



## Applying the Scholarship of Teaching and Learning: How Can We Do Better?

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As readers of *The Teaching Professor*, I am sure you have wondered how to improve teaching and learning on your campus. I believe the answer involves the scholarship of teaching and learning (SoTL).

SoTL goes beyond being a good teacher (facilitating significant student learning) and beyond being a scholarly teacher (reading the pedagogical literature, attending teaching development activities, etc.). It involves systematic reflection on teaching and/or learning and the public sharing of such work.

SoTL encompasses established criteria of scholarship in general and usually reflects the epistemology of the discipline in which it occurs. Thus, SoTL depends both on the type and characteristics of that work. For example, practices such as classroom research and reporting on adaptation, implementation, and assessment of new techniques may be SoTL if that work is systematic (i.e., based on prior literature and/or theory and follows appropriate methods) and public (i.e., shared and open to peer review).

The soul of this work is its applied nature, its potential to improve teaching and enhance learning. As I prepared an article for the 2004 issue of *To Improve the Academy* (out in October 2003), I realized that the application of our SoTL work to improve teaching and learning is woefully insufficient in practice. I searched for concrete, specific, and explicit examples of the application of SoTL findings at the course and other levels and found few, even though SoTL work is now appearing in a variety of outlets.

### Problem areas

Here are some problem areas in our use of SoTL:

- Discussions of how the results/conclusions of SoTL work are applied are missing or lack sufficient detail.
- Application most often occurs at the individual classroom level, rather than at program or institutional levels.
- Extant literature is not always used; new pedagogical knowledge often doesn't build on what is already known.
- Efforts to involve others within and across institutions in SoTL and its application fail to gain new converts.
- Possible generalizations from the SoTL work of others (both in our own and related disciplines) are often not made to our own situations.
- Applications of SoTL results are not regularly shared in public or published venues.

### Ways to improve

As John Tagg points out in his recent book, *The Learning Paradigm*, we need to overcome the organizational paradigms that impede innovation and assessment. We also need to overcome fear of evaluation and of change, lack of knowledge of or resistance to the SoTL literature, insufficient local SoTL data, different interpretations of data and implications, limited resources, and insufficient administrator or collegial support. There is no one best model for applying SoTL. We must create opportunities to use SoTL and change department and institutional cultures over time. Here are some ways you can be involved.

### In your own courses and teaching

- Draw on your own or others' SoTL results, and make improvements related to your teaching and students' learning.
- Work on a SoTL project, and use the results of your work and that of others to improve teaching and learning. (For a formal program opportunity, see [http://www.carnegiefoundation.org/CA\\_STL/highered/scholars\\_program.htm](http://www.carnegiefoundation.org/CA_STL/highered/scholars_program.htm)).
- When you publish or present SoTL work, include explicit and specific discussion of your application of results.

### At the departmental level

- Sit on your department curriculum committee, and present proposals to faculty members that contain explicit reference to relevant, extant SoTL work.
- Meet regularly with department colleagues to discuss current SoTL work in your discipline and how that work can be used in the courses and curriculum of the department.
- Work with junior colleagues or graduate

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- We are interested in a wide range of teaching-learning topics.
- We are interested in innovative strategies, techniques, and approaches that facilitate learning and in reflective analyses of educational issues of concern.
- Write with the understanding that your audience includes faculty in a wide variety of disciplines and in a number of different institutional settings; i.e., what you describe must be relevant to a significant proportion of our audience.
- Write directly to the audience, remembering that this is a newsLETTER.
- Keep the article short; generally between 2 and 3 double-spaced pages.
- If you'd like some initial feedback on a topic you're considering, you're welcome to share it electronically with the editor.

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# Debunk These 10 Myths About Teaching and Learning

By Thomas R. Rosebrough

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**Myth 1:** Blank stares and bovine-like eyes on student faces are inevitable and unavoidable; expect to see them when teaching.

**Fact:** Human curiosity is a natural gift that good teachers can rekindle and nurture.

**Myth 2:** Lectures, even well-planned ones, dampen enthusiasm for learning.

**Fact:** Students lack knowledge and can benefit from professors whose lectures connect to their individual experiences. However, few professors are gifted lecturers.

**Myth 3:** Effective teaching occurs in direct proportion to time on task.

**Fact:** The quantity of time spent on learning something is not a reliable variable in itself. While time can be an important element in learning, the key to effective teaching is always the quality of the time, i.e., how engaged the learner is with the subject matter.

**Myth 4:** Teaching someone something adds to his or her storehouse of knowledge.

**Fact:** Teaching is more than telling someone something new. Teaching occurs when learning happens, and learning results when students are engaged with new information in contexts meaningful to them.

**Myth 5:** Tests contribute to the learning process because they show what the students have learned.

**Fact:** Exams hold students accountable and can give important feedback that reinforces learning. Learning, however, is only demonstrated in students' ability to apply their new knowledge in different contexts.

**Myth 6:** The best teachers are those professors with a reputation for being hard.

**Fact:** Rigor is good when it means maximum, meaningful learning. Rigor is bad

when it means excessive and irrelevant requirements for the learner.

**Myth 7:** Professors with a reputation for making learning "fun" have sacrificed standards.

**Fact:** Emotion is a basic human structure connected to learning. The best teachers find ways to touch the joy of learning.

**Myth 8:** Twenty-first century technological advances are demonstrating how dispensable teachers are.

**Fact:** Students need teachers' assistance in learning. The process of learning requires the organization, insightful challenges, feedback, and motivation that good teachers provide.

**Myth 9:** The traditional role of teacher, the "coverer" of essential subject matter, is vital.

**Fact:** Teaching in the traditional sense is vastly overrated. Learners often learn despite unnecessary emphasis on coverage but find such teaching mostly irrelevant.

**Myth 10:** College students are ready for symbolic thought and higher order reasoning.

**Fact:** Half of college freshman have not reached this formal stage of cognitive development. The most effective professors take this research into account and otherwise plan for concrete-thinking students by fostering interaction between students and their physical environment, between students and others (including professors and peers).

**Note from the author:** The research behind the above facts is strong. However, I do realize that one person's facts are another's fiction. These facts, as I see them, have been gleaned from findings about learning in the fields of education, psychology, and even neurobiology. If you're interested in learning more, may I recommend a respected book in the learning field, *How People Learn: Brain, Mind, Experience, and School*, published in 1999 by the National Academy Press. 🍀

# Freshmen Can Learn from Project Critiquing Workshops

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The workshop format is an effective, student-centered approach to critiquing projects. It enables the entire class to enter into a dialogue and make revision suggestions. Generally reserved for upper-level courses or graduate seminars, workshops can be beneficial at the freshman level as well. In fact, freshmen welcome the opportunity to share their work with their classmates and enjoy being treated as members of the academy rather than beginners. Workshops help freshmen understand the importance of audience, improve their self-critiquing skills, give them a sense of authority, enhance their dialogue with fellow classmates, and allow them to practice using the discourse of the discipline.

Flexible enough, the workshop format can be used in small or large classes. If the class is small (under 20), the whole class and the instructor participate in one workshop. With large seminar-style classes, the instructor forms groups that meet to critique and respond to members' projects. Each group is assigned a workshop leader, and the instructor floats among the groups. Obviously, larger classes require more instructor coordination, but workshops are effective here. Furthermore, workshops can be used in most disciplines. A set of homework problems, a sociology report, a freshman seminar project, or a written outline of a speech — indeed any project that would benefit from class discussion and critique is viable material for a workshop.

## How to organize workshop sessions

Before the workshop session, I collect student work, copy it, and distribute it to the students to study in advance. Before the workshop starts, students are given the criteria appropriate for that particular assignment. For freshmen, it is important that these criteria be specific, concrete,

and followed religiously. Upper-division students may be involved in generating the criteria they use. Sometimes I have students working from a form that lists the relevant criteria; other times I have students write their comments on the text.

Before the discussion begins, I set the ground rules — again this is necessary when students are beginners and have no workshop experience. I have students offer positive comments before constructive ones, maintain an atmosphere of mutual respect, come to class prepared, and participate in the discussion of each project. Students sit in a circle and the student whose work is about to be discussed takes a few moments to talk about his or her project. Sometimes freshmen do not really know what to say, so I ask questions like what prompted them to choose this particular topic for the project, if they had an easy or difficult time with it, or if they spent much time on research or revising.

After the student has introduced his or her project to the class, everyone discusses the topic in general. For example, if a student wrote an essay on the legal drinking age, students would share their views on what the legal age should be. Once the discussion has waned, students begin by offering positive comments. I work to facilitate the exchange by keeping the discussion focused and productive. When someone offers the ever ambiguous, "It's good," (as freshmen often do), I ask for details. After a few workshop sessions, students understand that their comments must be supported with reasons. Then, we move to constructive feedback. At this juncture, I frequently need to guide the conversation away from pointing out typos to more substantive comments that will help the student improve his or her work. When all projects have been workshoped, I summarize the key points students have made that are relevant to many of the workshop projects.

## Benefits

In teaching freshmen, I have found that improved critical thinking and

revision skills are the greatest advantage of workshops. Because students must share their work and ideas with their classmates, they feel accountable, and that motivates them to improve. By learning to critique their classmates' papers, freshmen, in turn, learn how to self-critique and make improvements to their own work.

Although students may be able to identify their audience, they do not fully realize it until they are face to face with a real, live audience. Confronted with a room of their peers, the concept of audience becomes immediately clear. Now, students understand for whom they must write and what effect their papers or projects have on their classmates.

One benefit I did not expect was how quickly students become comfortable talking about the writing process and how easily they begin to have conversations that use the discourse of the field. In addition, some students become experts in certain areas; for instance, one student may find that she is good at spotting weak thesis statements while another may always be the one to point out organization problems. This newfound expertise boosts students' self-confidence.

## Conclusion

Each student leaves the workshop session with a significant amount of verbal and written feedback. Most students report that workshop days are very productive for them and enable them to dramatically improve their papers and reports. Some days I'm disappointed in the caliber of their exchanges, but then I ask myself how we learned to participate in the high-level workshops so important in our professional lives. Workshops improve students' work and the process introduces them to a more student-driven, collaborative discussion and revising experience where they gain a sense of authority as they strengthen their critiquing skills. 🍀

# Do Some Kinds of Learning Happen *Only* in a Classroom?

Ed.'s nte: Among the articles submitted for this issue were two on technology and classrooms. Both tackle the topic from very different perspectives and both raise for our consideration a variety of questions and issues all relevant to these learning "spaces."

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In one of those now strangely distant millennial predictions, Alfred Bork, professor emeritus of Information and Computer Science and Physics at Cal-Irvine, speculated that

Teaching, in the sense of someone conducting a class of twenty or more students, either locally or at a distance, will mostly vanish at all levels of learning. Learning will be a much more individualized and interactive process; computer-based learning material will adapt to the needs and pace of each individual student, through distance learning for large numbers of students (*EDUCAUSE Review*, January/February 2000, 82).

I happened on Bork's observation while I was planning a presentation to the department of finance, insurance, and law on my campus. One feature of a new College of Business building now under construction is that every seat will be wired. As I prepared my remarks, it struck me that the most interesting concern was not the wiring but the seats themselves. Why build classrooms when prophets discern the demise of classes altogether?

## The challenge to traditional class time

The presence of sophisticated technology tests our sense of what classrooms should be and, more importantly, how teachers and students should spend time in them. At one level, computers transform lectures with images, video, and sound — and in doing so raise the stakes. Most of our production, not to mention our performing, abilities pale in comparison with

the polished productions that our students encounter continuously. Were learning merely a matter of acquiring information in structured and well-produced formats, we would be hard pressed to resist that 1970s dream of the videotaped professor.

More important, computers challenge traditional lecture or lecture/discussion pedagogies. Research on active learning is fairly convincing. Students learn more when they are actively engaged with course materials, when they are writing, speaking, exploring cases or scenarios, conducting experiments or simulations, actively reading (that is carrying on a dialogue with a text rather than simply highlighting), or actively listening (as a participant in a dialogue rather than as a passive audience member): in short, when they are doing and reflecting on that doing.

Computers obviously facilitate several active learning practices, especially finding, processing, and sharing information, manipulating data, and preparing artifacts for others. But when and where should we use them? Networked classrooms focus this question in a semi-syllogistic chain of reasoning: if learning is more effective when active, and if computers facilitate student activity, then in a wired classroom why not use them all the time? And if students in such classrooms are using them all the time, what is the justification for gathering in such rooms at all? Obviously, this stream of ifs and then is shot through with problematic assumptions, but the implication is clear: "covering material" can and should become a smaller part of class time.

## What happens best in classes?

The fundamental issue is whether there are substantial learning experiences that can best happen only in classes. If so, we should emphasize them. Face-to-face interactions remain efficient ways to disseminate certain kinds of information, to answer common questions, and to demonstrate some procedures. Even with video-conferencing, certain kinds of body language that cue speakers to adjust their presentations to audiences

are interpreted more effectively through physical presence.

Many discussions or group projects are handled more efficiently in person rather than via e-mail or chat, although those modes have other powerful features to commend them. Students working individually benefit from talking with others as they get stymied — or as they make breakthroughs — and they benefit from overhearing professors talking with their classmates. This is true even when students are connected to the internet or working through a simulation. And there remains a place for lecture, especially in concert with active learning strategies.

There is, finally, an important social and communal dimension to class time. Why, in light of books, journals, and the internet, do faculty still attend professional conferences? Why, more broadly, do people attend concerts, churches, plays, movies, and clubs when they can experience the ostensible content of those events by themselves, on their own time and terms? Why do corporations continue to maintain offices and work hours? Physical presence continues to play an important role in our culture, for complex social and psychological reasons, even ecological ones. Universities should welcome, when possible, opportunities to foster similar interactions.

I want to make it clear that I consider online learning both exciting and important, especially as it depends on active learning strategies. I've done some of this teaching myself, and certainly, many of those courses are far more demanding, for both professors and students, than their traditional counterparts. My point is that as technologies enact active learning, they put a healthy pressure on traditional classrooms — even ones enhanced by computers — to justify their existence. In terms of learning, we need to ask, "What happens best in classrooms?" And I propose that our answers should change the ways we teach in them. I expect those answers will preserve, even revitalize, a role for teaching and learning at common times and places. 🍀

# Spaces That Lay Like Nightmares: Student Learning and the Classrooms Where It Doesn't Happen

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Forty-nine students plus an instructor crowd the modern 24-foot by 24-foot technology classroom. The room allocates 100 square feet for the professorial sage. In that space sits a large, impressive desk, an impregnable technology pulpit complete with overhead projector, and a corner digital projection screen. Each student must fit in less than 10 square feet of space.

The class crammed into this technology room emphasizes learning through forming and solving problems in teams. There are eight groups of students. Each group of six scrapes their desks together leaving no room for anyone to move. As the students work on an information technology problem, their voices bang off the windows and concrete walls in a creeping crescendo that ends with everyone shouting to be heard. A team waves for help. Like any good coach, the instructor goes to the rescue. He jumps onto a student's desk and steps carefully from desk to desk to the back corner of the room where he descends to talk with the students in need. His aerial maneuver goes unnoticed in the din and chaos.

What's wrong with the picture? It confounds almost every possibility of using technology to serve learning instead of teaching. And yet the room is less than 10 years old — some would even call it state of the art.

In a nearby classroom, a ghostly instructor clicks through PowerPoint slides while 65 students surf, play, sleep, or chat on Instant Messenger. Each student sits before a bolted down portable laptop computer. Viewed from the back of the room, each student's computer screen flashes with visual and sensual exuberance. In contrast, the instructor's slides are dark and dense with words, unaware of the difference, he drones on, describing each in detail. To teach in this room, veteran professors say, you have to disable the computers.

Who designs these rooms? Conventional classrooms lay like nightmares on the brains of teachers and learners. Their intractable

limits defeat new ideas about student-centered learning, new techniques like problem-based learning, and new multi-media technologies. At every level and all over the planet, we replicate Horace Mann's 150-year-old design. As Larry Cuban has documented, it stifles efforts to reform education and exploit new technologies. A learning-centered classroom must be configured differently.

The standard teacher-centered classroom inhibits student learning in three ways: 1) it hides students' work from the instructor, 2) it discourages students from collaborating, and 3) it encourages students to loaf while the teacher/sage does all the work.

When the sage moves from the stage to the side, what can she do? In the traditional classroom, not much. If she is to coach, she has to watch students perform in order to instruct and push them to the next level. To do that, she must bang her way through the chairs and stumble over backpacks to look over shoulders. She can pay attention to only one team or even one student at a time.

A learning-centered classroom displays student teamwork and promotes conversations, comparisons, and feedback. Since the give and take of argument around the computer is the very heart of an active learning process, they need to be configured as work centers with space for students and coaches to range freely. Monitors need to be visible to instructors so they can watch the work in progress. Add adjustable acoustics and lighting to this design and classrooms could become studios.

Rensselaer Polytechnic Institute's studio classrooms are good examples of the how we could build classrooms. RPI's faculty have developed classroom designs over the last decade to encourage more teamwork and student/instructor exchanges. In those classrooms, students face the instructor to watch demonstrations or hear mini-lectures. They turn around to work on computers with every screen visible to the instructor who can intervene at the teachable moment.

In the meantime, movable, stackable tables and chairs can make classrooms more flexible and learning friendly. Our habits and mindsets discourage their use

even as we spend money for them. At my institution, you have to take class time at the beginning to arrange the furniture and at the end of class to put them back. If you don't return them to rows, complaints will fill your mailbox.

Will computers be the last in a long line of technologies defeated by Horace Mann's classrooms? Will learning-centered instruction wither away in the teaching-centered classroom? I wish I could say that learning is winning and thriving. 🍓

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## HOW WE CAN DO BETTER FROM PAGE 1

students (future faculty) to help them use SoTL work in their teaching.

### At the institutional level

- Use structures, such as teaching centers, to provide resources and opportunities for sharing best practices that result from SoTL work.
- Include in all teaching award selection criteria how the applicants have applied SoTL work to their teaching and student learning.
- Review and award grants for SoTL work where a required part of the proposal is an explicit applied component.
- Be an advocate for using strategic planning, program reviews, or assessment processes as places to apply relevant SoTL results and implications.
- Talk with administrators about having supporting evidence from SoTL work required as part of the budget request process.

### Beyond your institution...

- Organize or present in a SoTL session at regional or national discipline meetings to help make the use of SoTL public and legitimate.
- Volunteer to help produce a disciplinary association task force report on best practices in your major area that draws on past SoTL work.

## What Needs to Change?

On some dark days, I wonder just how much teaching has actually improved over say the last 25 years. It has been the object now of fixed and prolonged attention what with a wide range of initiatives, some even well funded. Problem-based learning, learning communities, collaborative learning, classroom assessment — how much impact that they had? And these questions lead me to wonder if teaching is now more valued than it used to be.

I wish we had some comparative data, but we never really established any benchmarks so we don't know from where we started. But I fret that not as much has changed as should have. I know some individuals (including me) have changed dramatically how they teach and others who have changed more modestly. I know some initiatives have acquired significant numbers of converts in certain disciplines and at some institutions. I know that pedagogical scholarship is being considered at more places. I may actually get tenure before I retire!

So the journey is underway, but I don't sense that we are anywhere close to arriving. It seems as though we may be creeping forward by inches on a journey that can be measured in miles. And so I've been thinking a lot about this question: Why hasn't more changed? Why do I still have so many colleagues who do nothing but lecture? Why do so many new faculty seem surprised when I talk about ongoing instructional development and a knowledge base that can inform their practice? Why are so many academic leaders still thinking that teaching awards are the way to better instructional practice?

I think the problem is that we need to change more than we ever imagined. We need to change teaching from the inside out. We started by trying to change practice, by giving folks lots of good active learning techniques and many faculty use some of them. The infusion of active learning techniques has transformed teaching, but the change is still around the edges. We need change at the conceptual core.

**We need to change how people think about teaching and learning.** Let me spell out more precisely what I think that means.

**We need to change how faculty think about what they do.** Basically we need to get faculty thinking about instructional practice. So many still teach unaware of what they do and of the premises and assumptions behind favorite practices. Faculty need to be reflective practitioners, able to think analytically about what they do, able to be critical and able to separate themselves from their performance as teachers, so that they can be objective and cultivate accurate self-knowledge.

**We need to change faculty conceptions of teaching.** Teaching does consist of skills, instructional nuts and bolts, strategies, and techniques. It is related and inextricably tied to content — what faculty teach — but seeing teaching exclusively through these lenses results in a simplistic conception that trivializes the complexity inherent in teaching. Classrooms are dynamic milieus where what happens

on any given day never guarantees what will happen on any other given day. In that environment, power lies not in having many techniques but in the ability to manage them, to select those that respond to changing needs.

**We need to change how faculty view the teaching-learning relationship.** First, if learning is the goal, then we need to start there and work back to teaching. What do we know about learning, and how does what we know implicate what students and teachers should be doing? The continuing, almost narcissistic infatuation with teaching prevents faculty from seeing that teaching has no value if it is not connected to and with learning.

Second, faculty need to be much less generic in their thinking about the relationship. It is true that most, but not all, teaching results in learning. But the relationship is much more specific and tightly configured than that. What students

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### Share Your Ideas at the 2004 Teaching Professor Conference

You may recall from last spring and material inserted with your issue, Magna Publications, TP's publisher, is sponsoring a conference on teaching. It's scheduled for May 21-23, 2004, in the Philadelphia area. Check out the conference website for details on registration and the emerging program ([www.teachingprofessor.com](http://www.teachingprofessor.com)). I am thrilled by the prospect of an event that will convene our readers in a face-to-face exchange of ideas, information, and initiatives in support of teaching and learning.

At this point, I want to invite you to submit a program proposal. Over the years, many of you have shared your good ideas, insights, opinions, and wisdom in the newsletter. Here's an opportunity to do that face to face with a group of colleagues

also interested in promoting teaching and learning. You will find the call for programs on the conference website. Please consider submitting a proposal. There are a variety of session formats available.

I do want to underscore our commitment to sessions that are interactive and encourage you to plan from the start how you will involve and engage participants in your session. The newsletter has long advocated instructional strategies and approaches that involve students in the interest of promoting more and better learning. How ironic if we were to sponsor a conference where presenters "lectured" about how to do that. We're committed to sessions that model good teaching. 🍎

# Collaborative Testing: A Method That Maintains Accountability

In previous issues, we have highlighted alternative assessment approaches that let students work together in various ways on tests. The benefits of these approaches are that they teach important collaborative skills (many practitioners pool information and knowledge to make decisions in pressure situations), and they reduce excessive exam anxiety that prevents some students from demonstrating what they know. Some faculty shy away from these approaches because grades measure individual mastery of material, and they want to prevent students who have not learned the material from exploiting those who have. If that is a concern of yours, you should find the following cooperative learning approach to testing of interest. It retains individual accountability, each student's knowledge is tested individually, but it also provides an opportunity for collaboration.

The approach, described in two separate articles (references below) both from the field of nursing, begins with students taking an objective exam on their own. Then during a short period (20 minutes in one case; 10 minutes in the other) at the end of the testing session, they collaborate with an assigned but randomly selected classmate. During that time, the partners may discuss

any question on the exam and based on that discussion they may opt to change or not change their individual answers.

In the experience reported by Lusk and Conklin, the exam scores of students who collaborated were compared with a cohort who had taken the same course but were tested in the traditional manner. There was a statistically significant difference favoring the collaborative scores. However, for both cohorts on the comprehensive final with no opportunity for collaboration, there were no significant differences between the exam scores.

Mitchell and Melton had students record changed answers on a second scantron sheet so that they could track how much the collaboration helped or hurt students. Overall, students' scores increased between one and three points. One student lost a point; another gained 10. When these instructors used the approach the following semester, they capped the maximum points that could be gained or lost at three.

Both groups asked students for feedback on the approach. It was overwhelmingly favorable. Students reported and faculty observed that students did more than just exchange answers, they discussed the question, debated the various options and

questioned each other's opinions as to the answer. In other words, they collaborated. As one student explained, "It help[ed] me explore other options I had originally blocked out the first time I read the questions." (Lusk and Conklin, p. 123).

Both groups also reported the same unexpected advantage of the approach. "Many students admitted to studying harder for the collaborative tests, so that they would not let their partner down." (Lusk and Conklin, p. 124)

Mitchell and Melton conclude with a point relevant to many degree programs. "In nursing education there is a need to focus on practice-related education. Collaborative testing encourages behavior that is absolutely essential in today's work setting. Based on the overall positive experience of collaborative testing, faculty and students have elected to continue its use." (p. 97)

References: Lusk, M. and Conklin, L. (2002). Collaborative testing to promote learning. *Journal of Nursing Education*, 42, 121-124.

Mitchell, N. and Melton, S. (2003). Collaborative testing: An innovative approach to test taking. *Nurse Educator*, 28 (2), 95-97. 🍀

## WHAT NEEDS TO CHANGE?

FROM PAGE 6

learn and how they learn is fundamentally a function of how they are taught. If instruction is didactic, lecture-based, and content-driven, that produces one kind of learning. If instruction is facilitative, interactive, and experiential, that produces another kind of learning.

**We need to change faculty conceptions of professional growth and development.** A family of issues relate here. For starters, many faculty still have no expectations for their growth and development as teachers. They teach as they were taught from start to finish without variation. I don't think a lot of faculty fall into that category, but many more fail to have expectations for systematic growth for

themselves or colleagues. They take care of their professional development haphazardly, piecemeal, by occasionally attending a teaching workshop, chatting more or less regularly with a colleague who may or may not be instructionally informed, and reading something being passed around the department. This change is also about the knowledge base for teaching: there is one and there should be expectations that it is applied to practice. Like all knowledge bases, this one grows and changes, and there should also be expectations that college teaching professionals keep abreast of new research and current thinking.

**Finally we need to change views of scholarly work on teaching and learning.** Faculty need to stop thinking that the only scholarly work that happens is in

education and is of questionable quality. They need to start recognizing that practitioners based in the disciplines can do first-rate work on teaching and learning. This pedagogical scholarship is not the same as research in the field, although it may use some of the same methods, but is rather a unique form of scholarship that if done well should be counted just like research scholarship is.

And if we changed all that, I think we'd see a different culture for teaching across the landscape of higher education and right at home in our own institutions. This, of course, leads to one last question and it's the one I can't yet answer: How is conceptual change accomplished when what needs to change is how faculty think about teaching and learning? 🍀

# Six Strategies to Make Courses More Learner Centered Without Sacrificing Content

Concerns about covering content are legitimate, but they often block a whole family of techniques that more effectively involve students and promote learning. “I know I should do more active learning, but I have all this content to cover . . .” We routinely favor involving students but we do so understanding that the content-coverage dilemma confronts faculty with difficult decisions.

In two thoughtful, well-documented descriptions of his experiences making geoscience courses more student and learning centered, Mark Harris says that faculty, particularly those at research universities, face two problems. “The first involves the course-level issue of how to utilize new teaching techniques without loss of course content. The second concerns how to pursue teaching innovation without sacrificing time needed to pursue traditional research activities.” (2001, p. 51) Harris proceeds to recommend six strategies that helped him overcome the content and time disincentives.

1. Develop a support network — Whether the network involves an organizational program like a faculty development unit or an informal cohort of like-minded colleagues, “the importance of these networks cannot be overestimated for adopting new pedagogical methods.” (2001, p. 51) Faculty struggling to balance content demands and time issues need advice and encouragement.

2. Implement change incrementally — It takes a tremendous amount of time to overhaul an entire course and much mental focus, especially if the faculty member has limited experience with alternative approaches. Doing fewer allows the instructor to become comfortable with the strategies and to have enough time to thoughtfully assess their impact.

3. Focus on student learning and skill development — The advice here is to start with students and learning, not on the need to improve teaching. When learning is the ultimate, explicit objective of the course, instructor priorities change. Now comprehension supercedes coverage in

importance. In Harris’ words, “The shift to a student-centered perspective changes how an instructor views the goals of a course and how successful teaching is measured.” (2001, p. 51)

4. Use assessment techniques that address learning and comprehension — Traditional, end-of-course rating instruments don’t help much when instructors need feedback on specific approaches and want to see the effect of new strategies on learning outcomes. In a more recent article, Harris describes a “weekly questionnaire” strategy he used with questions designed to “provoke a reflective response.” (2002, p. 516) He tabulates results and reports back to the class. “Initially, students are skeptical about the use of questionnaires, but they are encouraged by the in-class presentation and discussion of their ideas. They become highly motivated when an instructor modifies course plans in response to their comments because this demonstrates that their learning is a real course objective.” (2002, p. 516)

5. Start with non-major courses — Start here because there is more wiggle room with the content issue. Harris also notes that honors and first-year seminar formats encourage innovative approaches and can provide a testing ground for strategies that might be incorporated in other courses subsequently.

6. Make pedagogy part of your research — Even at research universities there is more openness to pedagogical scholarship. And making instructional innovations the object of scholarly inquiry certainly encourages more careful planning, implementation, and assessment. Harris notes, “This strategy involves carrying teaching experiences into research, as opposed to the more commonly encountered transfer of research experiences into teaching.” (2001, p. 52)

Also of value in these two articles are a number strategies Harris reports using that help student teach themselves content outside of class so that more class time can be devoted to activities that promote interaction. For example, he uses reading notes

that direct students to material they must learn (in the 600-page text) and that assist them with particularly difficult parts of the text. “My experience is that these reading notes are highly valued by students because they can structure their out-of-class work efficiently to prepare themselves for the in-class activities.” (2001, p. 52)

In the end, Harris observes, “All of this requires planning and a willingness to understand student learning as it occurs in the classroom. For these reasons, a student-learning centered course requires more on-going effort by an instructor during a semester. However, there are many benefits: students are more engaged in solving meaningful problems, course material is more closely linked to actual practice, and assignments are worth evaluating.” (2002, p. 521)

References: Harris, M. T. (2001). Strategies for implementing pedagogical changes by faculty at a research university. *Journal of Geoscience Education*, 49(1), 50-55.

Harris, M. T. (2002). Developing geoscience student-learning centered courses. *Journal of Geoscience Education*, 49 (1), 515-523.

## DO BETTER

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- Become involved in one of the national initiatives seeking to advance SoTL causes, for example, the Carnegie Academy for the Scholarship of Teaching and Learning (CASTL) ([www.carnegiefoundation.org/CASTL/highered/](http://www.carnegiefoundation.org/CASTL/highered/)) or the American Association for Higher Education SoTL Clusters ([www.aahc.org/initiatives.htm](http://www.aahc.org/initiatives.htm)).

In conclusion, the most important (but not the only) reason to do SoTL is to improve student learning. We need to work harder at the application of this scholarly endeavor, so that learning and development increase.