

An Affordable Portable Electronic Whiteboard Alternative

Electronic white boards offer teachers and students a potentially helpful enhancement of the traditional chalkboard. In essence they are touch-sensitive boards of varying sizes that are connected to a digital projector and a computer. The computer screen image is projected onto the white board, which then becomes a large touch screen. Using direct touch or an electronic pen, the instructor can present computer based learning experiences.

The use of an electronic pen with a whiteboard allows the instructor or their students to digitally annotate lecture notes, software demonstrations, or PowerPoint™ lectures. The digital annotations, which will typically include comments by both instructor and students, can then be saved to a class web page and thereafter accessed by students at their convenience. Instructors can also use whiteboards much as they would a traditional chalk board; the distinction being that so called digital ink is used in place of chalk. Unlike lecture notes written in chalk that are gone once erased, the use of digital ink means that all notes and diagrams can be saved in electronic format for later retrieval, printing, or modification.

Potential benefits of interactive white boards cited by teachers and educational researchers include greater student engagement in lecture, increased student contributions to the learning process, and an enhanced ability of the instructor to design and implement more interactive teaching methods. Another major benefit would be the ability to create a web-based digital record of lecture notes available to students at their convenience. This feature is especially valuable to students who miss class for legitimate reasons as well as the busy instructor who can provide lecture notes to absent students.

Despite the aforementioned benefits of interactive white boards, they do not appear to be as widely available in college classrooms as computer projection equipment. Part of the reason may be cost. Depending on the size and features of the whiteboard, costs will likely range from about one thousand to several thousand dollars. An even greater limitation to wider availability and use, however, may be portability. Although portable units are available, many busy college instructors may be unable and unwilling to move whiteboards from one room to another or one building to another. In addition, significant class time may be required to hook up the system in the new location.

Tablet personal computers may provide a more portable, affordable, and convenient option for instructors who already have access to computer

projection equipment in their classroom. The tablet personal computer is a small portable computer with many features in common with the familiar laptop computer. However, like the electronic whiteboard, the tablet PC comes with a touch screen activated by an electronic pen. The electronic pen is used with the touch screen to activate software. In addition, it may be used much like a conventional pen to annotate lectures in word processing programs (e.g. Microsoft Word™) and presentation software (e.g. Microsoft PowerPoint™).

The tablet personal computer, aka tablet PC, when plugged into a computer projection system, becomes a portable interactive whiteboard substitute. The instructor merely has to open up word processing or presentation software that supports the use of the electronic pen and begin writing with the electronic pen as they would with a conventional pen or with chalk on a chalkboard. Text, diagrams, and even information from Internet sources can be placed on the screen and will be viewed by students on the classroom projection screen. The program file that is created can then be saved to a shared drive or to a class web site for later retrieval by students and faculty. Current prices for the tablet PC are as low as \$1400, and of course one tablet PC can be shared among a number of instructors. At the time of this article electronic whiteboards appear to range in price from about \$1000 to several thousand dollars.

Both authors of this teaching tip have had very positive experiences in using the tablet PC as a whiteboard substitute. The pen and software usually allow for an essentially infinite range of colors, and even various pen styles. This can add visual interest and emphasis to lecture material. The ability to integrate information from Internet science and news sources into lectures on the fly also adds interest and relevance to lecture presentations. Finally the ability to have an electronic record of lecture notes is invaluable. It provides 24/7 access to lecture notes to both students and faculty. While the tablet PC will not have every feature of high-end interactive white boards, it does provide a reasonable substitute for instructors who do not have access to interactive white board technology.

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Relax....a little, and then move on

Like many of those among us that have been fortunate to have some longevity in the teaching arena, I have had some time to reflect on items that

have both pleased and troubled me throughout my tenure as a faculty member. While a few of these reflections have appeared in this journal, others have appeared elsewhere or have yet to have been written down. My intent in subjecting readers to my ramblings is that I have some benevolent (probably naive) thought that someone might learn from my experiences, and have better encounters with their career than I have had with mine.

Does this mean that I have had some sort of a mediocre career? Not necessarily. However, I have always had a thought in the back of my mind that I was a lesser scientist if I was not successful in getting the next grant funded, if one of my scientific papers was rejected, or if someone spoke critically about my (overall) program. While I had resolved in my mind many years ago that I would never become a National Academy member, throughout the course of my career I wanted (and still want) to be a solid, contributing scientist and teacher.

Does one ever obtain a sense of accomplishment and/or security in the teaching profession? Does there exist some high school, college or university setting whereby one might be able to firmly state that they "can do no wrong." Probably not, especially if one constantly strives for new experiences and challenges to conquer. No matter where you might be, there will always be someone that does not "buy in" to your actions or approach.

In my own situation, whether at the university, college, or department level, I believe that administrators (e.g. those with power) have looked at me as a source of indirect income obtained from funded grants having to do with my research program. I really doubt whether any administrator has ever read anything that I have ever published with respect to my research, and certainly not any of my teaching-related papers. I have even been informed that one administrator looks upon faculty members (in general) as "...individual business persons. As long as each business has money to operate, everyone is happy."

What ever happened to academic freedom, whereby one might feel sufficiently secure to (perhaps) want to take a risk with a teaching/research project? Under the present situation, safe projects that are trendy, and something that funding agencies might want to fund, is (apparently) what we should all be focusing our attention on. How novel one's (research or teaching) program might be, under the present environment, is not as important as funds.

Being that I am in the last few months of my remaining (funded) grant for research, my main goal is to acquire additional funding. My teaching effort is sliding a bit, due to the stress of getting a grant funded. I am aware of what is happening. However, I have found with experience that it is OK to relax.....a bit, and then move on. If I do not get grant funding for a while, it will not be due to a lack of effort. Classes will still need to be taught, students advised and

committees to be served on. As long as I know that I am still trying hard.....guess what? I can live with that.

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Students May Need a Grounding in Agriculture as Much as in the Liberal Arts

Two related items about agriculture-one unsettling, the other hopeful-made news recently.

In the frightening-and-depressing category, The New York Times carried an article about the Arctic seed vault, which is built to withstand earthquakes and bomb blasts. It is meant to preserve seeds of all kinds, so that agriculture-the foundation of civilization-may have a second chance in the event of a worldwide catastrophe.

The second item was a short essay in the Fredericksburg Free Lance-Star by Joe Holmes, a student at George Mason University. Worried about global warming, peak oil, overpopulation, species extinction, and so on, Mr. Holmes has decided to soothe his anxiety by starting a backyard garden, as a lesson in basic agriculture. "I'm treating it like my practice run," he wrote. "I want to learn the ways of the soil now, while it is not yet necessary for my survival to do so."

The juxtaposition of the two items poses a question: Even if seeds survive climate change and mass extinction in a bombproof vault, will anyone remember how to cultivate them? It's a safe bet that many Americans have never set foot on a working farm and have no clue how farmers coax the most common vegetables out of the ground.

Before World War II, there were almost seven million farms in the United States. Today, according to government statistics, there are about 2.1 million farms, with 1.2 million people claiming farming as their principal occupation. The average age of those farmers is 55. About 74,000 farms, or 3.5 percent, accounted for more than 60 percent of the market value of agricultural products sold in 2002, the most recent farm-census figure available. Varieties of food have been lost for the sake of efficiency: Everyone has had a Red Delicious or a Granny Smith apple, but who has tried a Sierra Beauty, a Kidd's Orange Red, a Calville Blanc d'Hiver, or a King of Tompkins?

Cultivating Agricultural Skills

With the attention that colleges are paying to local foods and to sustainability, perhaps more institutions should offer basic lessons in agricultural skills, as a way to make students familiar with an important American industry, if not to make farmers out of them. Recently, scholars have worried that

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young people are disconnected from nature, so why not let students carve out a corner of the campus to start a small farm?

In fact, a number of colleges have already tried this. Warren Wilson College is particularly well known for its student-farm work. Goshen College's Merry Lea Environmental Learning Center runs an agroecology program meant to teach "the cultural and practical knowledge needed for a successful, post-fossil-fuel world," according to its Web site.

Indeed, teaching agriculture can mean teaching about the world. Modern agriculture touches on nearly all of the pressing environmental and social issues facing America today--water, energy, immigration, biodiversity, public health, rural poverty, suburban sprawl, climate change, and even religion and ethics.

Farm on the Range

At the request of students, Richard D. (Rik) Smith, an assistant professor of agroecology at the University of Wyoming, helped establish a small farm tended by young men and women in disciplines as diverse as agroecology, English, business, education, anthropology, zoology, and entomology. He says Laramie, Wyoming, is a challenging place to learn the rural arts, with a 90-day growing season, 11 inches of rain a year, and constant winds that blow away unprotected topsoil.

Nevertheless, last year the students sold just shy of \$1,000 worth of produce and are now planning a greenhouse and a composting program that will recycle waste from the university's food services.

Mr. Smith recently listed for *The Chronicle* the many things his students have learned in the process, like how to work within a university bureaucracy, write grant proposals, work in groups, plan a business, and market a product. "And, oh yeah, how to grow vegetables and all that entails, from soil fertility to pest management to planting and harvesting methods," he said.

As a society, we seem to cycle back to agricultural roots when anxieties about modern living bubble up. The last time environmental issues and oil prices became major public concerns, society saw a back-to-the-land movement, in which many people moved out to the country and fell flat on their faces, in part because they had forgotten (or, rather, never learned) the basic skills of agricultural living.

Colleges deliver basic skills of all kinds. Should agriculture be part of the mix?

Scott Carlson

<http://chronicle.com/daily/2008/03/2198n.htm>

Practical Ways to Measure Teaching Success

It seems that faculty members are expected to document teaching effectiveness at a much more

detailed manner than done previously--say ten years ago. Whether it is something that might be used in a budget cut selection process, a promotions package, an annual report to constituents assembled by the department chair/head, or simply a personal annual review document, we all need to be more effective at showing our teaching skills. In other words, while those with 100% teaching appointments may have learned long ago how to demonstrate their teaching propensity, other academic faculty with split appointments (teaching/research; teaching/extension) are especially prompted to learn how to document teaching abilities, above and beyond the old standby--student evaluations, which offer only limited evidence of quality/effectiveness of teaching.

In any given situation, teaching may involve something more than formal classroom activities. Politically correct terms like teaching/advising/learning, instruction, academic endeavors all are components of teaching. As such, and without stretching oneself, common daily activities should be considered under the teaching umbrella.

At the undergraduate level, there are many instances whereby you may be involved in a teaching-related activity, which could be documented in support of your teaching effectiveness. Do not downplay your advising activities, student successes in the laboratory, student placement in subsequent positions (veterinary school, job, alternative career pathway), or any casual impact that you may have had on a student's career pathway. Keep a listing of these types of activities (perhaps on small notes and thrown into a drawer), and summarize them from time to time. They do add up, and could show that you play a significant role in the overall success of the teaching program in your department.

At the graduate level, even if you have only had a few graduate students, it is important to document your student's successes. Not simply in the first job/position that the student assumed, but it is important to keep a dynamic record of your past graduates to document their progress over some timeframe. If a student develops a home page on the web--link it to your home page. Basically, advertise the progress of your students. Interestingly, I have done a bit of this and the students love it. Numerous other ways can be documented at the graduate level to show that you are, indeed, a quality teacher. Periodically check the citations to papers written by your past students through the use of Web of Science, Google Scholar, or Scopus. If their work received some attention in this manner, let people know about it.

On final (non-traditional) way in which you might demonstrate teaching effectiveness is through the publication of teaching-related papers. Sure, teaching in the classroom, advising students, and serving on teaching/advising-related committees are important components for any academic faculty member at WSU. However, writing of formal teach-

ing/advising/learning publications not only allows the opportunity for outside input to the faculty member, but also provides others a chance to obtain a potentially different viewpoint with respect to teaching--related items. Moreover, many of your research efforts may actually fall under this the teaching paper category. For example, properly constructed research papers can "teach scientists about science." Review papers are such examples. These types of papers advance knowledge, are usually highly cited, involve complex research issues, and help a number of scientists make research progress in important areas. Also, methods papers may fit into the teaching area, as these papers inform other scientists about analytical procedures, which might be conducted in a more efficient manner, thereby both saving time and increasing efficiency of the research conducted.

In this day (remember, expectations of 2007 are not the same as they were in 1997), if you do not do a bit of self-promoting with regards to your teaching efforts, who will do it for you? As the need for accurate teaching documentation has become more precise, we all need to think a bit "outside the box" in terms of our performance in the teaching arena. A number of our normal daily efforts may be used as practical ways to measure teaching success.

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“Advancing the scholarship of teaching and learning”

