Digital Initiatives

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ANN PORTEUS AND CANDACE THILLE INCORPORATE OPEN LEARNING INITIATIVE (OLI) COURSEWARE IN EDUC 200A

Senior Lecturer Ann Porteus has been teaching Introduction to Data Analysis and Interpretation (EDUC 200A) for 15 years. The popular course draws Master's Degree students interested in domestic and international education policy and leadership, and teaches them to become 'critical consumers' of research by focusing on reading literature and interpreting descriptive and inferential statistics commonly found in education research studies.

In 2012, Porteus attended a presentation by Candace Thille on the Open Learning Initiative's innovative and scientifically-based online courseware, which is offered on an adaptive instructional platform and is available openly and freely for educators, academic institutions, and individual learners. During the presentation, Thille discussed the Statistical Reasoning courseware that she helped develop for OLI. "She kept describing the statistics courseware as being 'more for consumers and more conceptual,'" says Porteus. "That rang a big bell with me because that's exactly what I'm doing in 200A. I got excited

about that." At that time, Thille was the Director of the Open Learning Initiative (OLI) at Carnegie Mellon University. When Thille joined the GSE as an Assistant Professor the following year, Porteus approached her to explore collaboration opportunities.

Porteus and Thille teamed up and set plans to use the OLI Statistical Reasoning courseware to support the 200A course in Fall 2014, with each instructor teaching one of the twice-weekly course sections. "We decided we would take this past Fall to see what material existed in the online courseware that was usable in 200A, and then we would hopefully be able to revise it in the second year of the course," says Porteus.

The OLI courseware is designed around a skill model that articulates the student-centered and observable learning outcomes. Each of those learning outcomes comprises multiple skills and concepts. Potential learner actions and choices during interactive activities are tagged with skills and concepts. When a student makes a particular action, a piece of data is sent to the skill model, which then makes predictions about his or her knowledge state.

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Those predictions are sent to the instructor in real time through the Instructor Dashboard. "Where we could, we used the OLI courseware as a replacement for the textbook," says Thille. "We would introduce the topic and ask the students to work through the online module by at least 24 hours before class. That gave us time to look at the Instructor Dashboard and determine how we would focus our class time for that lesson."

Having students complete the online interactive activities before class helped push 200A towards Porteus' longtime vision for the course. She says, "once we started doing this, I had this 'aha' experience, realizing that the students had come to class having covered the conceptual part," says

Porteus. “That completely freed us up to spend more time focusing on and getting to what I've always wanted to get to: doing the practice interpretations in class. With this approach, we had lots of evidence that the students had done the work before class, and it guided us in terms of what to teach and spend class time on.” Thille agreed, “the students come to class knowing what they know and what they didn't know. And *the faculty member knows* what they know and what they don't know. And possibly the most important thing is *the students know that the faculty member knows* what they know and what they don't know. So we can spend class time, completely aligned.”

Porteus has been using student response systems (clickers) to support active peer-learning in 200A since 2011, and the instructors continued to use these devices during class to stimulate discussion and create a safe, low-stakes environment for student participation. Thille says, “I think a lot of students--especially at Stanford--are sitting there with the concern that 'everyone else is perfect and knows everything, and I can't let people know that I don't know something.' With the student response systems and the OLI courseware, what we try to create is the sense that not knowing something is fine and that is the reason we are here.”

Both instructors prompted the students to submit feedback about the classroom and online activities at several points within the course. While 200A historically receives very positive student end-of-term evaluations, Porteus wasn’t sure how students would react to the new course design. She says, “I was worried that the evaluations might in fact go down during our first year, but that just didn't happen. A lot of them got really fascinated with the OLI piece of the course.” In the final evaluation, students were asked explicitly what they thought of the online component of the course. “Overwhelmingly, they loved it,” recalls Thille. “Especially with statistics, there's a huge variability in the students' preparation coming into the class; you have this incredible diversity of the students. They thought it really helped. ”

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Despite the prevalence of technology within EDUC200A, the success of the course has come from its educational use more than particular features. “This hasn’t been about all the gadgets that we have,” says Porteus. “It's about the fact that within this model, all students are asked to engage; they get to respond anonymously; they don't have to speak in front of a class of 30; and they spend classroom time doing what we want them to be doing. There are all sorts of reasons that we use these tools that have nothing to do with the hardware they have in their hands.”

Thille and Porteus have applied for and received a Vice Provost for Online Learning grant to update and adapt the online courseware to better fit the needs of 200A. One of the big differences between the OLI Statistical Reasoning courseware and EDUC200A, was that the online courseware was designed to support an introductory statistics course where students use a statistical software package to conduct analysis, whereas instruction in 200A focuses on understanding the logic behind how these analyses are done (without using statistical software) and critically evaluating research design and reasoning. The grant will be used to develop topics not yet included in OLI, re-map the online skill model to better fit 200A outcomes, and create additional scaffolding and support for students to be able to critically evaluate research for their written assignments. Porteus and Thille will partner to teach the two sections of EDUC200A again in Fall Quarter 2015.

STANFORD INSTRUCTIONAL DESIGN SPECIAL INTEREST GROUP

This online teaching- and learning-focused special interest group is for people involved or interested in instructional design and online education at Stanford. Follow the conversation and find out about events by signing up for the **Stanford_ID_SIG** listserv at **mailman. stanford.edu**.

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KARIN FORSSELL ON PEER ASSESSMENT WITH PEERSTUDIO

PeerStudio is a free tool developed at Stanford and UC San Diego that facilitates peer review and grading of student coursework, while providing instructor oversight. Learning, Design, and Technology Master's Program Director, Karin Forssell began using PeerStudio in her Technology for Learners (EDUC 281X) course last Fall. In this interview, Forssell shares her experience using peer assessment, her students' feedback, and recommendations for other instructors considering this approach.

Q: WHAT INTERESTED YOU ABOUT PEER ASSESSMENT?

It's clear from some of the prior research that's come out of MOOCs that peer grading can be pretty effective, and using some of the new tools developed for the MOOC platforms to do peer review would help the 46 students in the class get quicker feedback on their writing. There was also something else which intrigued me: I have found that I understand better what expectations are and what good work looks like when I can compare and contrast what I'm doing with other people's work. So, one of the things I was really looking for

was an opportunity for students to get a broader sense of what good work is--an opportunity for them to recognize it while they were working on producing it.

Q: WHAT ARE THE PROCESSES FOR STUDENTS TO REVIEW WORK AND RECEIVE FEEDBACK IN PEERSTUDIO?

The peer review process was very structured, and used a framework of questions and a rubric for reviewing the responses. I wanted everyone to receive two reviews: that seemed to me to be a balance of getting more feedback on your own work, without requiring as much effort on reviewing other people's (because it is work to review other people's assignments). The tool also encourages revision by allowing students to submit a draft for feedback before it gets submitted for grading. This was optional, but meant that they could iterate on an assignment before submitting it for a grade. Students who submitted a draft then 'owed' more reviews. The more feedback you got, the more feedback you gave.

By default, the tool was anonymous to both sides (the person submitting their assignment and the person evaluating that work). I made the decision to ask reviewers to indicate their name so that students could see who had evaluated their assignment. This facilitated a conversation and raised the level of accountability for reviewers to do a compassionate and helpful job.

One of things that students really liked with this tool is that it provides a setup for using an exemplar assignment. I created the exemplar beforehand; I had to use my own framework and consider how my own review would be graded by the rubric I created. The exemplar was available to students from the beginning. When they were starting the assignment, they could see how to approach it, and while they were grading a peer's assignment, there was an example to look to as a comparison. Quite a few of them remarked on how that was very useful.

The tool also allows reviewers to identify and nominate a student submission to be an exemplar if it was really stellar work. This could play forward into future exemplars so that I don't have to create them all. I hope that over time that this would in fact raise the bar!

Q: WERE THE STUDENTS ABLE TO GRADE EACH OTHER'S WORK?

Yes. They really did a nice job of providing constructive criticism to each other. We did do an initial run-through with the tool that was not graded. I felt that doing this first was very helpful in dealing with the sorts of little bumps that you hit using a new technology, and also to help clarify what the expectations of the activity were.

Going in I was a little concerned about whether peer grades would be acceptable within the course, so I told the students that I would regrade anything if they were in any way concerned about the grade or feedback they received. Nobody asked me for a re-grade. In some instances, my

assistant and I looked at high and low scorers so that we could check the quality of the work and also of the grading. There were a couple of student comments about how much work it is to review other people's work. Instructors should use peer review judiciously; you can't assign loads of reviews or their quality will go down. For this course, applying the framework was one of the learning outcomes, and I saw that students had started to internalize that structure as a way of thinking of education technology in the end-of-quarter reflections that they did on their learning.

Q: WHAT OTHER FEEDBACK DID YOU RECEIVE FROM YOUR STUDENTS?

Really the feedback was very positive. Because the nature of the course was around designing new learning technologies, it was a bonus that we were using a tool while it was being developed. The designers of the tool came in and talked to students about the process, and the students provided a lot of feedback to the designers. In the final reflections for the course, a lot of students wrote about how well it worked.

Q: WHAT ADVICE WOULD YOU GIVE OTHER INSTRUCTORS CONSIDERING USING PEERSTUDIO OR PEER ASSESSMENT IN THEIR COURSES?

Give yourself enough time to really work on what the

assignment and the rubric are -- that's key. This process doesn't leave a whole lot of room for ambiguous instructions. You can write an open prompt that goes in a lot of directions, but the rubric needs to be concrete. The rubric turns out to be a central piece of the assignment for the students. It becomes a key take-away from the class.

Q: WHAT'S AHEAD FOR YOU AND PEERSTUDIO?

The platform has been developed as part of Ph.D. candidate Chinmay Kulkarni's dissertation in Stanford HCI. But it will be available as open source and I do intend to use it again next Fall in EDUC 281x as well as in Designing Learning Spaces (EDUC 303x) this Spring. I'm going to explore ways of including self-grading in the process, since that can be a powerful strategy for learning.

GETTING STARTED WITH SOCIAL MEDIA FOR PROFESSIONAL DEVELOPMENT:

Social mediums such as Twitter, Google+, Pinterest, Instagram, Flickr, and blogs are excellent tools for consuming and learning. Many are also harnessing these spaces to share work, build audiences, and connect to a personal learning network. Here are 6 tips for bridging the gap from reading posts in your feed to truly harnessing the power of social media in your domain:

- *Consume without joining:* You can follow users and hashtags on public posts without joining on Twitter at twitter.com.search and on Instagram at iconosquare.com.
- *Start following* some designated hashtags in your field to find and connect with like-minded educators and educators who will push your thinking. (See this list of education-related Twitter hashtags: tinyurl.com/educationtags).
- *Participate in a Twitter Live Chat:* Many interest groups have weekly moderated meetings where educators agree to "meet and tweet" about particular topics or questions. (See this list of popular education live chats as well as guidelines for participating: tinyurl.com/educationchats).
- Attend a *Google Education on Air Live Hangout* for free professional development related to education technologies for teaching and learning. (Find upcoming hangouts and past recordings here: goo.gl/RsycZG)
- *Keep at it:* staying involved regularly will help make your personal learning network robust.
- *Leverage third party tools:* 1) Use URL shorteners such as goo.gl, tinyurl.com, or tiny.cc to shorten, share, and track your shortened URLs; 2) use tools like TweetDeck (on your computer) or Hootsuite (on your phone/tablet) to manage categories and organize tweets from various groups; 3) If This Then That (IFTTT) can help you set up triggers and actions to post across various social media accounts and archive materials to cloud storage services.

Digital Initiatives is written by Pamela Levine and is published by GSE IT 3 times a year.

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