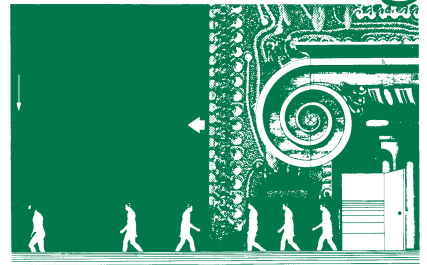


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COMPUTERS

PowerPoint, No! Cyberspace, Yes

Tom Creed
Saint John's University
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Technology is transforming our lives, including our lives as teachers. But *why* and *how* it will transform our teaching needs to be examined. One "why" is that it can enhance student learning because it allows us to do some things better and even to do some things that we couldn't without it. "How" it can enhance student learning is a tougher issue.

Technology in teaching is nothing new. We can hardly think of teaching today without books and overheads; these are hardly controversial technologies. The technology at issue these days is digital, or computer-based, technology. My experience is that **digital technology can enhance our students' learning, but only if our goals for our students' learning drive its use**. We need to view technology as but one of many means of accomplishing our goals. Rather than trying to figure out how we can employ digital technology, we need to ask ourselves, "What do we want to accomplish in our courses, and is digital technology a good way of advancing our teaching goals?"

Not all digital technologies are created equal, at least in terms of their pedagogical value. Some, by

the very nature of how they are most likely to be used, have great potential for enhancing student learning, while others have little potential. To illustrate this point, let me compare the two forms of digital technology most popular with faculty currently—electronic communication (specifically E-mail and electronic conferencing) and presentation graphics (represented by Microsoft's PowerPoint, the most popular software of its kind). Given my pedagogical goals, this comparison will show that electronic communication has great potential for enhancing learning, while PowerPoint is of little or no value. What are my pedagogical goals?

In my courses, I want my students to apply what they learn to their lives. I want the knowledge to become fundamental to their world views. For example, in my Principles of Learning and Behavior course, I want my students to use the concepts presented to help them understand, and improve, their lives. Five years from now, when their boss gives them that certain look and says "In My Office—Right Now," they'll recognize that little knot in the pit of their stomach and think, "Ooooooh! Pavlovian conditioning!" Moreover, I want them to understand the principles so well that they'll have some strategies to cope with the stress that arises from Pavlovian conditioning.

I can identify several characteristics of good pedagogy that contribute to meeting my goals. Among these are:

1. Courses should focus on learning rather than teaching (student-centered vs. teacher-centered).

2. Interaction with the material should be student-controlled rather than teacher-controlled.
3. Content delivery should be based on student knowledge, driven by frequent formative feedback (classroom assessment).
4. Courses should be structured so that students interact with material in a pedagogically sound way.
5. Finally, this should all be accomplished in the most parsimonious way.

Here's a comparison between electronic communication and PowerPoint on these five key pedagogical characteristics.

Comparison of Electronic Communication and PowerPoint

Student- vs. Teacher-centered

Electronic Communication is student-centered. Students are the active users of the technology. They construct what is said, and actively synthesize the course material.

PowerPoint is teacher-centered. It puts the instructor at the center of the action, promoting passivity on the part of students. Whether students are attending or not is incidental to using PowerPoint.

Student- vs. Teacher-controlled

Electronic Communication is student-controlled. Students decide when and where they interact with the course material and each other. This allows them to work when they work best, and have the most time to devote to their work. Students are also in control of how much time they spend using it, and when they make their communication public. This is particularly important with electronic conferencing, in that more reflective, introverted students can take as much time as they need to compose what they want to say, and then post it when they are comfortable with what they have said. Since conversation is no longer in real time, the quick and assertive no longer dominate. This levels the playing field for individuals whose voices may not be heard in the traditional classroom discussion.

PowerPoint lectures are teacher-controlled. Ready or not, here it comes. The instructor controls how much time is spent with the course material and the pace of interaction. If a student didn't get a particular point when the slide was up, he's left floundering. It's gone. This can be particularly problematic if later points of the lecture depend on understanding earlier points. Too fast? Too slow? Too bad. Didn't get your hand up in time? There's always the next class meeting.

Classroom Assessment

Electronic Communication facilitates classroom assessment—monitoring an electronic conference gives invaluable feedback on what students are thinking about the subject matter, where they are having difficulty understanding key concepts and so on. Also, having students E-mail pre-class writing assignments a few hours before

Using PowerPoint in the classroom doesn't necessarily make you a bad person. It does, however, mean that your emphasis is on the quality of your presentation rather than your students' learning.

class meetings allows the instructor to go into class knowing what students understand well and where more work is needed.

PowerPoint-based lectures tell you nothing about whether your students are getting it. In fact you may get less feedback from the class because your eyes and theirs are on the screen rather than looking at each other.

Structuring Students' Interaction with Course Material

Electronic Communication allows the instructor to structure when and

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May

Editor's Note:

Regular readers will have noticed that the last several issues of the Forum have come together with supplements. I've posted supplementary materials on the Forum's Web site (www.ntlf.com). These have proven popular, and we're trying to expand them. We've added a calendar of conferences on teaching. It's tied to both a map of North America and to a twelve-month calendar. Click on a region and see a listing of conferences being held there in the next six months. Click on a particular month and see all the conferences being held then. Help keep this list comprehensive by sending information on meetings you know of to Barb Reed at breed@oryxpress.com.

Many of the "special features" being added to the Web site end up in a section I'm calling the Library. You'll find the UMI abstracts of all the dissertations on teaching and learning for the last six years there, for example. And with this issue, I'm opening a section called "Curiosities" there. Go and have a look at an educational artifact I collected last summer. I've been mulling over its meaning ever since. (Mysterious, huh?)

Other supplementary materials accompanying this issue include an introduction to and downloadable questionnaires and rating scales for the SGID or Small Group Instructional Diagnostic (see the video review on pages 9-10). It's a method for getting solid, usable information about your teaching effectiveness. Also, to flesh out this issue, **Madeleine Picciotto** has allowed me to post two of the scenarios she uses in her writing course at Spelman College (see page 8).

Webs have always connected us; the Internet is but the newest. **Tom Creed** suggests it offers the best use of computer technology for teaching. The colorful ease of presentation software, he warns, can tempt faculty back into older, less effective forms of teaching, now gussied up in new dress.

That temptation, that lure to return to the good old days when teachers taught and students learned and that was that, reminds us that the teaching life was never so simple. In the old days, we failed to reach many students because we didn't know how. Some of them—probably many of them—could have succeeded if we had known, but we didn't. Part of what we didn't know has to do with how humans learn, and a lot of that is now becoming more and more a part of how we teach (as **Peter Summers'** PRAXIS piece demonstrates). But another part may have had to do with that inner web, that mass of inner connections, assumptions and habits that dictate how we act out our roles as teachers. **Robert Boice** brought the perspective of an ethologist to his many years of working with faculty. Applying the same sort of perspective as Tom Peters took in *In Search of Excellence*, Boice studied what made some faculty effective teachers and productive scholars. What made them tick? How did they approach their work? After years of research, he saw a broad pattern of elements which he calls "first-order principles" for college teaching. To me, they describe an almost spiritual path, a path of self-awareness and gentle self-control, of persistent action spurred not by rampant ambition or over-weening pride, but by strong, modest faith in the worth of teaching. It's the kind of outlook I've always wanted, but seldom have been able to hold for very long. Perhaps that's why I'm drawn to Boice's work. It's certainly not because the path seems quick or easy. It doesn't. It seems hard. But the data—and the teachings of most of the wisdom traditions—support it. Maybe it's time we listened and began to really succeed in what we're doing.

— James Rhem

how students interact with course material outside class. An electronic conference assignment between class meetings (particularly valuable with classes that meet infrequently) can ask students to make a posting one day, then respond to everyone else's postings the following day. Having students E-mail assignments a few hours before class not only assures that they are prepared, but that they have had a chance to let their ideas incubate before they arrive.

PowerPoint structures how material is presented in class. But does this structure assist learning or constrict course material to a narrow format (outlines)? It can present multimedia material well, but it does nothing to help you structure how your students interact with the material during the 98% of their lives that they aren't in your class.

Resource Requirements

Electronic Communication does not require great sophistication to use, and is generally available already to faculty and students (e.g., no additional costs to the institution).

PowerPoint requires expensive equipment in the classroom (computer and digital projection system), and it frequently doesn't work as expected.

Electronic communication allows my students to be actively engaged with the material outside class—it extends the classroom walls. It promotes active student learning because students must **do** something with the technology. If they don't, nothing happens. Electronic communication derives its advantages over traditional communication because it is *asynchronous* (time-independent) and *asynoptic* (place-independent). E-mail and electronic conferencing enhance active student learning simply by doing what they were designed to do—promote conversation. PowerPoint provides none of these powerful pedagogical advantages. There are a couple of forces operating that make PowerPoint a bad pedagogical tool since its use is likely to make the teacher-centered classroom even more predominant:

1. It gives the illusion of being a better mousetrap, and

2. the demand characteristics of PowerPoint induce bad teaching.

The Illusion of a Better Mousetrap

You may have noticed that several of my arguments against PowerPoint are the same as those frequently made against the predominance of

the lecture. PowerPoint exists to promote the lecture. Adding color, possibly motion and sound, and at least making one's points more attractive would seem to enhance a class. But does it? The problem with presentation graphics is inherent in the name—they're about presentation, not about learning. The name PowerPoint is likewise illuminating. It's designed so that the instructor can make his or her *point powerfully*. It also makes its *point* about who has *power* in the classroom.

PowerPoint was designed for people with something to sell. But are persuasion (what WordPerfect calls its presentation software) and education the same? When I was in high school in Southern California, your car defined you. The faster your car, the cooler you were. We had a saying, "If it don't go, chrome it." In other words, if it lacked the goods to perform, you could at least make it look good. PowerPoint lectures are like painting your Yugo candy-apple red and chroming it. It's still a Yugo. A chromed lecture is still a lecture, well-organized perhaps, stimulating hopefully, maybe even exciting to look at and listen to, but in the end it's fundamentally passive.

The insidious nature of *The Better Mousetrap* illusion becomes clear when one looks at how PowerPoint is generally used—in my experience, many professors view it as a way to get more content into their lectures. If you don't have to write it on the board, you can go through the material faster. It may help you "cover the material" better, but is learning enhanced? One advantage of the chalk board is it gives students a chance to synthesize what they've just heard.

Demand Characteristics

Using PowerPoint in the classroom doesn't necessarily make you a bad person. It does, however, mean that your emphasis is on the quality

of your presentation rather than your students' learning. Why is PowerPoint almost always going to lead to bad teaching? It's in the nature of the beast. Certain **demand characteristics** of our environment make it highly likely that we will behave in certain ways. The concept of demand characteristics comes from experimental psychology—the environment in which we find ourselves dictates, to a large extent, what we will do. Any software is an environment with subtle demand characteristics. What else can you do with presentation graphics other than make presentations? The environment of electronic communication, on the other hand, promotes two-way communication. I don't mean to imply that it can't be used poorly, but as an environment, the demand characteristics of electronic communication are more likely to promote good pedagogy than will those of PowerPoint. The character of individual pieces of software makes it highly likely that software will be used in a particular way. In the case of PowerPoint, that way will usually create a teacher-centered classroom. ■■■

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