

Teaching Social Statistics Online

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The perils and promises of online learning have been prominent themes in recent discussions of ongoing change in higher education. On the one hand, new forms of communication offer new ways to lead students through an engaging learning process (Clark-Ibanez & Scott 2008). A recent meta-analysis has shown that online learning is at least as effective as face-to-face learning, in part because it can enhance time-on-task and intensive participation (Means et al 2009). On the other, the social distance that many intuitively associate with online communications raises concerns about institutional pressures that could lead to watered-down instruction and an even more marginalized position of faculty in higher education. Feeling both these enthusiasms and concerns, I was eager to explore online teaching for myself.

In spring 2010, I taught undergraduate social statistics online; my first foray into online instruction. My experience revealed some of the opportunities and limits of the online environment, but, overall, my experience increased my enthusiasm for online education.

Why social statistics?

Statistics may seem like a poor candidate for online learning, given that it is a high-stakes course and, for many, a high-stress one as well. At Brockport, our social statistics course serves our own majors as well those from criminal justice, social work, and nursing. For the latter two, students must pass statistics before applying to the major. The pressure of a required course and the anxiety that many bring to statistics is compounded in those older students who balance college with work and family obligations. Those students are over-represented in both the sociology major and these allied professional majors and perhaps stand to benefit the most from regular face-to-face contact.

However, I found statistics to

be a good choice to offer online. For one, expanding scheduling options for such a widely required course can help busy students make faster progress through a degree program. Second, it is especially amenable to individual pacing. Like many instructors, I give students in-class practice exercises for each new procedure. Invariably in my face-to-face class, a few students are quickly finished and bored, a large middle group finishes en masse soon after, and a couple students take much longer. I am often forced to move on before the slowest two or three students can complete the entire exercise. An online mode, in contrast, enables all students to complete exercises at exactly their own pace.

How did these students learn statistics online?

Developing the online course entailed translating resources I developed for face-to-face instruction. In both environments, students learn through these steps:

1. Read chapters in the course textbook (Frankfort Nachmias & Leon Guerrero, 2009).
2. Review a Powerpoint presentation with embedded audio narration.
3. Complete ungraded practice exercises as prompted by the Powerpoint presentation.
4. Complete graded lab homework assignments combining conceptual questions with problems.
5. Complete online practice exams.
6. Complete online graded exams.

In both courses, students complete the first four steps in each of the 10 learning modules that are made up of one reading assignment (one or two chapters), one narrated Powerpoint presentation, between two and five ungraded exercises, and one graded lab. Students take three exams, each addressing material from three or four modules.

Obviously, this approach entails a tremendous amount of prepared material. For the online course, I drew on Powerpoint presentations, exercises, labs, and collections of exam questions and problems I had developed in teaching prior

face-to-face sections. Nevertheless, translating paper resources into interactive online assessments and recording audio narrations for Powerpoint took a lot of time.

Academic Integrity

Teaching online confronts instructors with some novel issues of academic integrity, especially in courses where students often demonstrate their knowledge through closed-ended exams and lab questions. Proponents of online education are quick to point out that the relative opacity of the online environment (who is really taking this exam?) is no different than large classes (who is really taking this exam?) or any take-home work (who really wrote this paper?). All the same, some cannot shake the feeling that an online environment might make cheating more rampant.

For this class, I preempted some concerns by making the exams explicitly open-book. I initially saw this decision as a sub-optimal compromise, but it turned out to be a positive move. For one, it nudged me to develop questions and problems that directly engage conceptual understanding and quantitative reasoning, which, in turn, prompted me to revise instructional materials to better prepare students for these challenges. Because the exams were timed, students still had to prepare in advance to succeed. I was pleasantly surprised to learn that exam performance for my online students was fully in line with prior face-to-face classes. The open-book strategy certainly does not resolve all integrity issues, but it invokes one oft-repeated claim that teaching online prompts educators to productively rethink their basic pedagogy.



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Professor or Instructional Designer?

Many how-to articles about online teaching emphasize the importance of the instructor's visible, consistent presence (for example, Pelz, 2004). Thus, I focused on being more than the instructional designer. I frequently reminded students in both audio and writing that they should not hesitate to contact me, their professor, at any time. More generally, narrating the Powerpoint slides with my own voice also helped create a sense of human presence. Other online instructors I know use podcasts and short videos to achieve the same goal.

What's next?

My first foray was a success. Grades and attrition were surprisingly similar to that of face-to-face students, and student reviews were positive. I am eager to offer online statistics again in order to refine my materials and approach. When I do, I plan to record narrations with higher audio quality and convert the Powerpoint presentations to formats that require less internet bandwidth such as Flash. Also, I plan to script the audio narrations in advance (something I did not do this time) because I could then build the text into the presentation, making these resources richer as well as immediately accessible to

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Non-Academic Careers

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ing guidelines for evaluating public sociology as a scholarly enterprise; and proposing incentives and rewards for doing public sociology. The Task Force report was accepted by Council in 2007 and placed on the ASA website. Council did not endorse its recommendations

In 2007, the ASA Research and Development Department presented the results of “Beyond the Ivory Tower”—a survey of 600 PhD sociologists employed outside the academy who answered questions about their job characteristics, their use of sociological concepts and skills on the job, what they wished they had learned in graduate school, and their job satisfaction (<http://www.asanet.org/images/research/docs/ppt/ASA%20Beyond%20Ivory%20Tower%20Slideshow.PPT>). Also in 2007, a new joint section, the Sociological Practice and Public Sociology (<http://www.socprac-pubsub.net/>) was formed to support “enhancing the professional image of

sociological practitioners, expanding opportunities for the practical application of sociological principles and techniques, and furthering the production and critique of sociological knowledge by providing a dialogue among sociologists practicing in a wide variety of academic and non-academic settings.” A workshop on non-academic jobs was held at the 2010 Annual Meeting by the ASA Academic and Professional Affairs Program—which was by no means the first such informational workshop.

NSF Career Data

Despite activities such as these, the latest data from the National Science Foundation’s (NSF) Survey of Earned Doctorates do not suggest that new sociology PhDs are moving beyond the academic sector. The accompanying table shows the employment sector of new sociology PhDs who had secured a job commitment at the time of the surveys in 1989 and 2009. In 1989, nearly four out of five new sociology PhDs (78.8%) expected to work in academic positions. Twenty

years later the proportion was virtually unchanged. While there was an increase over the last two decades in the percentage of new doctorates in all social science fields who expected to become academics, sociology PhDs remained 20 percent more likely to expect to do so than other social scientists. (This gap would be wider if sociologists weren’t also included in the count of all social scientists.)

The industry and business sector is the next largest area where new social science PhDs expected to work at both points in time (17.0% and 14.9%); but less the case for sociologists (3.3% and 6.4%). While the percentage in industry remains small, it did double over two decades. The proportion of sociologists expecting employment in non-profits remained stable over this period (7.6 % and 8.1%), while decreasing for other social science fields, and the proportion of sociologists who expected government employment decreased (13.6% and 7.2%).

Overall, these data suggest that early-career sociologists have not expanded their professional purview to other sectors of the economy, despite the erosion of tenure-track positions, especially at public colleges and universities (<http://www.insidehighered.com/news/2009/05/12/workforce>). ASA Executive Officer Sally T. Hillsman called for “disciplinary self reflection” in her November

2010 *Footnotes* column. According to Hillsman, sociologists need to understand that the “growing social challenges” require that professional sociologists, “trained under the most rigorous academic standards” build on the discipline’s history of social practice and do sociology in a wider variety of settings. She further suggested that sociology faculty should not “undervalue” the work of non-academic sociologists or the applied work of their academic colleagues, but rather make a place for them with the wide scope of the discipline. One PhD sociologist employed in the federal government who responded to the ASA Research Department survey said:

“The discipline needs to reduce snobbery and acknowledge that careers outside the academy are not only personally fulfilling, but are crucial to the development of the field.”

To continue providing information about alternative sociological careers to current sociology graduate students, who may be unable to get sufficient information in the academy, the ASA Research and Development Department will distribute a second “Beyond the Ivory Tower” survey. It will start with a DC focus group in the spring of 2011 to discuss what issues and questions should be in the subsequent questionnaire. ASA members are also encouraged to send suggestions to research@asanet.org.

TABLE 1. Employment sector of doctorate recipients with definite post-graduation U.S. employment commitments, by field of study, in 1989 & in 2009

Employment commitments and sector	Total	Social Sciences ^a	Sociology
Academe			
1989	51.3	49.4	78.8
2009	51.7	62.5	81.1
Government			
1989	10.1	14.3	9.2
2009	6.8	10.0	3.7
Industry/business^c			
1989	21.1	17.0	3.3
2009	25.6	14.9	6.4
Nonprofit			
1989	6.8	13.6	7.6
2009	4.8	7.2	8.1
Other/unknown^d			
1989	10.6	5.6	1.1
2009	11.2	5.4	0.7

^a Includes psychology.
^b Percentages are based on number reporting definite employment commitments in the United States.
^c Includes doctorate recipients who indicated self-employment.
^d “Other” is mainly composed of elementary and secondary schools.
 NOTE: Due to rounding, the sum of percentages may not equal to 100.
 SOURCE: NSF/NIH/USED/USDA/NEH/NASA, 2009 Survey of Earned Doctorates.

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the hearing-impaired.

I also look forward to developing an online course that centers on creating a robust learning community. An elective like the Sociology of Food, for example, would look entirely different from statistics, relying heavily on student-to-student interaction and prompting the kind of intensive participation that we all wish to see in our face-to-face classrooms. There are certainly opportunities to harness the power of learning communities for my statistics students as well. Overall, this experience reinforced the principle that teaching is a craft constantly refined; exploring these

online possibilities has re-energized the practice of my craft in face-to-face courses as well.

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