Center for Teaching Excellence

This is the twenty-first of a series of newsletters encouraging faculty enrichment and excellence in teaching by announcing opportunities, sharing ideas, and promoting collaboration.

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Congratulations on completing another academic year!

Thanks again to those of you who agreed to give your classes online evaluations this semester. Of course, there were some problems; that is why we needed to do a pilot study.
I will make a more specific report when we know more details.

Anticipate future announcements of Summer Workshops to enhance your effectiveness in the classroom.

Teaching Writing	*May 14*
Respecting Diversity	*mid-June*
Using Technology	*mid to late June*
Teaching a First-year Seminar	*early August*

Here are two messages from Gerard Flynn, Director of Pepperdine's Institutional Technology Support. You may contact him at (310) 506-7264 or gflynn@pepperdine.edu.

The first is a questionnaire regarding your use of Blackboard and your interest in other such Learning Management Systems (LMS). Please take a few minutes to complete the survey by clicking on the indicated link.

Pepperdine's Information Technology department is investigating faculty use and satisfaction of Learning Management Systems (LMS), e.g. Blackboard, and is collaborating with faculty about future LMS features and vendors that might be employed. Kindly help inform the study by participating in the following survey:

http://pepperdine.qualtrics.com/SE?SID=SV_a3Oid9asclojLLK&SVID=Prod

The second is an opportunity for you to learn a bit about Elluminate.

On April 22, 2009, the Information Technology department hosted an Elluminate conference at the Drescher campus. Representatives from Pepperdine, Elluminate, and CSUN gave presentations detailing best practices when using this collaborative program. In order to view a recording of the presentations, please visit the following link:

https://sas.elluminate.com/p.jnlp?psid=2009-04-21.1037.C.E2687FFFFD4551E37804446F39D064.vcr

Following are two articles for your edification. The first was sent to me by Darryl Tippens and by Don Thompson. It is from The Chronicle of Higher Education, May 1, 2009. The second is from Chris Heard and is from Inside Higher Education, May 4, 2009.

From the issue dated May 1, 2009

Close the Book. Recall. Write It Down.

That old study method still works, researchers say. So why don't professors preach it?

By DAVID GLENN

The scene: A rigorous intro-level survey course in biology, history, or economics. You're the instructor, and students are crowding the lectern, pleading for study advice for the midterm.

If you're like many professors, you'll tell them something like this: *Read carefully. Write down unfamiliar terms and look up their meanings. Make an outline. Reread each chapter.*

That's not terrible advice. But some scientists would say that you've left out the most important step: *Put the book aside and hide your notes. Then recall everything you can. Write it down, or, if you're uninhibited, say it out loud.*

Two psychology journals have recently published papers showing that this strategy works, the latest findings from a decades-old body of research. When students study on their own, "active recall" — recitation, for instance, or flashcards and other self-quizzing — is the most effective way to inscribe something in long-term memory.

Yet many college instructors are only dimly familiar with that research. And in March, when Mark A. McDaniel, a professor of psychology at Washington University in St. Louis and one author of the new studies, gave a talk at a conference of the National Center for Academic Transformation, people fretted that the approach was oriented toward robotic memorization, not true learning.

Don't Reread

A central idea of Mr. McDaniel's work, which appears in the April issue of *Psychological Science* and the January issue of *Contemporary Educational Psychology,* is that it is generally a mistake to read and reread a textbook passage. That strategy feels intuitively right to many students — but it's much less effective than active recall, and it can give rise to a false sense of confidence.

"When you've got your chemis-try book in front of you, everything's right there on the page, it's all very familiar and

fluent," says Jeffrey D. Karpicke, an assistant professor of psychology at Purdue University and lead author of a paper in the May issue of *Memory* about students' faulty intuitions about effective study habits.

"So you could say to yourself, 'Yeah, I know this. Sure, this is all very familiar,'" Mr. Karpicke continues. "But of course, when you go in to take a classroom test, or in real life when you need to reconstruct your knowledge, the book's not there. In our experiments, when students repeatedly read something, it falsely inflates their sense of their own learning."

These findings about active recall are not new or faddish or parochial. The research has been deepened and systematized recently by scholars at the University of California at Los Angeles and Washington University in St. Louis (where Mr. Karpicke earned his doctorate in 2007). But the basic insight goes back decades. One of the new papers tips its hat to a recitation-based method known as "SQ3R," which was popularized in *Effective Study,* a 1946 book by Francis P. Robinson.

So if this wisdom is so well-established — at least among psychologists — should colleges explicitly try to coax students to use these study techniques? And if so, how? That is the question that the authors of these papers are now pondering.

"I think it's a mistake for us to think that just publishing this work in a few journals is going to have a huge impact in the classroom," says Mr. McDaniel.

After a decade of working in this area, Mr. McDaniel feels enough confidence in his findings that he is willing to proselytize about them. He and his colleagues have also been promoting the idea of frequent low-stakes classroom quizzes (*The Chronicle*, June 8, 2007).

Among other things, Mr. McDaniel has recently collaborated with a network of biology instructors who would like to improve the pass rates in their introductory courses.

One of those scholars is Kirk Bartholomew, an assistant professor of biology at Sacred Heart University. He first crossed paths with Mr. McDaniel at a conference sponsored by a textbook publisher.

"He basically confirmed my ideas — that after you've read something once, you've gotten what you're going to get out of it, and then you need to go out and start applying the information," Mr. Bartholomew says.

The two scholars collaborated on a Web interface that encouraged students to try different study techniques. The first round of research did not turn up any dramatic patterns, Mr. Bartholomew says — other than the unsurprising fact that his students did better if they spent more time studying. But he says that he looks forward to refining the system.

Rote learning?

In March, however, when Mr. McDaniel took his message to the National Center for Academic Transformation meeting, his talk was not entirely well received.

Several days after his appearance, he got a note from Carol A. Twigg, the center's chief executive. "She said, 'We really

loved having you, but you created some controversy here,'" Mr. McDaniel says. According to Ms. Twigg's note, some people worried that Mr. McDaniel's techniques might generate rote memorization at the expense of deeper kinds of learning.

Michael R. Reder, director of Connecticut College's Center for Teaching and Learning, had a similar reaction to one of Mr. McDaniel's new papers on studying.

The paper seems perfectly valid on its own terms and might offer a "useful tool," Mr. Reder says. But in his view, the paper also "suggests an old model of learning. You know, I'm going to give information to the students, and the students then memorize that information and then spit it back."

Mr. McDaniel finds such reactions frustrating. One experiment in his new paper suggests that a week after reading a complex passage, people who recited the material after reading it did much better at solving problems that involved analyzing and drawing inferences from the material than did people who simply read the passage twice.

"I don't think these techniques will necessarily result in rote memorization," Mr. McDaniel says. "If you ask people to free-recall, you can generate a better mental model of a subject area, and in turn that can lead to better problem-solving."

And in some college courses, he continues, a certain amount of memorization is impossible to escape — so it might as well be done effectively.

In Biology 101, for example, "you've got a heavily fact-laden course. When I talk to biology instructors at Big Ten universities, they're working really hard to create interesting, interactive courses where they've got 500 or 600 kids in a lecture class. But no matter how engaging you make the course, the students need to have the knowledge base to do the inquiry-based problem-solving activities that you've designed."

From Lab to Classroom

Mr. McDaniel and several other scholars recently wrote an essay about applying basic research about learning in real-world classrooms, which will appear in a forthcoming edited volume on the teaching of psychology.

One of his co-authors says that he is a bit more cautious than Mr. McDaniel about trying to bring new findings from the lab into the real world. "You need to be careful when you move from a relatively simple environment like the laboratory to a complex classroom environment where people have different motivations, different background knowledge, all those sorts of things," says David B. Daniel, an associate professor of psychology at James Madison University.

Mr. Daniel points to a disheartening 2004 study that found that some features of contemporary textbooks — prominent subject headings, questions and outlines at the beginning of chapters, and so on — actually seem to hinder some students' learning, because students read only the bells and whistles and skip the main text. Many of those textbook features were based on scientific studies of learning — but putting them into real-world practice may have backfired, at least for some students.

Mr. Karpicke, of Purdue, agrees that scholars should be sensitive to real-world complexities. One way to ensure that sensitivity, he says, would be for college "teaching centers" to foster conversations between research psychologists and

classroom instructors from various disciplines. That is happening at Purdue, at least to a limited extent, Mr. Karpicke says, and more colleges should do the same.

"I think that's the wave of the future in education research," he says. "We need to be getting teams of people together. People who are useful — at least I'd like to think that I'm useful, as someone who knows the cognitive science behind learning. And people like me need to talk to people who are doing research in actual classrooms, and then people who know the course content. You've got to have those three components."

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Didaction

April 29, 2009
By **Rob Weir**

Want your lecture to be more than a talker and an undifferentiated mass of bent-headed note-takers? Consider “didaction,” a mix of exposition and student action. Didaction is what public school teachers do as a survival mechanism — most of their charges simply can’t stay focused for 50 consecutive minutes of “chalk and talk.” Your undergraduates are products of those skilled teachers who integrate three or four separate activities into a single class. You can’t do as many activities in the roughly 2,400 semester minutes you’ll have with students — about 10 percent of a high school teacher’s contact minutes — but you can do plenty to involve students, even if you’re speaking before classes the size of a small rock concert. Among them:

1. Brainstorm shout-outs: An easy way to involve a large group is to pose an open-ended question appropriate for brainstorming and just ask students to yell out ideas. For instance, when I lecture on Baby Boomers entering college in the 1960s I just ask students: “What are some of the values from their 1950s childhood that Baby Boomers might come to question?” I quickly jot down responses on the blackboard. It takes about a minute and chances are that I’ve already woven most of these into the lecture. But when I hit one the students suggested I turn to the blackboard and point to it.

2. Say it in pictures: PowerPoint is much maligned because it’s so poorly used. (Is there *anything* more boring or insulting than having someone read a slide to an audience?) It can, however, be a powerful tool if you use it like a combo overhead projector/slide projector. Show images and ask students to comment on them. Your “lecture” will consist mainly of summarizing the correct assumptions students extract from images, data, etc. *Still images* work much better in the classroom than video. Students often let moving images wash over them rather than drinking them in. Still images slow them down. *Anytime* you have data or geographic references, project them or don’t bother to mention them at all.

A variant is to have students *listen to somebody who isn’t you*. I like to use music. Recommendation: If you

use music, and if it's the lyric you want students to consider, either pass them out or project them. If there's something in the music itself, cue students about what it is you want them to hear and when it's coming. Ask for immediate feedback.

3. Be a story teller and solicit input: A skilled lecturer can turn information-giving into a story. I once heard an astronomer tell the story of the lifecycle of stars with such finesse that he could stop and ask listeners what would happen next. Most of the time the answers were right, but when they weren't he went back to storytelling to explain the error.

4. Do a demonstration of the concept just explained: This has been a staple of good chemistry profs for years, but it works for most disciplines. Give the facts, properties, or sequence then set up a quick experiment or scenario that asks students to apply what they've just heard. It need not be complex. I once projected and explained the phases of the Chinese concept of dynastic cycles, gave a 10-minute capsule summary of the Qin Dynasty, then stopped the lecture and asked students to take one minute to scan their notes and label the dynastic cycle phases. Then I projected the Qin cycle that I prepared before class and asked them to compare it to what they had done.

A friend who teaches computer science tells his students that each will be responsible for writing one line of code at the end at the end of his explanation. He gives them a minute or two to compose the code then solicits one line at a time that he plugs into a program projected for all to see. He writes what he's given even if he knows there's a glitch and lets his students unravel the errors to see *why* it's an error.

5. Do a two-minute scenario/role play: You can do this in lectures of hundreds of students. I've lectured on the tactics of Joseph McCarthy and asked students to consider what *their* options would have been. I walk away from the podium and wade into the crowd, Oprah-like. (That alone changes the mood!) I select a random student and ask McCarthy-like questions. When he or she answers — which invariably evokes nervous laughter — I walk up to another student and ask the same questions. Then I simply ask, "OK, so what realistic options *would* a person have if asked such questions?" This drives the lesson home faster and harder than I could do by reciting chapter and verse.

6. Be controversial/provocative/silly: I do this when I sense that class attention is drifting. I'll purposely shift gears and say something outrageous, wait for the ears to perk up, and then ask, "OK, so you folks tell *me* why I'm nuts!" For instance, during an attention lull on a lecture on Reconstruction I burst out with, "Just think how much better off the United States would have been if the Union had executed all former Confederate soldiers." When the stupor broke I said, "Now that I have your attention, let's brainstorm about the obstacles facing policymakers after the Civil War." Cheap? You bet. Effective? Yep.

7. Time out to look it up: Many classrooms have wireless Internet and lots of students bring their laptops to class. You can break the monotony by taking a "look it up" break. I sometimes feign having forgotten something and ask someone to Google it; though there's plenty I actually *do* forget and ask students to retrieve. Even better is to plan a pause where you can ask three or four students to look up different things you know are easily retrievable, have them report their findings, and assemble the puzzle pieces as a whole.

8. Ask affective questions: This is tried, true, and often trite, but it does get students active. Traditional Q & A is directed at obtaining a “correct” answer. In a large group that can be intimidating, but most students can tell you how something makes them *feel* or *think*. This doesn’t go anywhere on its own, but such questions break the routine and give you an opportunity to discuss applications of student affects.

9. Encourage interruptions: Let students know that questions or comments can occur anytime. Many novice lecturers fear that a question will get them off track, expose knowledge gaps, or waste time. Embrace *controlled* digressions. You can always stop conversation simply by saying, “Thanks for these fascinating ideas. We need to get back on task now, but let me mull over some of these things for later.” That’s also how you can handle something you don’t know if you’re not comfortable with saying, “Wow, great question and to be honest, I don’t know.”

10. End class with a question to ponder: Give a puzzle, problem, scenario, or dilemma and tell students you want to lead with that next time--the more open-ended the better. But don’t forget to start with it in the next lecture!

Resources:

1. See a summary of results on enlivening math classes.

2. University of Oklahoma Program for Instructional Innovation (See Enhanced Lecture section).

3. Carleton College Teaching Introductory Geoscience.

4. Cal State on interactive chemistry lectures.

5. Boston University interactive physics demonstration.

Go to comments (3) »

- The author has provided us with 10 effective techniques that instructors can use to make their lectures more interesting. These lecture by-products also encourage students to think more critically and to respond to the topic being presented. It is a "breath of fresh air" for both instructor and students in what might otherwise have been a boring lecture.

- Didaction
- Posted by Charles Jannuzi , Assoc. Prof. at University of Fukui, Japan on April 30, 2009 at 11:15pm EDT

- Great tips all. I will have to think, though, about making them work at presentations at conferences too.

If you have to cross language and culture barriers, I suggest a basic way of looking at tasks within the classroom:

(1) Always, always demonstrate with very specific examples.

(2) Take ever task you plan and try to break it down into two sub-tasks. Then consider if these sub-tasks might be broken down as well. It is very difficult when dealing with SL and FL beginners if you give them complicated sets of instructions. So if you want them to do adult-like, complicated tasks, the best way is to break procedures down into micro-steps, at least until something becomes routine.

Have a productive and enjoyable summer!

If you have any questions or suggestions, please let me know.