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CUNY's Critical Thinking Skills Initiative: Redesigning workforce education through information literacy learning

Irene Gashurov
CUNY Central

Ann Matsuuchi
CUNY LaGuardia Community College

Irene Gashurov and Ann Matsuuchi

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In the wake of the recent financial upheaval, there is a feeling in academia that colleges should pay more attention to what employers are saying; and the common concern of employers is that many new hires are coming out of college unprepared.

In job situations that demand approaching problems from a variety of perspectives, using innovative approaches to find solutions, and communicating effectively, employers said these recent graduates were coming up short. They called on educators "to teach [students] the analytical skills, the critical thinking skills and the communication skills that are necessary for almost every job in today's economy."[1]

Lesson plan: Critical Thinking Skills Initiative (CTSI)

Curtis Kendrick, university dean for libraries and information resources at the City University of New York (CUNY), knew that a library program had the potential to meet the changing needs of businesses and to teach these skills quickly and efficiently. Like many librarians, he long observed, anecdotally, how information literacy—a complex set of skills that involves the ability to use technology to find, evaluate, contextualize, and communicate information effectively—improved student success, particularly at the beginning of their undergraduate careers. But it was not until he read a study that assessed the impact of information literacy on the academic performance of community college students over time that he had

evidence of its effectiveness. Information literacy has now undeniably been shown to raise students' GPA scores and graduation rates.[2] Information literacy instruction could also be effective in preparing students for professional success in the workplace. By learning to frame questions to conduct online research, to evaluate the reliability of sources in the digital landscape, and to understand a problem from different perspectives, students could acquire the underlying critical thinking skills that are shared by many professions.

Taking action

In 2011, CUNY won a major grant from the Verizon Foundation to pilot the CTSI, an information literacy program that would introduce a model of pedagogical innovation for professional success. The program would be launched at a select number of CUNY's community colleges, where many students enter academically underprepared, offering two unique courses of online instruction in information literacy. To evaluate their progress, students would be required to take the Educational Testing Service's (ETS) iSkills assessment test before and after the course. As an incentive, students would receive free

Irene Gashurov is communication writer with the CUNY Office of Library Services, e-mail: Irene.Gashurov@mail.cuny.edu, and Ann Matsuuchi is instructional technology/systems librarian at LaGuardia Community College, e-mail: amatsuuchi@lagcc.cuny.edu

netbooks, which they could keep if they successfully completed the program.

The pilot

In the fall of 2011, a cohort of 59 students from LaGuardia, Hostos, and Kingsborough community colleges enrolled in two online courses, one at LaGuardia Community College and the other in the CUNY School of Professional Studies (SPS). In the three-credit online SPS communications course, "Digital Information in the Contemporary World," taught by Professor Kate Moss, students were introduced to critical thinking skills by learning to differentiate and evaluate the authority of different types of online sources, and to apply principles of academic integrity in the use of visual, textual, and multimedia information. Students also explored the impact of communications technologies on identity and community in readings ranging from book excerpts on copyright to peer-reviewed journal articles on digital literacy. "Students need a lot of focus on how to critically evaluate information sources," Moss noted. "They also need a lot of guidance and practice in learning how to use information appropriately."

LaGuardia Community College offered a one-credit, liberal arts elective course called "Internet Research Strategies" (LRC 103). For the CTSI pilot, its two sections were merged into an asynchronous online "super class," team-taught by library faculty—Steven Ovadia and Ann Matsuuchi—to facilitate student interaction and effective instructor responsiveness.

Course content

Over the years LRC 103 reflected the many changes in the information landscape. In its current version, the course teaches the skills for today's workplace that are usually addressed only in passing in the undergraduate curriculum. The course went beyond the traditional information literacy curriculum to introduce students to such complex topics as how politics are involved in the construction, dissemination, and policing of

information. Each class facilitated different modes of learning by providing readings and videos, with assignments and forum discussions. Learning was further reinforced with Google forms that guided students' thought processes with leading questions in their evaluation of each source. Using this format enabled instructors to easily collect student responses and follow the path of their mastery of new concepts. The online medium had the added benefit of teaching students to effectively communicate online and become conversant with the terms and concepts of online culture—the skills of digital literacy.

Since an emphasis of the course was to demonstrate information's increasing complexity, the instructors created lessons that showed how traditional channels of publication are no longer a guarantee of reliability and that students should not base their evaluative decisions on media or format alone. For their first lesson students were shown library-created videos and given handouts on different types of information sources: scholarly vs. popular, commercial vs. nonprofit. The second lesson had them read a blog by Google's Matt Cutts about search engine spam and a *Wired Magazine* article about Demand Media, a content mill that maximizes search engine retrieval. By teaching students to evaluate potentially confusing examples of online content, the lessons introduced an advanced critical thinking skills dimension to information literacy learning.

Assignments reinforced students' emerging skill for detecting "real" articles from the spurious ones. The first assignment had students evaluate different types of free articles on the topic of sports drinks: a newspaper blog posting, a content farm article, a Wikipedia entry, and articles from a commercial R&D site. In another assignment, students analyzed three different sites providing consumer product information and wrote a short essay about the merits or reliability of each. They posted their observations in the discussion forum, which enabled them to share their perspectives on the week's

topic. Students were frequently frank and unguarded in their comments; for example, in their discussion of fraudulent Web sites they warned each other how to avoid being duped by commercial sites.

The sequence of weekly topics referred back to previous lessons, letting students implement what they had learned. On the lesson covering journalism, they were asked to discuss how news is primarily delivered and consumed online, and to assess different kinds of blogs. Other topics included copyright and intellectual property, e-books and the changes to the traditional publishing model, and evaluating user-generated content sites like Wikipedia.

Course platform

Conducting this online "super class" required additional planning in setting up a course platform that was both usable and engaging. The instructors had a less-than-ideal experience with Blackboard, the learning management system used at CUNY, which they found unsuitable because of the design of the discussion forum and lack of mobile-friendly features. Instead, they chose Ning, a commercial private social networking site they had used with some success in previous online classes. Ning had the advantage of providing educational accounts with limited functionality, and its interactivity and design features were familiar to students accustomed to Facebook, Twitter, and YouTube.

The instructors found that building pages on Ning was easily customizable and integrated with other Web tools and resources. They used screencasting tools to create ad hoc videos, which they uploaded on YouTube or Archive.org, and embedded in the lesson page. They created an introductory syllabus overview, covering how the online class works and outlining instructors' expectations—and made it required viewing.

Ning's customizable features helped to personalize online learning. Options allowing students to select a preferred gender pronoun or specify proficiency in languages other than English made the online space amenable to a diverse student population. Non-native English speakers and students with disabilities could make whatever adjustments they needed, such as choosing video captioning and transcripts of lessons. Real-time online chat windows, embedded into the class homepage, provided additional assistance. Such options as uploading photos to student profiles and posting comments enhanced a sense of a student community.

Online courses are not for everyone. Outside of weekly deadlines, the course is self-paced. The online format requires that students do more than show up to class. In exchange for greater responsibility, however, they enjoy greater control over their time. The online format also has the potential of providing equal access to a diverse student body—and giving instructors additional class time to do more creative and customized teaching.

A foundation for success

In the end, students in the CTSI program learned skills that can be adapted to businesses, or any organization that depends on information accessible on the Internet. "If students can think critically about online research in an academic setting, they can transfer these skills easily to the workplace," said Matsuuchi. Before instructors can impart these skills to students, they must first convince them that they don't know everything about the Internet. "At first students take for granted that anything they find is accurate," said Ovadia. "In the end they say they wished to have these skills at the beginning of their careers."

Survey feedback from students was positive. "I wish I would have known half of the information I know now," said one student. "I hope you guys keep this great class," another said. Another student said that the skills he acquired from blogging on a topic of interest—which requires the ability to find, use, quote, link to, and reference sources—had an application in the workplace.

Other success indicators include improved performance on the ETS iSkills

assessment test. The project generated 100 percent participation rate for homework and discussion, and students received grades that far exceeded similar courses in the past. All students met the program requirements and got to keep the netbook. "There was a screening procedure when students were informed about the amount of work involved and about the promise of the netbook ownership, which contributed to the overwhelming success of the program," said Barbara Carrel, special projects librarian who managed the program. Matsuuchi is optimistic about the program's future. "I don't think I have given out as many A's before," she said.

Workforce readiness seminar

With the pilot concluded, CUNY's Office of Library Services held a Workplace Readiness seminar in April 2012 to address the issue of job preparedness, bringing together library faculty and job counselors to hear employers from various industries identify the skills and mindset they prize in graduates.

Jeffrey Holmes, senior principal of the Woods Bagot architectural firm, said that he hoped educators would rethink how they might prepare graduates by placing a greater emphasis on campus learning spaces that foster critical thinking, problem-solving, and collaboration.

Kate Wittenberg, managing director at Portico, a digital preservation service, said that since today's workplace is information-driven, employees must be able to navigate, filter, summarize, and communicate information.

Brendan Molloy, director of recruiting for the accounting firm KPMG, spoke about team work, which implies approaching group projects with the know-how to find solutions, adapt to change, and understand different perspectives—a higher order of critical thinking skills.

Marisol Hernandez, senior librarian at the Memorial Sloan-Kettering Cancer Center, said that in a field where life or death decisions are often tied to accessing the right information quickly, nursing students complete their education without learning how to conduct information searches. "Some are making their first contact with online resources," she said.

In conclusion, Kendrick noted that, "Librarians know that information literacy skills can be valuable in the marketplace, and now we see that employers understand their value as well."

Notes

1. Marisa Taylor, "Schools, Businesses Focus on Critical Thinking," *The Wall Street Journal,* 12 September 2010.

2. Miriam Laskin and Lucinda Zoe, "Information Literacy and Institutional Effectiveness: A Longitudinal Analysis of Performance Indicators of Student Success. A Longitudinal Assessment," unpublished manuscript, Hostos Community College, New York, 2009. ⬿