Teaching and Learning in the Digital Age

“…they will be hearers of many things and will have learned nothing; they will appear to be omniscient and will generally know nothing; they will be tiresome company, having the show of wisdom without the reality.”

—— Socrates, on the use of writing as opposed to memory, in Phaedrus

Throughout history, each new advance in communication technology has brought innovative art forms, startling social arrangements, unanticipated consequences — and dire warnings about the value of what is being lost. It is a pattern of change that dates back to the advent of writing itself. The digital revolution is no exception to this tradition. Recent paradigm-changing innovations such as e-mail and the Internet, universal mobile telephony, text messaging and smart phones are profoundly reshaping how and when we work, communicate, and entertain ourselves. But they have also brought a sense of unease over how pervasive these new technologies have become in all aspects of our lives. A recent national New York Times telephone survey reported that 40 percent of Americans check their work e-mail after hours or on vacation; studies have shown that people consume three times as much information a day as they did in 1960.¹ They do this by the new — but now ubiquitous — skill of ‘multitasking.’ Computer users at work change windows or check e-mail or other programs nearly 37 times an hour. In the 21st century a universe of information is only a click away — and we can’t seem to stop looking.

Technology, and digital communication in particular, is not something one can opt out of. And while the image of a university student surrounded by books at a library carrel studying into the small hours of the morning has been supplanted by the image of a university student and her laptop at a library carrel studying into the small hours of the morning, the fact remains that today’s students (and faculty) face a new and daunting landscape replete with possibilities and distractions.

A Brave (and Virtual) New World

Anecdotal evidence suggests that there are real challenges to reaching “digital natives,” as texting and “Facebooking” in class have replaced doodling and staring out the window. [Indeed, it may not be fair to simply charge this generation of undergrads with this digital transgression; it’s a rare meeting these days that doesn’t feature at least one person furtively checking a BlackBerry or iPhone.] But student ease with technology in general — not to mention their facility with digital communication technology — has given rise to a concomitant move by the university to utilize students’ skills and channel them in ways that are mutually beneficial.

¹ “More Americans Sense a Downside to an Always Plugged-In Existence” by Marjorie Connelley, New York Times
June 6, 2010
This can take the form of the prosaic “clickers,” in-class voting technology that allows a lecturer to take attendance, give a pop quiz, or check in and receive real-time information about how well the class is comprehending the material.\(^2\) Or it can be something as wide-ranging as the Interactive Map Tool,\(^3\) software developed at Hopkins that supports “digital field assignments” — course activities in which students collect and analyze data from the field using digital technologies (cameras, audio recorders, etc). Originally designed for a general biology course, the technology has been adapted and used for coursework in the Humanities, with Museum Studies students documenting the historical art of Florence during the Renaissance (essentially curating their own exhibits of the city).

Audio podcasts, videos uploaded to YouTube, and class wiki spaces can provide everything from pre-lecture preparation and laboratory instruction to peer-led review sessions and collaborative problem solving assignments. Beyond the syllabus-driven model, Hopkins astronomers have gotten help from “citizen scientists”\(^4\) to sort and categorize galaxies, offering them much needed help sifting through data and providing enthusiasts a way to connect with the discipline that would not have been possible via any other medium.

The digital revolution is already affecting teaching and learning at Johns Hopkins, shaping our understanding of community and discourse, and it will continue to do so in the coming decades. The few examples listed above are significant not only for the ways in which they extend the reach of students and faculty but for how they ultimately connect people (and not just virtually) via the pursuit of knowledge. Still, the wired nature of our world can come with a cost. There is concern among some scholars about ‘heavy multitaskers’ and their ability to filter irrelevant information (a true peril of the Internet), as well as the effects of information overload on focus and cognition.\(^5\)

Looking Ahead

As America’s first research university, Johns Hopkins was founded on the idea that research is essential to the creation of knowledge. Digital communication technologies have the capacity to serve as both an enhancer and an impediment to our missions of teaching and research. Regardless of the medium, the core skills that have always been associated with a Hopkins education — critical thinking, analytical acumen, and creativity — remain the same. What should we, as a university community, do to ensure we continue to live up to Gilman’s vision of developing “scholars, strong, bright, useful, and true”?

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\(^2\) JHU was one of the first universities in the nation to adopt this technology, currently in use by more than 2,000 undergraduates in 19 courses this semester.

\(^3\) [http://www.cer.jhu.edu/maptool.html](http://www.cer.jhu.edu/maptool.html)
