

## **COMMITTEE ON COMPUTING AND TELECOMMUNICATIONS**

### **Annual Report, 2014-15**

To Academic Senate, Santa Cruz Division:

#### **Executive Summary**

The Committee on Computing and Telecommunications (CCT) reviewed and updated its charge, including coordination of a name change, and monitored the changing landscape of UCSC's learning management system (LMS), eCommons, which will require oversight with the new vendor agreement. The Canvas LMS research project was successful with a small cohort of faculty hosting courses on the University of California Online Education (UCOE) Canvas website. Members considered a number of important requests from faculty members concerning timely computer upgrades and support for faculty in certain divisions to the need to identify a much needed space for another computer lab. We were kept up to date on various campus technology issues throughout 2014-15.

#### **Committee Charge Change**

This year members of the committee discussed their purview and workload with regard to the description in the committee's charge. CCT members wanted to re-examine the committee's charge and determine if the description actually reflected the committee's current activities and engagement with the campus. This year the Senate Chair and co-chair suggested considering reviewing and possibly revising the committee charge, which was last changed in 2006.

Members reviewed the charges of similar committees in the UC System and, after discussion, decided the committee's role was not accurately represented by its charge. However, the committee did not want to follow the lead of some other UCSC campuses and focus exclusively on instructional technology, which is predominantly the purview of the Committee on Teaching at UCSC. CCT oversees a diverse range of IT issues, including: campus wiring or infrastructure, web content management systems, learning management systems, fiber optics, telecommunications including telephones, and reviewing policies for electronic functions.

Technology's role in the university has expanded dramatically since the committee's charge was revised in 2006, and the current language seemed unclear and outdated. The charge is specific to the committee reviewing and commenting on issues, but at times it seems the issues have been decided before coming to the committee due to scheduling time tables, severely limiting meaningful Senate oversight of processes with significant influence on the educational and research environments. Other issues have long carry over periods, like the multi-year infrastructure/wiring project or long term data storage solutions.

Informational IT systems that affect the major mission of the university are not in the purview of any other committee. CCT has the responsibility to report the state of IT Issues to the Senate and could present a quarterly update at future senate meetings. The revised committee charge [URL] was passed at the May 29, 2015 Senate Meeting and included approval to change the name of the committee to the Committee on Information Technology (CIT).

### **UCSC's Learning Management System (LMS), eCommons**

This year's CCT consulted with the Director of Learning Technologies (LT) on last year's eCommons survey results, which were produced after the 2013 – 14 CCT committee stopped meeting. Members were disappointed with the summary, survey questions, and response rates. We expressed concerns about some aspects of the organization of the survey and the phrasing of some of the questions. We discussed measures that could improve future surveys instead of analyzing the results, and recommended that for future surveys the Faculty Instructional Technology Center (FITC) staff reach out to faculty with extensive research experience in survey design. Faculty with this expertise may be willing to offer their services to assist Learning Technologies in the development of future survey questions.

UCSC's learning management system, eCommons, uses the Sakai platform. CCT has been monitoring UCSC's learning management system for the past several years and recommended exploring other systems after several major universities pulled out of the Sakai community. Last year's committee interest in changing the (LMS) eventually lead to the research project started this year in the Canvas learning environment.

The LT Director consulted with members on the recent vendor change of our LMS, eCommons. The original vendor, Rsmart, could not deliver what was promised so they reduce their fees, then several years ago the vendor changed to ANI who eventually sold the service contract to VERT Capital<sup>1</sup>. ITS staff are not impressed with the support we are receiving and have rated the delivery of our service a C minus. UCSC will not want to engage in any long term contract obligation with this vendor. Until a decision can be made the FITC staff will be tracking performance in eCommons. This process is seamless from a faculty perspective, the level of service will remain the same but if change is needed, it could take up to 6 months to move things into a new learning management system and this would, ideally, be seamless. CCT will follow up in the fall.

### **Canvas Research Project**

#### ***Overview***

The current UCSC'S Learning Management System (LMS), branded as eCommons,<sup>2</sup> is based on the Sakai platform, and was introduced to the campus in the fall of 2010. The Canvas Research Project was initiated at the request of the 2013-14 CCT. The project gave a dozen UCSC faculty hands on experience with a highly regarded LMS, and identified possible gaps in functionality or ease of use between eCommons, the current Sakai-based LMS, and Canvas. The primary outcome of the Canvas project is a report based on exit interviews with the participating faculty and the minutes of biweekly Canvas "touch base" meetings.

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<sup>1</sup> <http://www.vertcapital.com/>

<sup>2</sup> <http://its.ucsc.edu/ecommons/>

There is no expectation that UCSC will adopt a new LMS in the immediate future as a result of this study. The results of a recent campus survey suggest that faculty are for the most part either satisfied with or neutral regarding eCommons. However, the aggregate LMS landscape is rapidly changing, while replacing a specific LMS implementation is typically a multi-year process; there are compelling reasons to be forward-thinking and consider other options. The current contract term for eCommons ends in summer 2016; the information gained from the Canvas project will influence both the assessment of our current LMS implementation in Sakai and decisions made over the next three to five years.

### ***Why Canvas?***

Diverse LMS's are currently available: Blackboard<sup>3</sup> (1997), Moodle<sup>4</sup> (2001), and Sakai<sup>5</sup> (2004) are well known, widely used systems; these systems were all considered in the LMS selection process leading to UCSC's adoption of Sakai as the LMS underlying eCommons. Other systems, including BrightSpace<sup>6</sup> by Desire2Learn<sup>7</sup> (1999), are available, but less popular for university use. Canvas, introduced by Instructure<sup>8</sup> in 2011, is a relative newcomer with a rapidly expanding client base. Google Classroom<sup>9</sup> is a novel instructional tool, but not a full LMS.

Canvas was chosen as the experimental LMS because of its stellar reputation, widespread use within the UC system, robust hosting, and availability for realistic testing through University of California Online Education<sup>10</sup> (UCOE).

Canvas is known for its ease of use, flexibility, and aesthetic appeal. Instructure posits<sup>11</sup> that the key question determining LMS selection should be: Will it get used? The key six subsidiary questions they propose are:

1. Is it easy to use?
2. Does it do what teachers/students need it to?
3. Does it provide easy mobile access?
4. Is it dependable?
5. Does it make teachers/IT/administrators' jobs easier?
6. Does it save time?

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<sup>3</sup> <http://www.blackboard.com/>

<sup>4</sup> <https://moodle.org/>

<sup>5</sup> <https://sakaiproject.org/>

<sup>6</sup> <http://www.brightspace.com/>

<sup>7</sup> <http://www.d2l.com/>

<sup>8</sup> <http://www.canvaslms.com/about-us/>

<sup>9</sup> <https://classroom.google.com/welcome>

<sup>10</sup> <http://www.uonline.edu/>

<sup>11</sup> <http://www.canvaslms.com/higher-education/>

These performance goals aligned with CCT’s priorities for LMS performance. Open APIs allow substantial IT customization of each implementation, while the existence of a large collection of add-on resources that can be easily linked to Canvas-hosted courses allows further course-by-course customization with relatively little IT staff effort. Instructure uses Amazon Web Service, which offers robust, cost-effective hosting.

Canvas is currently used by Berkeley (bCourses<sup>12</sup>), Merced (CatCourses<sup>13</sup>), and UCOE<sup>14</sup>. Davis (SmartSite<sup>15</sup>) and Irvine (EEE<sup>16</sup>) are piloting Canvas; Davis’ current LMS is Sakai, while Irvine’s EEE is “homegrown”. Los Angeles (CCLE<sup>17</sup>) and Santa Barbara (GauchoSpace<sup>18</sup>) use Moodle, while Riverside (iLearn<sup>19</sup>) and San Diego (Ted<sup>20</sup>) use Blackboard.

We recognize considerable contributions by the Office of Learning Technologies (LT) and the Faculty Instructional Technology Center (FITC) staff. The arrangement with UCOE was negotiated by LT Director Phillips, most of the courses in the Canvas project were hosted by UCOE, using the Canvas implementation UCOE developed for their courses. This gave project participants experience with a customized version, particularly the enrollment management and score-reporting features.

### ***Implementation***

UCSC approached UCOE about hosting the courses in the UCSC Canvas project. UCOE agreed to host a limited number of courses in fall 2014 and winter 2015; the agreement was extended to spring 2015. Eleven faculty participated in the Canvas evaluation project; an additional faculty member provided detailed feedback on her experience developing and teaching an online course using Canvas as part of the Learning Technologies Initiative (ILTI) program. Thirteen of the courses were hosted by UCOE. Four very small courses (fewer than 20 students) were implemented on Instructure’s free public platform, which allowed evaluation of some Canvas features not supported by UCOE. In the fall and winter, the courses selected for the project had very low enrollment, to minimize the negative consequences for students if there were any problems. In spring, one of the courses in the project was both large (389 students) and media-rich. The UCOE courses developed by UCSC faculty in the ILTI program were not part of the Canvas project, but these courses have been implemented in Canvas, and feedback on Canvas from the instructors of one of the ILTI courses is included in the report.

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<sup>12</sup> <https://bcourses.berkeley.edu>

<sup>13</sup> <https://catcourses.ucmerced.edu/>

<sup>14</sup> <http://www.uonline.edu/>

<sup>15</sup> <https://smartsite.ucdavis.edu/>

<sup>16</sup> <https://eee.uci.edu/>

<sup>17</sup> <https://ccle.ucla.edu/>

<sup>18</sup> <https://gauchospace.ucsb.edu/>

<sup>19</sup> <https://ilearn.ucr.edu/>

<sup>20</sup> <http://acms.ucsd.edu/faculty/ted/>

The Canvas project was supported at UCSC by Learning Technologies (LT) and FITC staff, who also handled negotiations with UCOE. The Director of Faculty Instructional Technology Center (FITC), and the LT Director, allocated FITC staff resources committed to the project. The FITC staff help support one of the project participants during spring quarter as well as providing training to FITC staff, who were introduced to the product during the test. The CCT Chair and analyst, coordinated recruitment of faculty participants, the working group meetings, and project reporting. The project working group, consisting of representatives from the offices of FITC, Academic Senate, Learning Technologies, and the Vice Provost of Academic Affairs who met biweekly for updates and planning sessions. CCT recognizes considerable contributions by these offices without their support the project could not have moved forward.

### *Courses*

The courses in the project ranged from Writing 2 to a second year graduate course in Mathematics. Course enrollments ranged from 3 to 389. Faculty from the Arts, Humanities, Physical and Biological Sciences, and Social Sciences Divisions participated in the project. (A prospective participant from the School of Engineering dropped out shortly before the start of the quarter.)

- Economics 197: Economic rhetoric
- Earth 3: Geology of national parks
- Greek 100: Introduction to Greek literature
- History 159: Temple and city: The Egyptian New Kingdom and the city of Thebes
- History 173C: Brave new world? Scientific and technological visions of utopia and dystopia in Russia and the Soviet Union
- History 196: Special topics in history
- Latin 100: Introduction to Latin literature
- Math 208: Introduction to manifolds
- Math 212: Differential geometry
- Music 11C: Popular music in America
- Sociology 199: Participatory democracy in Japan (2x)
- Writing 2: Rhetoric and inquiry

Seven of the participating instructors have extensive experience with eCommons. One has moderate experience, two minimal experience, and one no experience using eCommons to support their courses.

### ***Exit interviews***

CCT worked with ITS instructional designer staff to develop an exit interview covering faculty responses ranging from specific capabilities to overall impressions (see Appendix A). Faculty reactions are summarized below:

### ***Overall experience***

Faculty comments:

- Canvas is head and shoulders above any other CMS that I've seen.
- Sakai is like a Prius, and Canvas is like a Tesla.
- I have adored it.
- This seems to be built with teaching in mind.
- It definitely enhanced the class.
- I always thought that eCommons was hard to read.
- I would transfer Sakai courses to Canvas.

All participants

- felt that Canvas met or exceeded their expectations
- achieved their pedagogic goals
- would use Canvas again
- preferred Canvas over eCommons(Sakai based LMS)
- would recommend Canvas (one participant didn't address this)

Several participants praised the esthetics of Canvas. Eight participants would miss Canvas if it were no longer available, two wouldn't miss it.

### ***Functionality***

Six of the participants characterized the range of Canvas functionality used in their course as extensive. Two described the range of features used as moderate, and two more as minimal. The remaining participants didn't address this question. Four identified specific gains in efficiency, four saw the potential for improved efficiency, and one reported no gain. Six found Canvas easier to use than the current Sakai system, two found it to be about the same, one didn't address this question, and one found Canvas to be harder than the current system.

Features used, with number of faculty who mentioned use of the feature given in parentheses if more than one:

- Announcements (7)
- Assignment submission (7)
- File upload (7)
- Content pages (6)

- Speedgrader (6)
- Grade weighting/rubrics (2)
- Quizzes (2)
- Audio and video comments
- Collaborative documents
- Discussion forum
- E-textbook integration
- Linked calendar
- Media library
- Peer review
- Piazza LTI
- Zaption

Praised features:

- Content organization, including cross-listed content, multiple points of access, and modular structure
- Ease of content creation, particularly the page editor, the LaTeX editor, and the possibility of non-Latin alphabet display
- Quizzes
- Speedgrader: efficient, versatile PDF mark-up, rubrics, and multiple options for efficient feedback, including audio messages
- Collaborative document creation.
- Calendar, including automated push of events to external calendars and content links within calendar entries
- Tracking and statistics
- Gradebook
- Integration with Piazza for group interactions
- Peer review, video messages
- Navigation and user interface
- Discussion forums
- Announcements and notifications, email communication

Desired functionality:

- Allow GIFT files in quiz construction
- Collaborative spreadsheets
- Drag-and-drop columns in gradebook
- Notes in gradebook that are visible only to instructors
- Option for HTML in email and announcements
- Screen recording in video comments

Criticism:

- Limited student view
- Navigation can be confusing
- Tutorials and documentation; non-intuitive labels and navigation

A few faculty would have liked access to some features of Canvas that are not included in the UCOE configuration (e.g., the ability to "masquerade" as a specific student to replicate a situation).

***Transformation of teaching***

- Less writing on the board; less time spent on grammar (because of quizzes); better organized content
- Posting materials ahead of time; better organization of materials; more flexibility; less formality in distributing materials; coaching rather than grading
- Online-only teaching
- More options for feedback; richer and more efficient peer review experience
- Recorded feedback

***Enrollment and rosters***

To support the large course offered in Canvas during spring quarter, automated enrollment feeds between UCSC and UCOE were implemented. This required coordination among the project participants, project committee members, FITC staff, UCOE staff, and the UCSC registrar's office. The feeds for a few courses were delayed by one or two days. These were predictable issues as this new process was figured out. The FITC support team reports that subsequent courses being offered in the Summer session have been successfully implemented and had rosters attached in very short timeframes, now that the essential steps are in place and the players are informed.

A few courses were implemented using Instructure's [free](#) Canvas hosting, and were not integrated with UCSC's AIS. Enrollment of students in Instructure's 'vanilla' version of Canvas is more flexible than in the courses hosted by UCOE; in particular, auditing students could easily be added by the instructor.



### ***Looking ahead***

ITS Director of LT has arranged with UCOE for Canvas support to continue through the 2015-16 academic year. UCOE will host up to 15 courses per term, with a maximum cap of 1000 students per term. Ongoing support for the courses developed in the Canvas project is recommended.

CCT recommends that as UCSC evaluates its contract with ANI for Sakai support, we compare the advantages and costs (both direct and embedded) of retaining Sakai to those involved in moving to a new LMS platform. While we do not see an immediate need to change systems, we believe a viable Plan B is an essential component of a strong bargaining strategy when working with our current Sakai provider, and a valuable guide in short- to mid-range long term planning.

### **Requests to CCT**

A Professor of Psychology sent in a request to CCT to advocate for better IT support, timely equipment replacement, and services for faculty in the Social Sciences Division. CCT did not take up this issue as the Committee on Research was already working with Divisions on this topic.

Several Senate committees received a request from a Professor of Computer Sciences regarding the capacity of campus computer labs. Computer lab space use has increased by 43% over the last 5 years and this trend is likely to continue. Lab use has evolved; increased instructional use has resulted in reduced availability for student use outside of official lab sections. The increased demand for lab space is severely straining the current infrastructure. There is an urgent need for at least one additional large computer lab, as was promised with the funding of a new building, but was suspended due to lack of state funding. We agreed there should be a clear plan to find space and equipment for another large computer lab. A large lab space with 50 seats configured for a “pair programming” learning paradigm, with two seats per desktop computer and additional monitors and keyboards for students who bring their own laptops, could be a very cost-effective option. If adequate resources were available, two new labs would meet the anticipated demand.

We understand that creation of a new computing lab would involve additional set-up costs for printers, projectors, and screens, as well as ongoing expenses for staffing and supplies. However, the computer labs provide essential opportunities for interactive, collaborative learning; the proliferation of personal electronics does not reduce the value of group work in a consistent, robust computing environment. We are also concerned that with the increased use of the labs as classrooms, there is less opportunity for students to work in the labs outside the structured lecture/lab context; the informal oversight and peer guidance available in the labs are invaluable for students developing their skills in problem solving, effective exploitation of system features, and debugging.

## **ITS Updates on Projects**

### ***Faculty Website for Resources***

The Director of Academic Divisional Computing consulted with CCT on the new ITS resource website for faculty<sup>21</sup> members. Director Hesse explained the organizational structure for faculty to reference with regard to each division while navigating on the ITS website. The faculty-friendly website includes tutorials, and quick links to campus systems faculty may want to access. Areas of interest include: Instructional Services, Research Support and Best Practices.

### ***Wireless Coverage on Campus***

The Vice Chancellor of Information Technology (VCIT) updated the committee on the increased workload for ITS staff due to the large volume of wireless access devices installed on campus by students and others. This phenomenon denies users access to the internet as well as in classrooms with wireless access. This is caused by frequencies interfering with each other and ITS is working on rotating frequencies to alleviate the problem.

### ***Data Storage and Data Center***

Chair Lewis expressed interest in following up on the broader issue of data storage costs at a data center versus cloud storage and development of a clear comparison made with costs from the campus versus an outside vendor. The VCIT volunteered that ITS has such a report for members to review at a future meeting. CCT did not have time this year for such a review and will request the report with a recommendation for next year's committee to take up.

### ***Creation of GERI Privacy Issues Committee***

The new UCOP Security Program includes areas with regard to network, data scanning, audits, and servers. UC Provost and Executive Vice President for Academic Affairs created a new committee, called GERI, for issues related to privacy, ethics and risk. UCOP is requesting an annual report from these divisional committees. The membership representatives have expertise from the general counsel's office, ethics, compliance and audit service, risk management, and information technology services. ITS did not create this committee as our campus has a committee on Security that includes these representatives. This year there have not been any privacy issues; the committee will prepare a report on their activity this year. CCT will be provided with a summary to review in fall quarter.

### ***ITS Security Policy Revisions for Review***

ITS periodically updates and or reviews these policies every three years. CCT reviewed four policies this year. The first was the Acceptable use policy (AUP), which must follow the UCOP policy so there was not much discussion or changes to be made by the committee. The second policy was based on the minimum requirements of a device's connectivity software requesting to join the UCSC network. The connectivity policy requires that any personal device used on campus meet UCSC minimum connectivity or be banned. Members found no issue with the red line additions and changes. The password policy is a routine reminder with updated standards for security and password strength and

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<sup>21</sup> <http://its.ucsc.edu/faculty/index.html>

was also unproblematic. Members discussed the policy for routine monitoring of systems and users. While the language may not be ideal, some members felt this type of language was necessary for the operations and mission of a research university. Members agreed the policy changes seemed reasonable and appropriate to recommend approval.

### ***Campus Infrastructure TIU Project***

The Committee consulted with the Director of Core Technologies on the progress with the Telecommunications Infrastructure upgrade project (TIU) on campus. The infrastructure upgrade is divided into four phases, phase A & B are now at completion. The following buildings have new infrastructure: Arboretum, College 8, Kerr Hall, Kresge College, Oakes College, Physical Sciences, and Porter College, Sinsheimer, and Thimann Labs. The next phase, phase C is planned for July 2015.

### ***UC Path***

The VCIT updated the committee during the year on the progress of the system wide payroll database called, UC Path. UC Path seems to be delayed yet again with regard to data collection and implementation for the system. There are many compatibility issues with this conversion, as there are 10 unique payroll systems and each has its own issues depending on the campus structure. UCSC may explore creating a smaller version with a couple of other UC campuses. As of spring quarter there has been little progress with the payroll system but the next pilot group will be the UCLA campus. Staff at UCLA will try and build their processes around the proposed structure and send these demos to UCSC and UCM to evaluate before going forward with full implementation. As UCLA is one of the more complex campuses, the idea is to have UCLA mirror the findings, run an analysis and then move on to the next step for full implementation.

### ***DMZ for Faculty***

ITS applied for a grant to create a high speed internet connection, known as a Science Demilitarized Zone (DMZ), to help faculty move large amounts of data over the internet. This internet connection sets aside part of the campus network for the exclusive use of researchers. The existing TCP network on campus could not support transferring large amounts of data without slowing down campus business needs as well as disrupting transfers. One of the goals was to create a new network that could support large volumes of data, could be upgraded at minimal cost, and wouldn't require large amounts of bandwidth to move the data. CCT members invited ITS Director of Faculty Partnerships for an update and consultation on the Science DMZ (Demilitarized Zone). After Deans and Assistant Deans have been notified, ITS staff will visit divisional liaisons to coordinate a presentation for interested faculty.

ITS is reaching out to all faculty members who would benefit from this service and is even thinking of putting together a tutorial or workshop class. Members were impressed with the 100Gig internet connection and the convenient user interface. Globus is the software interface on the Web for data transfers, there is also a testing site. The testing and experimenting of tools for best practices has evolved into a Graduate student project. One of the first adopters of the DMZ is the Genome Project

in BSOE, and another machine is housed in the Data Center. Other departments and disciplines that could benefit from this network include Theater Arts, Dance, and Music.

During a demo of the DMZ at a CCT meeting, 10GBs of data was transferred in less than a minute; the standard time is 10 minutes. The DMZ can offer a 40 Gigabit connection for faculty participants.

UC campuses will soon be a part of the National Science Foundation (NSF) smart internet innovation program with data, called, Data Infrastructure Building Blocks (DIBBs). This proposal will provide content centered networking models; data will move through the system without encountering bottlenecks. The projected date for availability is the end of March 2015.

### **CCT/COT Subcommittee**

CCT members want to work in tandem with the Committee on Teaching (COT), for online education oversight. Both committees want Senate oversight of online tools, software, course guidelines, and infrastructure needed for online education. CCT declared last year that the committee's role with online education would revolve around software and infrastructure for campus systems such as the learning management system. COT, would be more involved with hands on tools with tutorials for faculty to reference, and pedagogical strategies. The subcommittee was not created this year but we recommend the 2015-16 committee consider this next year.

### **Summary of Routine Business**

Members served as representatives on the following administrative committees during the year: Capital Planning and Space Management Classroom Sub Committee, Advisory Committee for Information Technology (ACIT) and the ITS Security Committee.

Members reported back on the following topics:

- Campus directory profiles are now stored in a database and anyone can update their profile easily
- The Online directory has been integrated with the identity management system and only appears once on the web
- Mobile devices are now able to access the UCSC website with iPhone, iPad, etc. within house software that IT staff have written to accommodate the campus population.
- Freedom of Information Act (FOIA) requests for faculty
- UCLA IT Summit

Senate Committees were asked to comment on the UCOP Open Access Policy for Non Senate Members and the draft Accessible Technology Plan (AT).

Recommendations for 2015-16 CCT:

- CANVAS Pilot hosting continuation for interested faculty members
- Web information on Online Education tools for faculty jointly with COT
- Data Center request report on analysis

- Review Consultants analysis of the UCSC Website

Respectfully submitted;

COMMITTEE ON COMPUTING AND TELECOMMUNICATIONS

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## APPENDIX A

### COMMITTEE ON COMPUTING AND TELECOMMUNICATIONS Canvas Evaluation Questions

#### Comparison to eCommons

- Does Canvas seem better, worse, or about the same as eCommons?
- Do you prefer using Canvas or eCommons?
- Are there specific features in eCommons that you prefer to what is available in Canvas?
- Are there specific features in Canvas that you prefer to what is available in eCommons?

#### Functionality and Features

- Were you able to accomplish all of your pedagogical goals with Canvas?
- Which pedagogical goals, if any, weren't accomplished?
- Did using Canvas allow you to save time or effort in teaching or course development?
- Did using Canvas increase the time or effort you expended in teaching or course development?
- Which features did you use in Canvas?
- Were there any features that you chose not to use?
- Were there any features that Canvas was missing?
- Are there any features in eCommons that you couldn't find in Canvas?
- Are there features that you used in Canvas that aren't available in eCommons?

#### Possibilities for Innovation

- Were you able to do anything new in your teaching with Canvas?
- Did any of the features of Canvas inspire you to try something new in your teaching?

#### Students

- What did students tell you about their experience with Canvas?

#### Demand

- Would you use Canvas again if it were available?
- Would you recommend Canvas to your colleagues?
- Will you miss Canvas?

Experience

- What excited you most about Canvas?
- What frustrated you most about Canvas?
- Was Canvas easy or hard to use?
- Was it easy or hard to navigate through Canvas?
- Were there any specific features in Canvas that were particularly easy or hard to use?
- Did you like or dislike the way Canvas looks?
- How would you describe your overall experience with Canvas?
- What feature or features about Canvas worked better than in eCommons?
- Were your expectations met or exceeded?