

# Teaching with Technology

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This written section is an elaboration of my colloquium presentation. In this section I will talk about student heterogeneity, presentation software (PowerPoint), distance learning resources, and briefly, the Open Content movement.

## **I. Students Vary in Attitudes, Behaviors, Abilities and Gear**

The first thing I would point out is that students are not a homogeneous block; they differ in terms of their readiness (Parasuraman 2000) to deal with technology in and out of the classroom. Some instructors believe that students know more about technology than they do, but I would strongly suggest that you refrain from feeling inadequate. Student knowledge tends to be working knowledge and they lack context and intuition about how IT functions outside of their own lives. You may be able to use their familiarity however to boost their confidence to the point where they are willing to talk about their experiences and knowledge in class.

In addition to having different levels of readiness, different students prefer to communicate using different media. In my view, the key properties here are text vs. oral vs. visual, but also synchronous (telephone, messaging) vs. asynchronous (blog, email). Try to be responsive to a variety of media so as to engage everyone in your class.

Despite the fact that your university probably has a “recommended configuration,” the equipment that students bring to their learning experience will vary in age and in provenience (i. e. Apple vs. Windows, or Firefox vs. Internet Explorer). It is always a good idea to try to test your materials in as large a variety of user environments as possible.

And speaking of equipment variability, for live classroom activities, you should also test your materials in the exact place and circumstances of the live event. The fact that something works or looks good in your office is no guarantee that it will work in the classroom with a slightly different version of Windows, or a different display device, or a different subset of fonts, and so forth.

Finally I should add that accessibility to e-materials by students with various disabilities is prescribed by the Americans with Disabilities Act. If you have a disabled student, you should consult your local tech support folks on how best to support that student.

## **II. PowerPoint Particulars**

I have a hate-hate relationship with PowerPoint. OK, it is a like-hate relationship. I resisted PPT for a number of years. Finally, I too was assimilated. I now believe it is

worthwhile honing one's presentation software skills. My recommendations below, however, shy away from technical details and focus more on student-slide interaction aspects of presentations, and on your efficiency and efficacy. Find a decent book, or dig into the help function, or take a class on the presentation software of your choice. This software will be with us for a while, and it will be worth your while.

By the way, PPT is not the only game in town. The OpenOffice presentation software reads and writes PPT format and is available under an open source license, i. e. for free.

Here are my recommendations:

- Preparation of Slides
  - Keep the density of material per slide low: Five-seven lines max, seven or eight words per line. Summarize and cut until you can't stand it. Then cut some more.
  - Students should not be able to pass the test from reading your slides alone. Keep the minimum content that will remind you of what you need to say.
  - Graphs, figures and equations are ideal content items for slides. Emphasize items that are time-consuming (for both you and the student) to write or draw.
  - If you want to create a reference for students, use a Web page or paper, not slides.
  - Use content to keep the students' minds active, not gimmicks.
  - Light text and figures against a dark background, and sans serif fonts (for example Arial), work best for computer presentations.
  - Dark text and figures against a light background, and serif fonts (for example Times New Roman), work best for paper presentations.
  - Use a small number of high contrast colors. Subtleties of color don't come across most projection systems.
  - Be consistent with font faces, colors, sizes, capitalization, layout, headings. Develop style traditions for your electronic work. Think about creating a style sheet to help you remember how to format your slides.
  - Back up all electronic work on a second computer. Then back up the backup.
- The Presentation Itself
  - Have multiple access methods to get to your slides. Pick any two or three of the following: local campus network, flash drive, Yahoo! Briefcase, Gmail attachment.
  - Never ever ever read your slides. The second part of this rule is to never ever ever ever read your slides.
  - Did I mention not to read your slides?
  - Focus on the students, not the slides.
  - You should know what you are going to say after just a glance at each slide. You should not substitute denser slides for pre-lecture preparation. To put this another way, PPT should not take the place of preparation.
- The Immediate Post Presentation

- Take a few minutes after class to note exactly the slides you covered, your finishing point, and how long the lecture ran. Use this information the next time you use the same slide module.
- Jot down any thoughts that occurred to you while you were presenting such as mistakes on the slide, or ways to improve the slide, or where you needed to write on the board and could therefore use another slide.
- The Long Term View
  - Develop a slide library and learn to better reuse and recombine your slides
  - Use the Help facility to learn how to use the PowerPoint's master slide capability (View... Master), and how to modify the automatic colors (Format... Slide Design... Color Schemes). Avoid customizing the colors or any other aspect of format on any individual slide. The goal is to change all slides in a file with a single change to the master slide or the default color scheme. This will make reuse and recombination far easier.
  - Modularize your slide library. Create lecture-length, or shorter, modules. Each module should be its own file.
  - You might wish to create a spread sheet to help you keep track of each topic covered in each module. For each topic, include the number of slides and the approximate lecture time needed for the topic.
  - Name your slide files consistently to facilitate your search. I like to use names like: *nn\_content-title* where *nn* is the sequence number (with a leading zero for numbers less than 10) and *content-title* is the subject of the lecture. This way a consistent sorting order is maintained when I look at the files using Windows Explorer, or the files are put in a Web directory.
  - If you do quantitative courses, learn how to use the equation editor that comes with the suite of office products. A bonus here is that the same software works on word processing as well as slide processing

### III. Distance Learning Resources

I am not an expert in the vast arena that is known as “distance learning.” However, I have discovered a couple of sites that I thought were particularly thorough, and these are listed at the bottom of the following bulleted list. Here are those sites plus a few random observations:

- Distance learning techniques work awfully well for on-campus classes. By putting lectures online, you can use class time for interaction and cases
- Each medium/format requires a separate instructor skill
  - Chat: live chat is difficult to direct with more than a dozen students
  - Video or Audio: You cannot video or audio tape a normal lecture for use in distance learning – you need to create a script, then record the lecture in “studio mode”.
  - Web: reading speed and comprehension is approximately 25% lower (Nielsen 2000) on a computer screen as compared to paper. Put any text longer than a few paragraphs in printable format.

- Here are two good introductory sites on distance topics:
  - <http://vudat.msu.edu>
  - <https://courses.worldcampus.psu.edu/facdev101/student/>

#### **IV. Open Content Resources Available on the AMA Academic Resource Center**

For obvious reasons, IT professionals tend to be less customer focused or outward looking than marketers and are more worried than we are about protecting or defending systems and data. Many universities have adopted a “lock it down” mentality with respect to online instructional materials. Vertical applications like Blackboard, which is basically an administrator support platform with a few faculty tools tossed in as a design afterthought, hide materials from search engines.

This attitude strikes me as particularly problematic in the case of publicly funded institutions or even private universities that accept any public funds. Why should the taxpayers be denied the materials that their taxes have paid for?

It is also the case that researchers are uncovering more and more advantages to openness as a design principle in software and general product architecture (for a taste, take a peek at Pitt, Watson, Berthon, Wynn, and Zinkhan 2006; Verganti and Buganza 2005). In much of the world, we cherish the openness of our economic (capitalism) and political (democracy) systems. We certainly do not hide our research results from each other.

Networks create very interesting phenomena. Sharing of materials among colleagues creates synergies, externalities and positive feedback loops that I believe benefit individuals, and our field. Unfortunately, important university policy decisions like “conceal vs. reveal” are often left up to non-academic staff and administrators. I would hope that you might be willing to get involved in IT governance on your own campus, and to use that involvement to push for greater transparency and sharing in the academic part of the Internet.

Some resources on the Open Content movement are on the AMA Academic Resource Center (ARC):

<http://www.marketingpower.com/content28980.php>

#### **V. References**

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