Obviously this isn’t the first time we’ve shared information on this topic. But it is such a fundamental part of teaching it merits a regular revisit. This particular list of characteristics appears in an excellent book that is all but unknown in the states, *Learning to Teach in Higher Education*, by noted scholar Paul Ramsden. In the case of what makes teaching effective, he writes, “…a great deal is known about the characteristics of effective university teaching. It is undoubtedly a complicated matter; there is no indication of one ‘best way,’ but our understanding of its essential nature is both broad and deep.” (p. 88–89). He organizes that essential knowledge into these six principles, unique for the way he relates them to students’ experiences.

**Principle 1: Interest and explanation**

Students do so much better when they are interested in the topic. “When our interest is aroused in something, whether it is an academic subject or a hobby, we enjoy working hard at it. We come to feel that we can in some way own it and use it to make sense of the world around us.” (p. 98). Coupled with the need to establish the relevance of content, instructors need to craft explanations that enable students to understand the material. It avoids those assessment methods that encourage students to memorize and regurgitate. It recognizes the power of feedback to motivate more effort to learn.

**Principle 2: Concern and respect for students and student learning**

Ramsden starts with the negative about which he is assertive and unequivocal. “Truly awful teaching in higher education is most often revealed by a sheer lack of interest in and compassion for students and student learning. It repeatedly displays the classic symptom of making a subject seem more demanding than it actually is. Some people may get pleasure from this kind of masquerade. They are teaching very badly if they do. Good teaching is nothing to do with making things hard. It is nothing to do with frightening students. It is everything to do with benevolence and humility; it always tries to help students feel that a subject can be mastered; it encourages them to try things out for themselves and succeed at something quickly.” (p. 98)

**Principle 3: Appropriate assessment and feedback**

This principle involves using a variety of assessment techniques and letting there be different ways for students to demonstrate their mastery of the material. It avoids those assessment methods that encourage students to memorize and regurgitate. It recognizes the power of feedback to motivate more effort to learn.

**Principle 4: Clear goals and intellectual challenge**

Effective teachers set high standards for students. They also articulate clear goals. Students should know up front what they will learn and what they will be expected to do with what they know.

**Principle 5: Independence, control and active engagement**

“Good teaching fosters [a] sense of student control over learning and interest in the subject matter.” (p. 100). Good teachers create learning tasks appropriate to the student’s level of understanding. They also recognize the uniqueness of individual learners and avoid the temptation to impose “mass production” standards that treat all learners as if they were exactly the same. “It is worth stressing that we know that students who experience teaching of the kind that permits control by the learner not only learn better, but that they enjoy learning more.” (p. 102)

**Principle 6: Learning from students**

“Effective teaching refuses to take its effect on students for granted. It sees the relation between teaching and learning as problematic, uncertain and relative. Good teaching is open to change: it involves constantly trying to find out what the effects of instruction are on learning, and modifying the instruction in the light of the evidence collected.” (p. 102)

A Thorny Problem: Student Deceptions

Karen Eifler, University of Portland, Oregon
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I grew up watching *M*A*S*H*, a dramatic comedy set in a mobile U.S. army hospital during the Korean War, and it’s influenced my teaching in some surprising ways. One of the characters, Corporal Klinger, spent most of the series trying to get sent home. He dressed in ladies’ gowns, endeavoring to be classified “insane.” In one of my favorite episodes he tries to secure a compassionate leave to attend his grandmother’s funeral in Toledo, Ohio. His commanding officer, Colonel Henry Blake, reviews this latest request and discovers that Klinger has claimed dozens of grandparents’ deaths in the course of a single year, along with various unlikely permutations of this family crisis. Blake never accuses Klinger of lying; he just suggests it is remarkable that the same four grandparents could repeatedly meet such tragic ends.

Early in my professorial career, I noticed two patterns: (1) requests for extensions on papers and forgiven absences spied immediately prior to major breaks, and (2) dying grandparents were nearly always the explanation offered for those requests. I definitely wondered, and sometimes felt guilty, about the close correlation between expiring relatives and due dates listed on my syllabus. As e-mail became the standard mode of communication from students, I often received messages that sounded more like announcements requiring accommodations and less like requests.

In reality, however, students do have family members who die, and human courtesy demands a sympathetic response. Moreover, with students, I aspire to establish caring relationships that are built on professional integrity and honors human civility. I am too; I can understand the student’s need to accommodate and sometimes feel guilty, about the close correlation between expiring relatives and due dates listed on my syllabus. As e-mail became the standard mode of communication from students, I often received messages that sounded more like announcements requiring accommodations and less like requests.

In reality, however, students do have family members who die, and human courtesy demands a sympathetic response. Moreover, with students, I aspire to establish caring relationships that are built on mutual trust, as opposed to operating in a perpetual state of suspicion about requests for special treatment. And while the stories we hear sometimes strain credulity, there is nothing to be gained by suggesting that a student is lying about a death in the family. It seems wise to err on the side of solicitude.

On the other hand, real grief at genuine losses and true need for accommodation are dishonored when someone gets away with a specious and deceptive story to cover not being prepared or wanting a few more days of vacation. So here’s what I’ve come up with: when a student informs me that a close relative has died, I immediately send a condolence card to the whole family, expressing my sympathy for their loss. If the student has been explicit (“It was my grandmother”), I am too; I can also match their vagueness. Our campus directory has all the students’ permanent home addresses listed, so it takes no time to secure that information and slip the card into the mail. If the loss was authentic, the family is touched at the gesture, and I am truly glad to have extended that courtesy. However, if the story was a fabrication, the student finds he or she has some uncomfortable explaining to do to the family, which usually curbs that behavior.

Word gets around, and in my case, it didn’t take more than a year. Students figured out that it wasn’t pleasant getting caught in this lie, and those students who had endured legitimate losses knew they were dealing with a compassionate person who would help them figure out how to meet their academic obligations. I have had students tell me forthrightly they had decided against the facile deception about a dying grandmother and opted instead to just ask for an extension outright. They explained further that they figured anyone willing to call their bluff by sending condolences to the whole family would probably treat them with reasonable due process anyway. This strategy models professional integrity and honors human civility. While *M*A*S*H* may not provide all the answers I need in my work, I think that Colonel Henry Blake would approve of this one.
Values Surveys: Linking Course Content and Students’ Lives

By Barbara A. Mezeske, Hope College, Michigan
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Last week, while teaching Dante’s Inferno, I moderated a lively two-day class discussion about medieval and modern values and religion. How did Dante define virtue? How do we define it? For Dante, why was lust not as terrible a sin as theft of property? Why did his age consider gluttony a moral failing rather than a self-destructive behavior that one can take to Jenny Craig?

I know why students were so engaged: the catalyst for their interest was a “sin survey” I administered the previous week. In the survey, I listed 50 behaviors. These ranged from the medieval sins of gluttony and usury, to acts our culture has no trouble condemning—such as murder, rape and the assassination of presidents. I also listed actions that we might value differently, depending on who we are: binge drinking, cheating on tests and neglecting studies. I included some cultural hot-button issues: premarital sex with numerous partners, homosexual acts, abortion. I tried to make the list both current (including items on biological warfare, for example) and nuanced (listing drunk driving separately from killing someone while driving drunk). The instructions to the students were simple: rate each item from 1 (not sinful at all) to 5 (most sinful). In the past, I have done this activity on paper: this time, I used a Web-based survey program. The survey answers were anonymous. The results of the survey, taken by 47 students in two sections of my literature course, were then averaged, yielding a value from 1 to 5 for each item. The basis for the class discussion, then, was a handout that ranked the 50 behaviors from least to most awful, indicating the distribution of responses (how many 1s, 2s, etc.).

The ensuing discussion was highly charged. Rape and child beating were the two worst behaviors. But surprisingly, cheating on a marriage was also in the top ten. Students debated why. They also noted that while drunk driving was bad, it was worse if someone were killed. “It’s not as bad if you get away with it,” they concluded. They took note of split voting: Though homosexual acts wound up in the middle of our list, nearly an identical number of students rated it “the worst” as rated it “not sinful at all.” “We mirror our culture,” they decided.

What makes this work? I have several ideas. First, since students respond to values questions anonymously, they are more likely to express an unpopular or politically incorrect view than they will in a class discussion. This is clear with hot-button topics: although my campus is relatively conservative, the sin survey indicates more support for abortion, for example, than might be expected. Second, the survey results allow students to evaluate their own stand on an issue against a group norm. Third, the sin survey design links students’ own values and the ideas presented in the course material.

It is this third component that makes a similarly designed values survey potentially useful in other disciplines. Can instructors link the material they teach to students’ values and behaviors? Can a generalized picture of the values and attitudes of a class stimulate good discussion and thoughtful analysis? Consider nursing, for example: What if an instructor asked students to indicate how often they practice healthful behaviors in their diet, sleep patterns and exercise? What would you expect to find? How might this be linked to a discussion of motivating patients to make healthful choices? In economics, one might survey students’ money behaviors: how they use credit, how they budget their money, their awareness of the cost of everyday items (anything from cars and heating bills to taxes and the cost of a draft beer). Are the principles of economics translated into real decisions about money? In education, one might want to learn how students study, what they value about education, what they believe about children. In child psychology, a teacher could ask students to rate a variety of parenting behaviors. In biology, a survey might ask students to respond to a series of real-life scenarios in which they decide whether biological knowledge might be “of no importance” or “crucial.” What role is science likely to play in decisions that communities must make in the years ahead?

Making links between our disciplines and the lives students lead, or expect to lead when they graduate, engages students’ thinking. The best learning happens when students integrate new information into their understanding of the world. We can encourage this by making the ideas and information in any course more personally relevant.

Mid-career years
FROM PAGE 8

to get students to respond, I found that one-third of them did not know the answers. Rather than quickly moving past the chapter, we spent considerably more time on it. But the payoff here is a more solid understanding of the basics of the course material, which makes the more challenging material easier to get through.

In summary, the ability to ask oral or prewritten questions; combine PowerPoint and questions; or set up rapid-grading, student-led questions gives the instructor flexibility. Classes become a mix of lecture and questions, and diverge from the original plan based on the students’ responses. Students do seem to be actively engaged during the class period.
At the heart of the Socratic method—the icon of the inquiry-based learning approach—is the art of asking the “right” question. Indeed, when we engage in casual conversation with friends, our dialogue is often animated and enjoyable—interspersed with questions that force us to engage in a spontaneous and free-flowing exchange of knowledge, ideas and reflection. In an educational context, however, without the markers of personal familiarity and natural interest, the institutional forum of the “seminar” often feels foreign, stilted and intimidating.

After years of teaching large first-year classes with multiple seminar sections and a cohort of new TA seminar leaders each year, I have developed two evaluation rubrics. One is designed to assess student participation, and the other aims to assess student facilitation. Both follow this article. In each case, principles that relate to the skills of asking good questions are embedded within evaluation rubrics. Their presence helps to both frame and assess the teaching and learning environment of the seminar.

Students are assessed on a weekly basis with the participation rubric and are assigned a value out of 20 marks for each seminar. These values are averaged over the 12-week term to yield an average seminar performance rating. This rating is converted to a value of 20 percent of their final grade. During the course of the term, each student is also asked to facilitate a seminar on a given topic (with a partner, if desired). The facilitation evaluation also consists of five levels of assessment with qualitative ratings and corresponding numeric values. This assessment is marked out of 20 and converted to a value of 5 percent of the final grade in the course. Seminars range in number from 15 to 20 students.

These evaluation rubrics grew out of my belief that the seminar is a critical component of inquiry-based learning. As a forum for immediate interpersonal interaction, students benefit from the opportunity to ask questions, observe the enabling effect of these questions on others and assess the overall impact of this exchange of ideas in the teaching and learning context. Students must have the opportunity to both participate and facilitate in this academic exchange with clear and explicit criteria for excellence. In an age when “PowerPoint” presentations prevail in classrooms, the art of spontaneous, interactive, face-to-face dialogue that teaches students how to question and respond in the seminar environment is imperative.

Ed.’s note: The author has graciously granted permission for faculty to reproduce these rubrics for use in class without requesting permission. In all other cases, permission to reprint the rubrics must be requested from Magna Publications, following the standard protocols.

Seminar Participation Evaluation
Rating: Poor (1) Satisfactory (2) Very Good (3) Superior (4)

<table>
<thead>
<tr>
<th>Student Name ________________________________</th>
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<tbody>
<tr>
<td>____ Preparation - Evidence shows preparation for the seminar (has prepared notes and/or recalls the readings without the use of the open text).</td>
</tr>
<tr>
<td>____ Engagement - Quality of engagement is active, respectful &amp; inclusive.</td>
</tr>
<tr>
<td>____ Initiative - Questions asked focus, clarify &amp; summarize discussion.</td>
</tr>
<tr>
<td>____ Response - Quality of response reflects knowledge, comprehension &amp; application of the readings.</td>
</tr>
<tr>
<td>____ Discussion - Quality of response extends the discussion with peers and reflects analysis, synthesis &amp; evaluation.</td>
</tr>
<tr>
<td>____ Total/20</td>
</tr>
<tr>
<td>Anecdotal Comments: ____________________________</td>
</tr>
</tbody>
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PAGE 5 ☛
If you think everybody's pretty much on board with the idea of active learning, think again. I was surprised to find an article that in its opening paragraph describes active learning as "a philosophy and movement that portends trouble for the future of higher education and the American professoriate." (p. 23)

The author acknowledges that active learning is a movement and describes how faculty will experience it—through workshops that address how to incorporate writing and discussion in large classes. "You'll also be exposed to vast numbers of books and articles promoting active learning, including an international journal with the straightforward title of Active Learning in Higher Education. The movement has thus acquired academic and professional legitimacy." (p. 24)

Recognizing the origins of active learning in theories of education like that proposed by Dewey, the author notes, "There are some good ideas among the reams of articles and books about active learning." (p. 26). But he contends active learning is a smoke screen designed to cover deeper problems in higher education—like class size, where if active learning principles are used, they can make the large class seem smaller and therefore make large classes more likely.

The logic is convoluted, and the case supporting a connection between increasing class sizes and the interest in active learning rests more on correlation than causation. It is not substantiated with evidence. Even more distressing is the author's ignorance of the research that justifies approaches that engage students in learning. The author makes one reference (two studies) and then objects to educational jargon. Would you presume to read a research journal in physics, sociology—name a discipline—and then decry the author's use of language?

Educational research, like that in countless other fields, is not written to be read by outsiders, and yes, that does relate to why so much research has so little impact on practice, but that's a different problem. The point here is that the research on active learning is immense, and its implications for practice have been ably translated (see Prince, M. (2004, July). Does active learning work? A review of the research. Journal of Engineering Education, 223–231).

I know; subscribers to a newsletter like this don't need to be persuaded. But we do need to be reminded that much of what we believe and take for granted is still up for grabs in other sectors of the academy. Reading an article like this behooves and prepares us. You never know when you might be called upon to answer objections like these.


PARTICIPATION RUBRICS
FROM PAGE 4

Seminar Facilitation Evaluation

Student Facilitators: 1. _____________________________ 2. _____________________________ Date: _____________

Rating: Poor (1) Satisfactory (2) Very Good (3) Superior (4)

1. Facilitation Skills:
   • Facilitators ask questions and use strategies that draw out knowledge of theory/experience; facilitators are knowledgeable and offer correction & guidance when necessary.

2. Organization:
   • Seminar is structured in a clear & logical sequence.

3. Originality:
   • Visual and written aids are interesting, innovative/creative & helpful.

4. Engagement:
   • Facilitators generate a high degree of student interest; respectful & inclusive; all students encouraged to participate.

4. Discussion:
   • Discussion is focused, relevant & engaging; theory (readings) related to experience; applications & implications clear and accurate.

TOTAL : 20 marks ______________________________________

NOTE: Student cofacilitators may receive similar or different grades, depending upon their level of preparation and contribution.
Faculty Who Can Do It All…

I’ve started working on a new book, and that always necessitates lots of reading and rereading. Even though preparing a newsletter like this keeps me regularly in the literature on teaching on learning, I am always amazed and not a bit chagrined at how much I miss. I’m equally stunned by how much of this important information remains unknown, especially when it has such compelling relevancy. Consider this case in point.

Expectations for faculty work include teaching, research and service—we all know about that three-legged stool, which at most of our institutions involves legs of three different lengths. Despite the interest in teaching and much rhetoric as to its value, expectations for scholarly work continue to increase across most types of institutions, including some of those with teaching missions.

Have you ever wondered how many faculty are actually productive at both teaching and scholarship? Across the years, we’ve highlighted the several different meta-analyses documenting that the two activities are essentially unrelated, but still faculty are expected to do both teaching and scholarship along with a reasonable (sometimes unreasonable) amount of service. How many faculty achieve this ideal? Fairweather (reference below) estimates it’s about 10 percent. His analysis, which looked at faculty across ten different disciplinary groups and all the Carnegie institutional types, found that percentage did not vary by institution. His analysis is thorough, involving a large faculty sample, multiple measures of both research productivity and teaching effectiveness and sophisticated statistical analyses of the data.

Here’s his overall conclusion: “These results strongly suggest that the faculty member who simultaneously achieves above-average levels of productivity in teaching and research—the complete faculty member—is rare. For most faculty, generating high numbers of student contact hours diminishes publication rates and vice versa. Descriptive data suggest that the same applies to spending a large percentage of time on teaching or using labor-intensive instructional collaborative techniques—it is the exceptional faculty member (and not many of them), not the average one, who achieves these instructional outputs while publishing at an above-average rate.” (p. 93)

For the many faculty who’ve tried doing both, the finding does not come as any surprise. However, it is very important to know that the touted ideal is in fact achieved by very few faculty. Years ago Ken Eble, in his wonderful book The Craft of Teaching, made this cryptic observation: “Research is about as compatible with undergraduate teaching as lions are with lambs. Only by one devouring the other are they likely to lie down comfortably side by side.” (xiii)


Transformational Teaching…

The relatively new pedagogical periodical Academy of Management Learning & Education has a regular feature I very much enjoy and wish was part of more of the discipline-based periodicals on teaching and learning. Noted teachers and scholars in the discipline are interviewed and asked questions about teaching, learning and education. Besides being well edited and good reading, the interviews permanently record the wisdom of faculty from whom others can learn much.

A recent issue contains an interview with Robert E. Quinn, a professor of organizational behavior and human resource management at the University of Michigan. Recently he has written three influential books on the “complexity and challenges of leading change.” (p. 487). His work is very relevant to what many teachers try to accomplish with students.

The interviewer asks him to define effective teaching; Quinn responds by describing an experience. He once taught on a campus with a classroom building designed so that one could see into the classrooms. He regularly observed classes there, asking himself what was happening. “All I had to do was look at the body language of the students. In a few classes, the students were on the edge of their seats, deeply involved. In the majority of the classes, the students were draped over their desks, only half awake. I am sure the instructors would tell us those slumped students were not serious about education. In the end, we usually blame the victim.” (p. 488)

Quinn doesn’t buy that the engaged students were somehow different. He thinks those students on the edge of their seats were having a different kind of experience, and he attributes that to the teacher. “To be an extraordinary teacher is to be a positive deviant. A positive deviant is a person with the potential to transform ordinary people and groups into extraordinary people and groups. That is what I think great teachers do. Great teachers call ordinary students to embrace their own greatness.” (p. 488)

He then proceeds to make another important point about teaching. He describes one of his early colleagues, someone he calls “teacher-centric.” This faculty member relied on his expertise and need to control every detail of the class. His syl-
Why Don’t We Teach the Telephone Book?

By Daniel J. Klionsky, University of Michigan, klionsky@umich.edu

I don’t get it! Every fall the new telephone book arrives, filled with lots of information and with loads of new numbers, so why don’t we design a class that covers this material? Nowhere do we teach this information. Why don’t we expect folks to study the telephone book and memorize the numbers? Grudgingly, I am forced to admit that no real justification for memorizing telephone numbers exists, as tempting as it might be for me to teach this course.

For one thing, there are just too many numbers. Back when there were only a dozen or so, it might have been possible to memorize them all—not that it would have served any existential purpose, but just as an exercise. Now there are way too many. My critics tell me the real problem is that the telephone book is pretty useful as a reference. It is well organized and easy to find a number when you need it. In fact, it turns out that most people have no interest in memorizing telephone numbers and only learn those they use regularly, although speed dial can remove even that reason. Basically, all that folks need to know is how to use a phone book.

It is unfortunate that the same logic is not applied to many of our science courses. I write about science because I know it firsthand, but I suspect this applies to many kinds of courses. First, our knowledge of biology (and many other fields) has increased tremendously over the past few decades, well beyond what any individual can hope to master, yet we continue to try to teach “all of it” in the standard biology curriculum. Sometimes there’s no more justification other than that “we know it.” A second problem, however, is that people generally want information when they have a need for it. This means that it is difficult or impossible to get students to want to learn course material if they do not see a practical use for it. Unfortunately, many college and university courses cover information that most students do not need to know and will never need to know, although many of my colleagues find that very difficult to admit.

Many upper division courses contain information that is taught for no real purpose, at least not a purpose that is relevant for the students. These courses are taught for not-very-good reasons such as the department has a faculty member with a specialty in that area. I have sat in on many upper division courses and wondered why the instructor was covering information that I did not know and that I later discovered the instructor only learned the day before while preparing the lecture. If practicing scientists do not know these details, why should undergraduate students be forced to learn them?

Louis Pasteur said, “Chance favors the prepared mind,” and we do not know just what information will be important to us in the future. But I suggest that sentiment argues against courses that teach large amounts of factual information. Rather, we want our students to be prepared to deal effectively with whatever information—uncovered by chance or research—comes their way. Accordingly, we should not teach science (or other subjects) as though every fact is worth knowing, any more than we would use a telephone book to help us memorize numbers. Textbooks are full of useful information and handy to have around when you need to look up a fact. Memorizing facts is not as important as knowing how to ask questions and how to synthesize information to formulate an answer. When we plan out our courses—and our entire curriculum—we should keep this in mind: How much of the information that we are going to cover do the students really need to know? How much time do we devote to making sure students know when they need a fact and how to look it up? Finally, and most important, do our students know what to do with the facts once they find them?

Transformational Teaching

FROM PAGE 6

labus outlined every aspect of the course from beginning to end. Each class session was carefully planned and scripted. “The course was a tightly run ship.” (p. 488)

Quinn compares this with how his classes operated. His courses were “highly ambiguous” experiences. Class sessions were unstructured. Quinn gave students work beyond their capabilities. They discussed their frustrations; he proposed alternative actions they might consider taking.

Interestingly, both classes were highly rated by students. How could that be? “The answer is that great teaching is not primarily about thinking, behavior or techniques. It is not about style. It is about something more basic. It is about our being state. It is about the expression of who we are.” (p. 488)

The interview contains much more, but one final thought for here about the need for change and the reason why teachers find it so disconcerting. Quinn argues that every person and every organization faces a continuing, core dilemma of deep change or death. It’s the old law of entropy. “The problem is that I do not want to make deep change. Making deep change means letting go of control. I can think of no more terrifying thing to do. So I design my life to be comfortable…. As leaders and teachers, we need to learn how to choose to make deep change; if we do, we become empowered and empowering to our students.” (p. 489)

How Remote Responders Affect Teaching

By Karen Lightstone, Saint Mary’s University, Nova Scotia
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A plethora of literature spouts the benefits of remote responders. These responders, often called “clickers,” are handheld devices much like television remotes that enable students to respond en masse to questions posed by the instructor.

The benefits touted include increased class attendance; an opportunity for instructors to identify and intervene early when students are not performing well; the ability to poll students on various issues facilitating discussion, identifying misconceptions and levels of understanding; a simplified way to collect student performance data because the responses are electronically tabulated; assessment by students of their own understanding of material as they see aggregated responses; rapid grading of quizzes or tests providing timely feedback to both students and instructors; less grading time for instructors; and students who pay more attention and take a more active role in the classroom.

Placing the benefits aside, there is very little literature about the administrative details or how different faculty use the device when they teach. I thought I would offer a firsthand report and assessment based on our experiences at Saint Mary’s.

Administration

The system that Saint Mary’s University has adopted campuswide is called the Classroom Performance System (CPS) by eInstruction. There are currently four remote responder systems on the market, and all are supported by various textbook publishers. Aligning oneself with a particular textbook publisher is quite dangerous, as it prohibits the freedom to choose any textbook and virtually wipes out the secondhand textbook market because the system requires access codes that only come in new textbooks.

However, once a system has been adopted, the time and effort needed to set up the class is minimal. When going online to eInstruction.com, the instructor sets up an account, clicks on a few buttons, gives the class a name and is done. The class is automatically assigned a class key, which students use to register their clickers.

We encountered a few problems with students registering. For example, if students leave the field that requests their name blank, eInstruction automatically identifies them with a clicker number. This does increase student anonymity, but it makes it impossible for instructors to figure out who’s who, which they may want to do if they are using clicker data to assign marks for attendance or correct responses, or to identify students who may need extra help. Students can go back and edit their student profiles to correct this problem.

There are two different costs to students for registering. Access codes are required and can be obtained online from eInstruction for a nominal fee paid with a credit card. Initially the cost was US$12 for us because we adopted the system campuswide. This has subsequently dropped to US$10 due to volume. Students may also purchase the access code from the campus bookstore for approximately double the price. Unfortunately, this discriminates against those without access to a credit card. Purchasing an access code as part of the textbook solves this problem, but then only new textbooks can be used because the access code from a used text no longer works.

Editing questions is easy, and I often convert a multiple-choice question into a numeric one to prohibit guessing. Occasionally, I ask students to work on questions from the textbook on their own and without a graphic to illustrate the question.

As an accounting instructor, I find problem-solving exercises to demonstrate the accounting concepts more effectively than lectures. Because I happened to choose a textbook and the textbook publisher supports CPS, I have a good selection of multiple-choice questions available from the publisher’s Web site.

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Teaching

Once all students are registered, the system is ready for daily use. I say “daily” because if you do not use it regularly, students may be concerned about incurring a cost for something that is not used. Eight instructors used CPS in the fall of 2005, and we met to discuss the system and share our experiences. What is most interesting is that we all use the system differently. One physics instructor, with class sizes in excess of 100 students, delivers lectures through slides and incorporates multiple-choice questions into the slides. He then uses the verbal question mode in CPS to capture student responses when each question slide appears.

Several other instructors write questions to ask students at key points during the class. Questions can be true/false, multiple-choice or numeric, and they can be with or without a graphic to illustrate the question.

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