the quality of teaching by professors. That concern became more intense and frustrating after I joined our Faculty Development Committee and became director of graduate studies in a department that awards a doctorate in the College Teaching of English. ...

I offer three suggestions that I believe will help those who have energy and courage to follow them become more aware of their teaching skills and thus better able to assess and modify them. I wish someone had made these suggestions to me when I was a beginning TA. All three may seem extreme — but on occasion extreme measures are needed.

Extreme suggestion #1 — Read a book. Now I know that professors read books and articles regularly. It's part of what a scholar does. But I want you to read — on your own time, not for publication or promotion — a book on college teaching. Many good ones are available, but I recommend three.

"Observing teaching ... aroused my admiration for the millions of students who sit before professors day after day. I wouldn't do it, not without getting paid."

The classic how-to-do-it book, which treats from a practical perspective everything from absences to zoology field trips, is Wilbert McKeachie's *Teaching Tips: A Guidebook for the Beginning College Teacher*. I quote from the introduction to the first edition: "What is contained in this discussion will not make you a Great Teacher. It may be that only God can make a Great Teacher. At the same time, it seems to me perfectly obvious that many of us get bogged down in the details of running the classroom. In this discussion I have tried to suggest ways of making this go more smoothly."

An excellent book that requires involvement is *A Practical Handbook for College Teachers* by Barbara Fuhrmann and Anthony Grasha. I particularly like this salutary albeit depressing exercise. "Characteristics of good teachers ... often read like a job description for a saint. They don't give us much in the way of realistic images of good, human teachers .... Taking what you know about teaching and about yourself, make up a list of characteristics that you envision as the *ideal you* as a teacher. This list should not include every positive trait that has ever been identified, but rather should represent what for you is actually attainable .... Then on another sheet list 15 to 20 traits that you currently see in yourself. When you have completed this list, lay the two side by side to begin to make comparisons. Lay another sheet of paper between the two lists, and on it indicate what steps you might take to move from your perception of your real teaching self to your perception of your ideal teaching self."

Finally, *The Craft of Teaching* by Ken Eble is a superb book. Eble, a famous English professor, turned in mid-career to the issue of teacher evaluation, and was often enraged at what he saw: "Observing teaching as I did in the past five years aroused my admiration for the millions of students who sit before professors day after day. I wouldn't do it, not without getting paid."

He observed, "It is hard to excuse the tendency of faculty members to argue heatedly about matters relating to teaching and learning without bothering to become informed or even acknowledging that they might become informed."

Extreme suggestion #2 — Keep an informal journal about your work with students and colleagues. Steal a half-hour daily and write in a notebook, for your eyes only, your responses to that day's teaching. Be honest, and be specific. You might begin by answering four questions: What did I do well today? What did I screw up? Can I repair it? What did I learn for future reference?

Keeping such a journal is both fine therapy at the moment and an excellent record later. Joan Didion explains why she keeps such a personal journal, which she simply calls a notebook: "I think we are well advised to keep on nodding terms with the people we used to be, whether we find them attractive company or not ... and I suppose that keeping in touch is what notebooks are all about." I wish devoutly that I had kept such a journal of my first years teaching college. But I did not begin to do so until I became a tenure-track professor in Texas; I still have my first one, focusing on the first honors composition course I taught

in spring 1971. I have kept such journals regularly in more recent years, and have found them invaluable.

Extreme suggestion #3 — Only for the stouthearted. Have your teaching videotaped. Then ... watch the tape carefully and critically as if you were the student. If you do, you will need instantly to go to your journal for therapy.

I was not given this suggestion as a young TA when it would have been most beneficial to me and to my students; and years later, after agreeing to do it, I kept procrastinating. But last spring, when my son — a radio/television major — took my logic class, fate seemed to have stepped in.

Watching the tape the first time was less painful than expected. I taught a reasonably well-organized and fairly clear lesson on logical fallacies, and by the end of the class, perhaps half the students had spoken.

I no longer wondered, in Conrad's words, "How far I should turn out faithful to that ideal conception of one's own personality every man sets up for himself secretly." I knew. I consider myself a discussion teacher. But although students spoke, they spoke to me, never to each other. And I consider myself a good public speaker. But I heard myself swallowing words and speaking too rapidly, often directly to a chalkboard .... And these were all remediable behaviors, not reflections of innate personality traits that I could not change.

Those who try these suggestions will have taken several steps toward achieving the happy state that Chaucer ascribes to his young scholar in *The Canterbury Tales*: "and gladly wolde he lerne and gladly teche."

Collegially yours,
Richard Fulkerson, East Texas State University

The Syllabus: It's a Contract

"I use the syllabus as a springboard for discussion of contracts. The actual agreement is not the written document, but exists in the relationship it establishes."

More and more faculty are thinking about the syllabus as a contract, a document that specifies the terms and conditions of participation in a particular course. Stanley G. Freeman, in the School of Accounting at the U. of South Carolina, has taken that way of thinking to its ultimate conclusion. His syllabus for Commercial Law is written in legal contract form. It begins ...

"This agreement is entered into this ___day of _____, 19___ by and between Stanley G. Freeman, J.D., hereinafter referred to as the Professor, and _____, hereinafter referred to as the Student.

Whereas, the Professor has covenanted and agreed with the University of South Carolina, College of Business, School of Accounting to utilize his experience, training, education and best efforts towards instructing the Student, in the subject of Commercial Law;

Whereas, the Student is desirous of gaining as much knowledge, training, insight and understanding as possible;

NOW THEREFORE, for and in consideration of the mutual promises contained herein, the parties promise, covenant, agree, warrant and make the following representations ...."

The syllabus then includes a fairly conventional description of the course, objectives and requirements, student participation, and some professional information about the professor. Both professor and student signatures are required in the presence of witnesses. However, in this case neither signs the document. Freeman explains, "I use the syllabus as a springboard for discussion of contracts. The actual agreement is not the written document, but exists in the relationship it establishes." However, other instructors might consider having students sign or "execute the contract" as a means of adding a certain "sanctity" to the course agreements made between the teacher and students.

Freeman uses this format because " it provides the students with an immediate, firsthand exposure to contract terms, conditions and format" — especially relevant in this course. But more important, it specifies for the students the instructor's expectations and makes it clear what students can expect of the instructor.

Instructional Evaluation

Ed.'s note: We've touched on various aspects of this topic many times in this publication. It's an issue that generates heated campus debate — and sizeable research. One scholar in this area stands out from the crowd in his commitment to look across the many individual studies for the more general conclusions.

He is Kenneth Feldman, a sociologist at SUNY, Stony Brook, whose research and analyses of research appear in Research in Higher Education. *(Find his articles in Volumes 4, 5, 6, 9, 10, 18, 21, 24, 26, 28 and two in volume 30). He graciously agreed to talk about instructional evaluation with TP's editor.*

TP: You have probably spent more time reviewing, analyzing, and writing about the research related to instructional evaluation than practically anyone else in higher education. Can you give us any sense of how large that body of research is? How many separate studies are you finding on a given issue?

Feldman: The body of research on instructional evaluation is very large — much larger than I think many in academia realize. William Cashin, in a recent letter to the editor in *The Chronicle of Higher Education* (Sept. 5, 1990), points out that 1,300 citations can be found in the Educational Resources Information Center data base on "student evaluation of teacher performance" at the postsecondary level. My own collection of books and articles on instructional evaluation of teachers and courses numbers about 2,000 items. However, at a guess, well over one-half of these items are opinion pieces, what I have come to call "talk." Even so, that still leaves a large number of research pieces.

The number of studies on a given topic varies, of course, depending on the scope of the topic as well as how narrowly or broadly an issue is framed. For the various questions that I have addressed in my own reviews and syntheses, I usually have found between 25 to 50 (or even more) articles with directly relevant data. A specific and narrow subquestion within a general topic might have only 5 or so articles with relevant data.

"A Very Short Answer or a Very Long One"

TP: What do you think we know for sure (or reasonably sure) about the evaluation of instruction?

Feldman: That's a hard question to answer — not just because the area is complex but also because we actually know so much about instructional evaluation, especially when the focus is on student ratings of teachers and courses. This question requires either a very short answer or a very long one.

At this point, I'll opt for a very short answer to the question — by paraphrasing Herbert Marsh's conclusion in his review of students' evaluation of university teaching initially in the *Journal of Educational Psychology* (1984) and later elaborated in the *International Journal of Educational Research* (1987). His conclusion takes the form of a short series of on-the-one-hand, on-the-other-hand statements, as follows:

- Student ratings are multidimensional, yet they may have some halo effect.
- Although they are clearly reliable, there are some elements of unreliability.
- They are essentially uncontaminated by many factors often seen as sources of potential bias, yet they are probably affected (if slightly) by certain other biases.
- Student ratings are valid in that they are positively related to a variety of validity criteria, although some associations are only modest in size and others may be artificially inflated.
- Student ratings are seen as useful by students, faculty, and administrators, yet faculty view them with some skepticism as a basis for personnel decisions and certain faculty would not use them for any purpose whatsoever.

I'm sure some of the details and concrete findings supporting these and other generalizations will surface as we continue the interview.

Research Questions Evaluation Myths

TP: Are there some faculty myths about evaluation that you do not find confirmed in the research?

Feldman: Yes. In a recent article in the *Journal of Personnel Evaluation in Education* (1987), Lawrence Aleamoni lists a number of speculations, propositions, and generalizations about student ratings of instructors and instruction that "are (on the whole) myths." Although I would argue that the statements he lists vary in their degree of accuracy, I would agree that some of them are indeed myths, as follows:

- Students cannot make consistent judgments about the instructor and instruction because of their immaturity, lack of experience, and capriciousness — untrue.
- Only colleagues with excellent publication records and expertise are qualified to teach and to evaluate their peer's instruction — good instruction and good research being so closely allied that it is unnecessary to evaluate them separately — untrue.
- Most student ratings schemes are nothing more than a popularity contest, with the warm, friendly, humorous instructor emerging as the winner every time — untrue.
- Students are not able to make accurate judgments until they have been away from the course, and possibly away from the university, for several years — untrue.
- Student ratings are both unreliable and invalid — untrue.
- The time and day the course is offered affects student ratings — untrue.
- Students cannot be meaningfully used to improve instruction — untrue.

Aleamoni also presents the following statements as candidates for the status of myth:

- The size of the class affects student ratings,
- The level of the course affects student ratings.
- The rank of the instructor affects student ratings.
- Whether students take the course as a requirement or as an elective affects the ratings.
- Whether students are majors or non-majors affects their ratings.

Whether these statements are myths or not is unclear. The statements may be untrue partly because of the word "affects" in each of them, not because the course, instructor, or student elements specified are unrelated to evaluations. Let me explain.

Although the results of pertinent studies are somewhat mixed, a clear trend across these studies can be discerned: slightly higher ratings are given to teachers of smaller rather than larger courses, to teachers of upper-level rather than lower- level courses, to teachers of higher rather than lower academic rank, by students taking a course as an elective rather than as a requirement, and by students taking a course that is in their major rather than one not in their major.

However, these associations or correlations do not prove causation; each of these factors may not actually and directly "affect" ratings, but may simply be associated with the ratings due to their association with other factors affecting ratings. Moreover, even if it can be shown that one or more of these factors actually "affect" students' ratings, the ratings are not necessarily biased by these factors, as is often inferred when correlations are found.

To give one example: teachers in large classes may receive slightly lower ratings because they are indeed less effective in large classes than they are in smaller classes, not because students take out their dislike of large classes by rating the teacher a little lower than they otherwise would. So, while it may be somewhat "unfair" to compare teachers in classes of widely different sizes, the unfairness is in the difference in teaching conditions, not in a rating bias.

Correlation Between Grades and Evaluations

I'd like to mention one other candidate for the status of myth. As Aleamoni words it, "the grades or marks students receive in the course are highly correlated with their ratings of the course and instructor."

On the one hand, the word "highly" indeed makes the statement mythical: grades are not *highly* correlated with student ratings. On the other hand, almost all of the available research does show a small or modest positive association between grades and evaluation (usually a correlation somewhere between +.10 to +.30), whether the unit of analysis is the individual student or the class itself.

Research has shown that some part of the positive correlation is due to "legitimate" reasons and therefore is unbiased: students who learn more earn higher grades and thus legitimately give higher evaluations. Moreover, some part of the association may be spurious, attributable to a third factor, say students' interest in the course subject matter. Yet another part of the positive correlation may indeed be due to a bias in the ratings, although the bias might not be large.

Researchers currently are trying to determine the degree to which an attributional bias (people's tendency to take credit for successes and avoid blame for failure) and a retributional bias (students "reward" teachers who give them high grades by giving ther high evaluations, whereas they "punish" teachers who give them lower grades by giving them lower evaluations) are at work.

Research Should Extend to Multiple Variables

TP: What's your overall impression of the quality of research done on instructional evaluation?

Feldman: From one point of view, the quality is high — hardly a surprising observation since the research has usually been done by professional researchers, who generally know what they are doing. This is true for the individual researcher interested in some theoretical question as well as for members of an institutional research department interested in practical applications.

From another point of view, however, I do want to register certain complaints. Much of the research in the area is little more than a series of bivariate (two-variable) analyses. More complex, multivariate analyses are needed, with increased emphasis paid to the possible causal connections among variables. I should note that the research has gotten better along these lines over the past five or 10 years.

TP: How do you explain the contradictions that exist in this research — some studies report findings supporting one conclusion; others offer data supporting a quite different conclusion?

Feldman: First, let me say that any contradictions that are found must be put into perspective. In some circumstances, one set of findings that contradict another may represent the exception rather than the rule, and should be interpreted as such.

For example, about 10 years ago, Peter Cohen synthesized the research on the association between overall ratings of instructors and the achievement of students (see his dissertation, 1980, and article in the *Review of Educational Research*, 1981). These studies compared multisection courses — where, in the typical study, different instructors taught different sections of the same course, using the same syllabus and textbooks, and a common external final exam (i.e., an exam developed by someone other than the instructors). From data on 67 multisection courses in 40 different studies, Cohen found that the average correlation between the overall evaluation of teachers and the achievement of students was +.43.

Not all the correlations were positive, however. Considering only the direction of results and not their statistical significance, 59 of the correlations were

positive, whereas 8 were inverse. Obviously, the inverse correlations cannot be ignored, but they should not be given excessive weight either. For instance, it would be incorrect to offer these eight correlations in isolation as evidence that student ratings of teachers are invalid. One would, of course, want to explore the reasons for these inverse correlations. They may be traceable to such things as the research design of the study, the sample of teachers or courses studied, the particular college or university at which the study was done, and the like.

Second, some contradictions may be explained as not really contradictions as much as "errors" or "mistakes" in the initial conceptualizations, categorizations, and assumptions made by the researcher or analyst.

I'll use an example from my own work. A while back, I synthesized the research on the association between the experience of college teachers and the ratings they receive from their students. I considered the teachers' academic rank, age, and years of teaching service as indicators of the teachers' experience. I assumed that each of these three indicators would be related to overall evaluation in the same way, but I was wrong.

Not all studies found these indicators to be related to evaluation, but when they were, age and years of teaching service were usually inversely associated with evaluation, while rank of the instructor was usually positively associated with evaluations. Clearly, academic rank, age, and years of teaching service were not interchangeable, and therefore I had to explore possible reasons for the differences in findings.

Incidentally, even when "real" contradictions are found, they should not be seen as undesirable (although I admit they may be troublesome or pesky), for they push the researcher or analyst to think more deeply about the topic under consideration, to explore existing data more thoroughly, and to do additional research. The goal is to establish the conditions and contexts under which a generalization holds true and the conditions and contexts under which either it doesn't hold true or just its opposite prevails.

Talk About Teaching

In "conversations about the great concerns of life, there is a subtext," writes Robert Hahn. "When we talk about love — or religion or art, honor or truth — or about teaching, there is, naturally, an explicit text where our words mean what they say." But something else lurks in those conversations, a subtext.

And what is the subtext? "It is a language of concealed contradictions and submerged paradoxes. When we speak of a hope such as 'building a community of learners,' our words are shadowed, like a shape beneath a wave, by a fear that we have already destroyed whatever social fabric could bind communities together; that by any measure of cultural literacy, we find few learners, less learning; and the task is not 'building' (with its affirmative ring) but reconstructing a blasted landscape."

Hahn challenges us to listen closely to the talk about teaching as we hear it in conversations of our colleagues, comments of our administrators, and the larger dialogue occurring across North America. "When we listen to both text and subtext, we hear a counterpoint, a reverberating interplay between the hope in our words and the unease in our minds."

Consider the "subtext" in these commonly heard expressions: "designing classroom environments," "recognizing the exemplary," "assessing learning outcomes," "restructuring teacher education," and "collaborative learning." Hahn's aim is not to chide us; he doesn't admonish us to abandon our current descriptions. Rather, his purpose is to make us really hear "what we talk about when we talk about teaching."

Hahn, Robert. "What We Talk About When We Talk About Teaching." *Change* (September/October 1990): 45-49.

Falling in Love With Teaching

by Glenn Hartz, Ohio State University, Mansfield

Imagine yourself *looking forward* to teaching your classes: you just can't wait to enjoy your next delicious educational experience. That sounds like a mere fantasy. But I have found that it is possible to make progress in pursuit of that goal, even though there will always be at least a few classes you can't get yourself to anticipate with zest.

I began thinking about this subject the other day after the dean said that on evaluation forms students often say they appreciate an instructor's *enthusiasm for teaching*. Until then I thought that enthusiasm for the discipline was my chief quarry, and that enthusiasm for teaching was at least very nearly the same thing. After reflection, however, I came to see that they are quite different, and that different strategies must be used to cultivate them. Here are a few suggestions about how to develop a love of teaching.

1. Unlearn graduate teaching. It's hard to fall in love with something you've been trained to hate. If you are among the unfortunate who emerge from graduate school with a love of research but some degree of distaste or hatred for teaching, deal with that first. (My own testimonial on this topic is in "Teaching is Not Your Enemy," Journal of Professional Studies, Fall 1990.) Unconvince yourself of the idea that teaching is a liability and a drain on your time — an obstacle standing in the way of what's *really* important.

2. Cultivate appropriate pleasures. The central mark of love is the tendency to take pleasure in activities involving the beloved object. In the case of teaching, one must cultivate a desire for the distinctive pleasures of the teaching process. These include:

watching yourself be the instrument through which students learn, seeing them work hard and get frustrated and then finally break through to new levels of understanding, enjoying a lecture in which it all comes together and the students are hanging on every word, and leading a discussion in which the students respond with probing questions that make you think harder than you ever have about the topic. When you take pleasure in those things, the stud‹ ; will be sure to notice. They will likely respond by taking more pleasure in *learning*.

3. Spend time on teaching. Another mark of love is the desire to spend time with the beloved. You spend time with good friends because you love them. Analogously, if you love teaching you will naturally want to spend time preparing lectures and troubleshooting your courses, building in better pedagogy and smoother delivery. You will take extra time to talk to students who are struggling and to write explicit comments on exams and papers. Nothing is free. If you're saying to yourself, "I know there'd be a catch to this idealistic program," you are right. But my point is that a love of teaching will naturally bring with it a desire to spend more time on teaching.

4. Be approachable. The greater part of falling in love with teaching may well be falling in love with *people*. If you can project a friendly, personable attitude, students will tend to relax and the classroom environment will be more conducive to learning. The techniques for encouraging such an atmosphere include learning the students' names, encouraging them to come to your office when they need help, keeping up with student concerns on campus, staying abreast of current world events, and spending some meeting informally with students outside of class.

Often suggestions about how to improve teaching end up merely altering the surface chemistry of teaching style. Some of those changes are for the better, no doubt, but if one's goal is to improve teaching *dramatically*, they are only halfway measures. Taking teaching to a higher level demands nothing less than a complete overhaul of one's deepest attitudes toward teaching. So instead of saying, "Do these things if you want to improve your teaching," I'm saying, "Fall in love with teaching and you will do naturally what improves instruction."

How Old Dogs Learn New Tricks

Ed.'s note: Not every subscriber to The Teaching Professor *renews .... Life is like that. To keep the editor apprised of the complaints of our readers, the publisher forwards comments from those who decide not to renew. One of the most disturbing arrived recently: "I will let my subscription expire. The newsletter is useful, but I find I have too little time to read it. I'm gradually concluding that teaching professors don't have time to learn to teach better. Sad, huh?" Fortunately, the counterpoint arrived a few days later, which we reprint here verbatim.*

Dear Dr. Weimer,

I am writing to tell you about *Writing to Learn*, by William Zinsser (Harper & Row, 1988, $15.95), which has helped me greatly in my teaching.

Zinsser's premise is that writing and revising "helps students think" (p. 46). This may not seem especially new, but his book is groundbreaking because he applies this to writing *across the curriculum*. He sees writing as the best means to get "students to write who were afraid of writing" *and* to get "students to learn who were afraid of learning" (p. ix).

His "analysis" (Part 1) — a dialogue with faculty in various fields at different schools — leads directly to a tour of the undergraduate curriculum (Part 2), in which he demonstrates that writing helps students learn, regardless of the discipline (art, music, sociology, even geology, biology, zoology, astronomy, mathematics, physics, and chemistry).

Think Creatively About the Benefits of Writing

One example of many demonstrates his point. Joan Countryman teaches high school math. She asks her students to write about whatever they wish in a notebook for the first 10 minutes of each 50-minute period. She then collects and reads their notebooks. Although only half of their entries may discuss math, the exercise accomplishes two purposes. It enables her to track students' thinking about and struggles with math (letting her deal with them privately or in class). It also "clears their palates" of the distractions which all students bring to class, enabling them to focus more clearly on math .... Despite (Because of) the time "lost" at the beginning of each class, she does not lose any ground in her courses and her students are much more attentive and motivated.

I used this in one class with fear and trepidation (What will the students think?) and silence (What will my colleagues think?). I asked my students to write anything they wanted about what they had done for that course (exegesis of biblical Hebrew) during the preceding week. I read their answers while they took a quiz. I could then address questions in the order that *I* thought best, and respond to their other concerns either personally or publicly. I now intend to do this in as many courses as possible.

Teachers committed to writing across the curriculum will be encouraged — and stimulated to think ever more creatively; those unfamiliar with the concept will become believers. If you can get a copy, I hope that you will not only read it, but also encourage your readers to do so as well. *Writing to Learn* cannot but help us as we teach, and our students as they learn.

Most sincerely,
Frederic C. Putnam, Biblical Theological Seminary

P.S. from the editor: The book's every bit as good as he claims.