

## **Integrating Online Security into the Undergraduate Curriculum**

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**Abstract:** The field of eLearning benefits from, but is also challenged by, rapidly changing technology and the online habits of students. As students become more active in online communities, they may encounter substantial risks to their privacy, security, and ultimately to their futures. Institutions can also suffer tarnished images based on the online activities of students. Online security must be incorporated into the modern higher education curriculum to protect both students and institutions. By teaching online security across the curriculum, students can be protected and prepared for their professional lives.

### **Introduction**

Advances in technology have undeniably changed higher education. Some changes are clear to see inside the classroom: digital projectors and PowerPoint presentations, the use of a Learning Management System (LMS) for document and information distribution, and online discussion forums that carry into the classroom. Other changes are not so visible, but still very real: online sources for student research, study group meetings organized via Facebook, and students divert themselves in class by texting with their cell phones instead of working on the crossword in the campus paper. These changes and others have altered faculty practices and student expectations.

Such changes, however, may have impacts that reach far beyond the classroom. The rise of ubiquitous computing and social networking has placed unprepared undergraduate students in serious jeopardy. Identity theft is rampant, employers are making hiring, promotion, and termination decisions based on online content, and at the most basic level, simple embarrassment can result from unwise social networking. Institutions of higher education have long considered it their responsibility to prepare students to graduate as logical, thinking, contributing members of society, whatever their chosen field of study. In today's environment that burden has been expanded to include preparing students to live and work safely in an electronic environment.

### **The Importance of Online Security**

Social networking brings many benefits to students and others, and it has even found a place in the eLearning environment with Facebook and other applications being successfully integrated into the electronic classroom. These benefits, however, can be quickly eclipsed by the dangers waiting for users' foolish mistakes. Recent history provides many telling examples of just what can go wrong with such technology.

The same week that this paper was being written, a Canadian woman suffering from depression was overtaken by legal problems because of Facebook. The woman was on paid disability leave from work because of her depression. Upon orders from her physician she was making an effort to have fun by going out with friends and taking a vacation to a beach resort. She posted pictures of these activities to Facebook to share with friends. Upon seeing the pictures, her employer declared that she was not actually depressed because she was out having fun and terminated her disability benefits (Beretsky, 2009). At the time of this writing, the court battles are just beginning to ensue, but the smoking gun for the company's allegations is a Facebook profile.

In 2008 two staffers from Barack Obama's presidential campaign made national news for a picture on one of their Facebook profiles of the two of them feeding a beer to and fondling a life-size cardboard cutout of primary opponent Hilary Clinton (Kamen, 2008). In 2009 the head of Great Britain's spy agency, MI6, had pictures, his home address, and other security-threatening items exposed to the world on Facebook through his wife's account (Hemming, 2009). A quick search on YouTube of the authors' own institution quickly reveals videos of students vandalizing their dormitory and playing guitar naked in the middle of the hallway - one video with 907 views and the other with 610. The star of one video was one author's former advisee.

More seriously stalking and malicious attacks through social networking software are entirely possible. Researchers have investigated and published how relatively simple it is to use automated identity theft attacks against such networks (Bilge, Strufe, Balzarotti, & Kirida, 2009) and ways in which data can be extracted from social networks to compromise user privacy (Bonneau, Anderson, & Danezis, 2009). Thus, the potential impact of unsecure social networking practices goes far beyond embarrassment or career damage and can reach as far as credit damage or even total financial ruin.

This evidence, some of which is amusing and some of which is simply disturbing, is presented with a purpose. People everywhere are putting inappropriate things online, and people everywhere are suffering for such mistakes. Not everyone who makes an ill-advised post to Facebook, YouTube, Twitter, or MySpace suffers the consequences - many do not - but the consequences that some experience are real and can be quite serious. Content that students post online during college could haunt them in later life as they pursue professional positions or even political office (Govani & Pashley, 2005).

Today's college-aged students, mostly members of what is commonly called Generation Y, are distinctly different from the Generation X and Baby Boom generations who are currently managers in the corporate world and faculty members in colleges (Gurchiek, 2009). Unfortunately, studies show that even when students are concerned about their information privacy on sites like Facebook, that concern does not influence their behavior (Fogel & Nehmad, 2009). As teachers, faculty members have an obligation to give such students information about where the threats are and how to protect themselves.

## **Changes for Teachers and Teaching**

The social network openness of Gen Y students is the catalyst for changes not only in the teaching environment but also for teachers themselves. Students' comfort with networking, with the online exchange of information, and with their feelings about appropriate attire and topics of conversation are all impacting how education works. To maintain the educational environment individual instructors and institutions as a whole have to address such issues.

In any class, in any subject, and in any course of study, a teacher must provide students with the foundational knowledge from which to function. Increasingly this is true for social issues as well as professional ones, although the lines between the two are becoming increasingly blurry. Social networking activity by students can impact their professional lives, and, conversely, their professional lives can drive their choices in social networking.

Students today are comfortable with, and increasingly expect, much more contact and familiarity with their professors than past generations. In one study two-thirds of students who were surveyed said that it was acceptable for faculty to be on Facebook (Fogel & Nehmad, 2009). This can be a great benefit to the educational environment, but it can also create difficult issues. Should professors friend their students on Facebook? If professors are on Facebook, should they act on information they discover via a friended student's Facebook status or profile? What should a professor do when a particularly comfortable student submits an assignment that includes pictures of the student in revealing swimwear?

All of these are questions that confront today's higher education faculty. The challenge to and responsibility of faculty are clear: They must conduct themselves appropriately and also properly educate their students. This education does not have to be limited to college computer labs or courses centered on technology. Online security can be integrated across the curriculum.

## **Integrating Online Security**

Higher education has seen and continues to see success with initiatives that integrate course content across the curriculum. Writing across the curriculum is one common application (Todd & Hudson, 2008). In order to capitalize on the same tactic, faculty members should identify opportunities in different disciplines to present online security issues.

Many institutions start new students out with an introductory course intended to teach freshmen how to succeed in college. Study habits, budgeting, and personal security with regard to substance use and relationships are all common topics in such courses. These classes would also be an excellent opportunity to introduce students to information security topics.

Information systems and technology courses within various academic departments also present the opportunity to infuse social networking security and risks into a curriculum. Doing this, even as a part of information technology classes dedicated to teaching security, will drive a level of professionalism and responsibility within the profession that is often tasked with organizational security planning and training for online issues and applications. It will support social network awareness in future information technology professionals being trained in such programs.

There are opportunities across multiple disciplines to discuss the importance of information security beyond introductory and computer-centric college classes. Political science courses could illustrate the importance of security by highlighting events that damaged politicians. Art classes could take the opportunity to discuss proper use and dispersion of media. Literature classes could address issues of free speech contrasted with responsibility and accountability, and then relate the lesson to individual online activities. Each discipline would be different, but almost every discipline could find an appropriate time to add such content.

Working across the curriculum will expose students to multiple perspectives of the very important issue of online security and will also provide them with reminders by presenting the topic in different semesters. This will also help to ensure that students of all disciplines, not just those specializing in technology-centric subjects, will have the benefit of training.

## **Conclusion**

The long-term impacts of students' online activities are yet to be seen. The technology has not existed for long enough to provide longitudinal data on what happens to students ten and fifteen years past graduation. Evidence is mounting, however, that employers and others are using this technology as a tool to monitor and evaluate employees and job candidates. As with all new knowledge, one of the key factors in helping students succeed will be to expose them to the information. As a minimum the institution could develop online training modules for personal security issues and include that link on all course syllabi. Integrating online security across the curriculum can be a key component of such an effort.

## **References**

- Beretsky, S. (2009). Woman Loses Sick-Leave Benefits for Depression Thanks to Facebook. Retrieved 11/24/09 from:  
<http://psychcentral.com/blog/archives/2009/11/20/woman-loses-sick-leave-benefits-for-depression-thanks-to-facebook-pics/>
- Bilge, L., Strufe, T., Balzarotti, D. and Kirda, E. (2009). All your contacts are belong to us: automated identity theft attacks on social networks. In WWW '09: Proceedings of the 18th International Conference on World Wide Web. pp. 551-560. New York, NY, USA.

- Bonneau, J., Anderson, J., and Danezis, G. (2009). Prying Data out of a Social Network. In *ASONAM 2009: Advances in Social Networks Analysis and Mining*.
- Fogel, J. and Nehmad, E. (2009). Internet social network communities: Risk taking, trust, and privacy concerns. *Computers in Human Behavior*. 29. pp. 153-160
- Govani, T. and Pashley, H. (2005). Student Awareness of the Privacy Implications When Using Facebook. Privacy Policy, Law, and Technology Course, Carnegie Mellon University. Retrieved 12/3/09 from:  
<http://lorrie.cranor.org/courses/fa05/tubzhlp.pdf>
- Gurchiek, K. (2009). Gen Y Poses Unique Management Challenges. Society for Human Resource Management. Retrieved 11/24/09 from:  
<http://www.shrm.org/hrdisciplines/employeerelations/articles/Pages/GenYChallenges.aspx>
- Hemming, J. (2009). British spy chief's cover blown on Facebook. Reuters. Retrieved 11/24/09 from:  
<http://www.reuters.com/article/internetNews/idUSTRE56403820090705>
- Kamen, A. (2008). One More Question. The Washington Post. Dec. 4, 2008. Retrieved 11/24/09 from:  
[http://voices.washingtonpost.com/44/2008/12/04/one\\_more\\_question.html](http://voices.washingtonpost.com/44/2008/12/04/one_more_question.html)
- Todd, V. and Hudson, J. (2008). Using Student Opinions Regarding Traditional vs. Writing Across the Curriculum Teaching Techniques: A Qualitative Pilot Study. *College Teaching Methods & Styles Journal*. 4(1). pp. 19-24.