Large Class Initiative: Student-Centered Learning in Large Classes - What’s the Big Deal About Clickers?

The Center for Academic Excellence is sponsoring a large class initiative to facilitate and document cross-department discussions and efforts to enhance student learning in larger classes. Although technology-enhanced practices are certainly not the only way to encourage student involvement and learning, the use of classroom response systems (clickers) as one way to increase student engagement is rapidly increasing across campus. For that reason, CAE’s large class initiative is supporting the work of a faculty-initiated clicker task force, made up of PSU faculty and staff. This task force is charged with researching the use of clickers across campus, evaluating possible vendors, and recommending a common system for campus use. For faculty who choose to use clickers, a common system would provide significant cost savings for students, who buy clicker units for use in classes. A common system would also facilitate more efficient technology, teaching, and assessment support, because regardless of system used, it is important that solid evidence of benefits to students and faculty be at the heart of campus efforts. Here are some common questions about classroom response systems:

What are they, and how do they work? Clickers are small, hand held devices that use radio wave technology to transmit student responses to questions. A portable receiving station is placed at the front of the classroom, and responses are instantly received (anonymously, or identified with individual students) and can be displayed on a screen in a variety of formats (for example, graphically, numerically, text responses, or themes). They can be used as part of classroom participation and discussion, non-graded assessment, graded quizzes or tests, and participation documenting. Data from assessment can be uploaded to grade books in learning management systems such as Blackboard.

Don’t they make students in large classes even more anonymous than they might already feel? Interestingly, the experience of many students in classes currently piloting or using clickers is the opposite. For example, in many classes, some students are more inclined to speak out and ask questions, while others stay mostly silent. Particularly in larger classes, students might get in the habit of passively watching the instructor and more vocal students engage in discussion. With clickers, everyone responds, and the discussions following the display of responses at the front of the room engages class members more because of their natural curiosity in results they helped generate. For an excellent introduction to how clickers are used by faculty, including guidelines and classroom scenarios, see http://www.cwsei.ubc.ca/resources/files/Clickers_Final_Version_04_08.pdf For a review of research on clickers and student learning, see http://lifescied.org/cgi/reprint/6/1/9.pdf

What about critical thinking? Wouldn’t clickers constrain students’ thinking, into yes/no or either/or kinds of responses? If questions are not used carefully, then this could certainly be a downside of clickers. However, the newer generation of clickers offers a variety of response options including true/false, multiple choice, and full text options. Even in cases where a multiple choice option is used, most faculty don’t stop there. For example, they might construct questions carefully to uncover misperceptions, allow students time to discuss or debate option choices, and then use the response results to clarify misunderstandings. Clickers can also facilitate small group work, as well as student-student and student-faculty interaction. For a classroom scenario depicting

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Honoring Dr. Martin Luther King Jr. and His Legacy of Social Justice and Service

200 students, faculty, and staff from Portland State University joined 1,200 students from ten other colleges and universities in the Portland area to celebrate Dr. Martin Luther King, Jr. with a day of service on Monday, January 18, 2010.

The Student Leaders for Service program (SLS) has been leading a day of community engagement on MLK Day for the past ten years. This year, SLS joined Oregon Campus Compact and students and staff from 11 schools to plan the first collaborative day of service and MLK Day's largest student-driven day of service in the country.

Will Wright, SLS member, was on the planning committee. “It’s been wonderful to work with students from other schools. Their unique perspectives will contribute to our own endeavors here on campus. It’s also exciting to be a part of something so large and ambitious.”

The event began with a rally at Concordia University including music by King Elementary School’s choir and remarks from Mayor Sam Adams and Pastor Mark Strong. Immediately following, students boarded busses for project sites with community organizations refurbishing schools, sorting and shelving books, and cleaning recycled bikes.

Megan Jensen, SLS member, also worked on the planning committee. “There are many personal and communal benefits of reciprocal service,” she said. “We recognized the legacy of Dr. King and the civil rights movement, and the great impact that legacy has on the world. Through service, we continue to honor that legacy by actively shaping our communities the way we envision they can be today.”

Exploring Excellence in Community-Engaged Research

In partnership with the Office of Graduate Studies and Research, CAE is leading the Community-Engaged Research Scholars (CERS) program. This program has engaged 12 faculty who have established community-engaged researcher portfolios, and will be co-facilitated by Amy Driscoll, Carnegie Foundation Senior Scholar, and Kevin Kecskes, Associate Vice Provost for Engagement, CAE. This diverse set of faculty are working together and independently to develop publishable case studies of exemplary community-engaged research practices. The intent is that these case studies will inform the broader campus and higher education community about excellence in community-engaged research. The wisdom and experience of this faculty team informed the development of the documentation framework, while the collaborative inquiry process established some common components across the range of projects. CERS are currently working independently to understand and describe their engaged research partnerships and practices within the context of the established framework. Their findings will be shared in May at an open Civic Engagement Breakfast hosted by CAE (details available from caestaff@pdx.edu). Participants and their projects include:

- Bill Becker, Case Study of the Center for Science Education’s Legacy of Partnerships
- Ann Curry-Stevens, Who Counts? Community-Based Participatory Research with the Coalition of Communities of Color
- Veronica Dujon, Contested Water Rights on the Oregon Coast: A Tale of Two Cities
- Margaret Everett and Meg Merrick, Participatory Research to Reduce Childhood Obesity: The Healthy Eating Active Living Coalition
- Eleanor Gil-Kashiwabara, Nak-Nu-Wit System of Care
- Warren Harrison, A High-Tech Partnership With Law Enforcement
- Tami Lasseter Clare, Scientific Analysis a Chinese Bronze Money Tree
- Eric Mancowski, Documenting and Formalizing an Organizational Structure for an Oregon Domestic Violence Research-Practitioner Partnership
- Masami Nishishiba, Examination of three community-engaged research principles in Clackamas County Alternate Work Week
- Kerth O’Brien, Community Members as Collaborators in Focus Group Research
- Stephanie Wahab, Interconnections Project
- Lisa Weasel, Navigating Scholarship of Outreach in the Sciences: Methodologies, Dissemination, and Evaluation
learning outcomes approach is briefly summarized here:

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<thead>
<tr>
<th>“List of Topics” approach</th>
<th>Learning Outcomes approach</th>
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<tr>
<td>• Consult content of course</td>
<td>• Begin with larger questions: ultimately what do I want to students to learn as a result of this course; how will they be different 5 years from now?</td>
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<tr>
<td>• Outline list of topics: consider the most useful, logical order and list topics</td>
<td>• Develop course outcomes (knowledge, skills, attitudes, behaviors)</td>
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<td>• Spread topics out over the term: consider length of time, depth, breadth needed for all topics and sub-topics</td>
<td>• Design specific weekly outcomes and/or topic outcomes that follow from course outcomes</td>
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<td>• Fill in assignments, exams, papers, projects</td>
<td>• Design course readings, activities, assignments and evaluation that will best assist students to meet the outcomes</td>
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<tr>
<td>• Develop grading scale</td>
<td>• Plan for weekly activities that best help students meet course and weekly outcomes</td>
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<tr>
<td>• Plan class activities, teaching strategies</td>
<td>• Plan for periodic, anonymous assessment of learning</td>
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Many faculty find that envisioning the “five year plan” for their course leads to fresh insights about the essential purposes their courses achieve. From here, major course outcomes are developed or revised. These outcomes are precise (avoid verbs such as “appreciate” or “understand” that are difficult to assess), student-centered (what you hope students will learn rather than what you plan to teach them), and outcomes focused (what students will be to do to demonstrate their learning, rather than a description of the activities themselves). Once course outcomes are developed, an additional step is to write specific weekly, or topical outcomes following from the course outcomes.

Communicating these outcomes regularly to students can be very motivating as it helps them understand how each week fits into the larger picture of the course. For example, from a course in History:

**Students will learn to think like a professional historian (the “five year plan”) by posing questions, analyzing data and interpreting evidence (course outcome that is precise, student-centered and outcomes-focused).**

**Following from this course outcome, specific outcomes from one unit in the course might be as follows:**

**Students will be able to identify criteria used for interpreting evidence in historical texts, use appropriate criteria to classify different forms of evidence, and compare different forms of evidence based on their use in context.**

In this case, not only are students very clear about the learning purpose of activities from week to week, but they are motivated to keep the larger purpose in mind: thinking like a professional historian. Clear, specific outcomes connected to various course activities and assignments encourage students toward deep learning because they are motivated to direct their focus toward the attainment of those outcomes (Driscoll and Wood 2007).

Finally, the readings, activities, assignments and assessment strategies that will best help students meet the outcomes are planned. For example, which readings, assignments and activities would best assist students to achieve the above history outcomes? At the end of the unit, how do we know that these outcomes have been met? Using well-planned course and unit outcomes as guideposts results in an integrated course plan with components that are connected and complement one another.

For more ideas and tools to construct integrated course plans for significant learning, the following resources are available for checkout in the CAE library (Cramer 349):


**Who’s Who in the CAE?**

Kevin Kecskes, Associate Vice Provost for Engagement
Leslie McBride, Associate Vice Provost for Teaching, Learning, and Assessment
Amy Spring, Assistant Director for Community-University Partnerships
Janelle Voegele, Assistant Director for Teaching, Learning, and Assessment
Michael Chamberlain, Afang Gordon, and Vince Schreck, Instructional Designers
Patrice Hudson, Program Administrator and Newsletter Editor
Online Teaching & Learning by the CAE Instructional Design Team

CAE partners with PSU’s Office of Admissions, Registration, and Records (ARR) to promote hybrid (blended) courses

Competition for classroom space continues to grow. The Hybrid 50/50 Initiative (50% online / 50% in the classroom) sponsored by CAE and ARR will offer priority scheduling in high-demand time slots while providing faculty with financial and other support for upgrading their online teaching skills and efforts.

Here’s how it works:

CAE provides:
- workshops to support you in redesigning your traditional face-to-face course for hybrid delivery;
- ongoing support for this course from instructional designers;
- a stipend of $1,500 to each instructor paid upon completion of the delivery of the new course (funding for the faculty stipends was made available from the online fees now charged for fully or partially online courses).

ARR provides:
- priority scheduling for these hybrid courses.

If you are interested in participating in the AIM Hybrid Program, please fill out the application form at http://survey.oit.pdx.edu/ss/wsb.dll/s/2bfg129a

ECHO 360 now in several PSU classrooms

PSU now has Echo 360 (www.echo360.com) in several classrooms on campus. The platform “…automatically, affordably, and reliably captures class lectures and converts them into podcasts, video, rich media, and more for anytime, anywhere playback.” Log in with your PSU Odin ID to see an example of how Echo 360 simultaneously captures both the PowerPoint presentation and a video of the lecturing instructor, Assistant Professor (Psychology) Gabriela Martorell at: http://echo360.pdx.edu/ess/echo/presentation/5ea0bd63-5c9a-4728-b03d-100cb999c9a3

If students miss class or you simply want to provide opportunities to review lecture material, Echo 360 might be the appropriate technology for you. For more information about using Echo 360, please contact Doug McCartney (extension 5-9110).

Elluminate Training Sessions

The CAE has taken an active role in training faculty members to use the synchronous learning tool “Elluminate Live.” Every Friday during the month of January, 5-12 faculty members participated in live training sessions from their own office or home computers. These live sessions focused on the basics of how to communicate in a synchronous environment, upload and share files, optimize audio/video settings, and use the whiteboard and chat features. If interested in incorporating live elements into your teaching, email: blackboard@pdx.edu and ask about training options. Also, look for these Friday training sessions to continue throughout February and beyond.

Contact the Instructional Design Team at teachingonline@pdx.edu for:
* Faculty questions related to online pedagogy
* Online class design
* Blackboard training for faculty
* Blackboard faculty user support

(“Clickers” continued from page 1)

how clicker questions can encourage critical thinking in class, see http://net.educuse.edu/ir/library/pdf/ELI7002.pdf For an example of research on student perceptions of clickers, see http://alh.sagepub.com/cgi/reprint/8/3/233

Are these only for very large classes? Clickers are being used in all class sizes at PSU. Some faculty who initially tried clickers in larger settings were impressed by how efficiently they were able to gauge all students’ understanding of course material as they went along, and so have adopted clickers in smaller settings also.

What are the drawbacks to using clickers? To use clickers, students must purchase a clicker unit. An average cost is around $45.00; however, with a common clicker system on campus, students can use units for multiple classes, and the bookstore can arrange to buy back units for approximately half the purchase cost. Most vendors will provide a receiver unit and one clicker to faculty at no cost. Students can forget to bring their units to class, however, so “loaners” might need to be provided. Also, most clicker systems have options for students to use laptops and cell phones for responding rather than the clicker unit.

There is, of course, the time needed to learn the systems and incorporate clicker activities into class. The first term may seem a bit “clunky” as you get used to the technology and figure out the interface between clickers and Blackboard. However, initial assessment of courses across campus indicate that the payoff in students’ attention, involvement and achievement have been worth the startup efforts. If you are interested in joining the clicker interest group (to receive periodic email on clicker task force progress and upcoming campus educational events related to clickers), please contact Janelle Voegele at voegelej@pdx.edu.