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TEACHING AND LEARNING IN THE AGE OF DISTRACTIONS

AT A MEMORABLE DINNER FOR ALUMNI OF WILLIAMS COLLEGE, PRESIDENT GARFIELD defined the ideal university as “Mark Hopkins on one end of a log and a student on the other.” Hopkins was president of Williams—then, as now, one of our country’s foremost liberal arts colleges—from 1836 until 1872. He was convinced that the main effort of a college ought not be the transmission of knowledge, important though that is, but rather the stimulation of students to reach out for it on their own. His reputation for courteous, lively, wide-reaching and broadly based exchanges of views remains legendary in the history of American higher education. Hopkins considered a student to be educated when that student became his own professor.

I was drawn to Hopkins after a particularly trying end to my spring semester—I guess I needed reassurance. One student had visited my office to inquire precisely how many hours she needed to study to earn a passing grade in general oceanography. A fellow wondered if he could miss the last two weeks of class and reschedule his final

exam because he and his family had decided to take a last-minute vacation. The blue glow of text messaging lent a surreal atmosphere to my stem-winding (or so I thought) final lecture on the unsustainability of world economic growth and the ultimate threat that poses to oceanic and planetary health.

Back in the sanctuary of the departmental prep room, I joined my similarly agonized colleagues in wondering (yet again) where all this technology was heading. I’ve mandered on this dilemma before in these pages. Our students have attention spans of spider monkeys; ADHD seems contagious; things were not like this when *we* were undergraduates (no *sir!*). The concept of uniting the young and the old in the imaginative consideration of learning seems less doable than ever.

But then I came across a work by Steven Johnson.¹ Johnson makes the argument that because of our dedication to multimedia, not in spite of it, we are becoming more intelligent. He suggests that our students actually do more “cognitive work”—making snap decisions, working in three dimensions, coming up with long-term strategies in

role-playing video games, or mastering new virtual environments on the Internet—than ever before. About the race to the bottom seen in television programming, Johnson suggests, “...the content is less interesting than the cognitive work the [television] show elicits from your mind.”

I’m far from convinced.

I do know that it is essentially impossible to invite students to give me their undivided attention for time spans of an hour. My chief opponent in the battle for cognitive engagement is the ubiquitous cell telephone. Smart phones are endlessly seductive—my iPhone is a miracle of distraction, a banisher of “microboredom,” that unused 15-second span of time when one finds oneself momentarily without stimulus. (Ever notice that any lull in conversation—however slight—is punctuated by the flipping-open of cell telephones?) Even though I own the smartest of smart phones, I greatly prize the time I have to think quietly about an idea and follow it to a logical conclusion. Many of my students seem to have trouble doing that.

Maybe we can learn something from their habits (and Johnson’s

¹ Johnson, S. 2005. *Everything Bad is Good for You: How Today's Popular Culture Is Actually Making Us Smarter*. Riverhead/Penguin, 256 pp.

HANDS-ON OCEANOGRAPHY

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suggestions), and turn a few of those attributes into ways to augment our own teaching techniques.

We could, for example, move our handouts from print to electronic form. We can include the color and images we have hesitated to add because of cost and length. To satisfy their love of text messaging, we might choose to mandate at least one content-related question from each student each day. These could be automatically accumulated, linked to the sender, and then posted. The most interesting and relevant questions will be answered on the course's blog. And yes, there *would* be a course blog. It would be updated two or three times a day and

setups for inclusion in reports, search instantly for information on the Web, and network with experts and peers in real time. They exemplify what Johnson has in mind. But for the next tiers down, the students who are marginally engaged, cell phone use is antiproduative. If you are going to play a game on your telephone, why come to lectures at all?

So, what's the point? The genie is out of the bottle—we are never going to block access to irrelevant data in public surroundings. To invoke simple courtesy toward one's peers has not worked. We must find ways to join them and blend our educational abilities with their information processing skills.

Hands-On Oceanography provides an opportunity for you to publish teaching materials developed for undergraduate and/or graduate classes in oceanography. Activities include, but are not limited to, computer-based models and laboratory demonstrations that actively engage students (i.e., activities where students have to make decisions, record results, and interpret results). All submissions are peer reviewed. Publication of teaching materials may address the broader impacts criterion for NSF-funded research.

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“ TO DO TWO THINGS AT ONCE IS TO DO NEITHER. ”

– Publilius Syrus, Roman slave, first century BCE

include ephemeral quiz questions (if the students don't check in often, they might miss one), activities of interest in the real oceanographic world, and course announcements.

My best students right now are the finest I've had in 41 years of college professoring. They use their electronic sidekicks to photograph experimental

Me? I'm a dinosaur—I won't be able to give up my yearning for a quiet and contemplative few minutes in which to explain a concept to an engaged student. I'm still looking for the Hopkins log. 📷

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