

# **CCFIT COURSE MANAGEMENT TOOLS SUBCOMMITTEE REPORT June 2005**

## **SUMMARY**

The committee recommends that campus improve our Course Management Tools (currently MyUCDavis) and join the “Sakai Project”. The campus must provide sufficient resources for the education and training of faculty in a new system based on Sakai, as well as for the initial planning and implementation, initial and ongoing training, continuous research and development, and production maintenance and support of Sakai. This cannot be a one-time investment. The support must be on going for success.

## **A. INTRODUCTION**

The UC Davis Strategic Plan states that in the area of learning, we will 'provide enriching learning experiences.' As part of that learning experience, the campus must recognize that students have grown up with computers and technology. Seamless integration of computers into the academic environment is an expected part of the modern university and often enables more effective teaching and better learning.

At UC Davis, a number of course management tools have been available to faculty and students for the last several years. Those tools have enabled instructors to more easily manage such key administrative functions as distributing course materials and information through course Web sites as well as assessing student learning through online interactive quizzes, and tracking student grades with the help of electronic grade books. Many instructors have also made use of the electronic communication tools in the MyUCDavis portal, which allows faculty-to-student, faculty-to-group, and student-to-student communication through email, threaded discussion boards, and chat rooms.

To date, some faculty have adopted these tools, for example 28% of instructors used Website Builder, 40% of courses used GradeBook in Winter 05. A detailed analysis of the current course management tools and their use is presented later in Section C of this document.

In addition, in a sign that UC Davis might be entering a new era, faculty responded very favorably to the Fall 04 campus decision to require that final grades be submitted electronically. While many instructors used the GradeBook tool available in MyUCDavis, others opted for the simplified electronic grade submission tool available from the Online Grading Web site. Not only did the Registrar's Office report increased accuracy, efficiency, and cost-savings, students were thrilled to be able to access their grades sooner than ever before. Students have embraced the course management tools in MyUCDavis as a convenient, easy, and fast way of obtaining the information they need, when they need it.

The existing campus course management tools were developed several years ago on a fairly small budget (approximately \$125,000), with no major influx of campus funds since then. When developed, this system did an excellent job of providing course management tools, some of which are just now becoming readily available at other institutions. There is broad agreement that the campus would benefit from investigating and constantly investing in a new, state-of-the-art set of course management tools. Faculty have been more reluctant than the

students to adopt these tools. Not only do faculty and students seem hungry for a more intuitive, time-saving, and efficient system, but the campus, through its various cross-departmental partnerships and its involvement in the national open-source Sakai consortium, seems poised to take the next steps in its pursuit for excellence in teaching and learning.

The committee evaluated the current set of course management tools supplied through MyUCDavis, as well as investigating other available systems including, Sakai, Moodle, Blackboard, and Breeze. In addition, we met with the representatives of the Vet and Med schools at UC Davis to learn about the decision process that led to their adoption of Sakai. Further in-depth evaluation of Sakai was carried out by meetings with representatives of partners in the Sakai project, Indiana University, UC Berkeley, Stanford, and R-Smart, a corporate member of the Sakai team. In addition, several presentations were given by faculty who were effectively using the MyUCDavis tools, as well as some who had gone beyond what is currently available into other innovative uses of modern technology to enhance learning.

## **B. RECOMMENDATIONS**

It is with this context in mind that we make the following three recommendations, with details supplied in the following sections. These recommendations, we believe, will put UC Davis on the road to being a leader in the field of educational technology.

1) We recommend that resources be made available to educate faculty about these tools, train them in their effective use. We also recommend a marketing campaign to convince faculty that these tools will save, not cost, them time and open the door to more innovative forms of learning. Appropriate incentives must be developed to encourage and reward faculty to implement these course management tools. The best course management tools are useless without the active participation of the faculty. However, this effort must be coupled with a corresponding development of the tools, so that they meet the needs of the faculty and the students. Otherwise, we will lower rather than increase participation. These resources must be on going and effective. In addition, an effort must be made to research faculty attitudes and needs about both current and coming tools, and to plan the rollout, and the communication about the rollout, to maximize faculty buy-in.

2) We recommend that UCD implement Sakai as the campus' primary learning information system. It is imperative that UCD's enterprise-level learning information systems keep pace with the ever-increasing demands and expectations of students and instructors, quickly adapt to the rapidly changing technology environment, and be the most cost-effective solution possible. Sakai is a collaboratively developed and maintained enterprise-level learning management system. Its development follows the "community source model," which is an extension to the growing open source movement that relies on defined roles, responsibilities, and funded commitments by community members. The Sakai Project was founded by four institutions (University of Michigan, Indiana University, MIT, and Stanford University). The project currently has over 70 partner institutions including five University of California campuses. UCD became a partner in the summer of 2004. On campus, IET has been researching Sakai since early 2004, and will begin a small pilot for selected faculty in the Fall 2005 quarter. The School of Medicine and the School of Veterinary Medicine have developed plans to implement Sakai, and both will conduct pilots this upcoming academic year (Fall and Spring, respectively). There is already collaboration among the two schools and IET with regular meetings and coordination of strategies, and the oversight committee for this collaborative initiative is co-led by the Schools and IET and chaired by Vice Provost Information and Educational Technology, Dr. Peter Yellowlees, MBBS. This Course Management Tool Work Group studied course management tools during Spring Quarter 2005, and

our research and testing have yielded positive results. Considering the state of our current tools and the promise offered by Sakai, we recommend that UCD combine our resources to implement a single campus solution that is sufficiently funded for not only the initial planning and implementation, but also for initial and ongoing training, continuous research and development, and production maintenance and support.

3) The transition and implementation of the new course management tools are critical. We cannot afford to lose more users, or compound the situation with a clientele that is unhappy. Therefore, we recommend that the Vice-Provost for IET, or his designate, report back to CCFIT regularly, starting later this Fall, on the development of the next generation of course management tools for the campus. The Council will be interested in status reports on development efforts (particularly as they relate to the critical elements outlined below), implementation and migration plans, as well as lessons learned from the pilots conducted by the two Schools and IET.

## **CRITICAL COMPONENTS**

The following details what the committee felt were the critical components of the course management tool system and how it should function.

## **GENERAL COMMENTS**

The current system is much too slow to be convenient or widely adopted.

The system needs to be intuitive and consistent, able to be used incrementally, and be designed to bring in users by rewarding them with early success rather than complicated time-consuming failures.

There should be incentives for faculty to adopt these tools and encourage more effective use of the system. Faculty should be encouraged and supported in the development and delivery of courses and education projects that take advantage of the technology of the future.

We emphasize that software for course management tools should have at least two uses beyond the traditional uses in UC Davis classes. First, groups can use course management tools for training, such as the Library, Staff Development, Extension, The Teaching Resource Center or Teaching Assistant training. Second, course management tools might be better named 'Teaching and Resource Management' software because they can be used to organize research projects, conduct committee meetings, communicate among colleagues, etc.

## **SPECIFIC REQUIREMENTS**

The new course management tool system must, at a minimum supply what is currently available on MyUCDavis

### **1) Website builder**

The new system should maintain the easy to use aspect of this tool, including the ability to restrict access to enrolled students and selectively release information. However, it should also allow more flexibility with the site, allowing editing and design of the course web site. It is also necessary to remove the restriction that only a course has a web site. It should be allowed that student or faculty groups could set up web sites to facilitate learning. For example, a department could have a course web site that is maintained over a set of years, posting syllabus, reading, sample questions, exams associated with the course. The current module of Sakai exceeds

these requirements.

#### 2) Gradebook

This is a critical component. The current version has many strengths and features that make it attractive for use. Problems still exist, in joining sections, digital drop-off and return. The current Gradebook module of Sakai developed at UC Berkeley, likely to improve on our current implementation of this tool.

#### 3) Communication

The current system is a good start, allowing student-to-student and student-to-faculty communication. The interface is limited and open only to members of the campus community. It should be possible to split students into groups for discussion and facilitate group work, something not possible in the current system. These features are under development for Sakai.

#### 4) Quizbuilder

The new system must be better. It is critical that the number of users allowed at one time be increased beyond the current limit of 35, and that difficulties with editing, feedback and sharing must be solved. It should be possible to have this tool serve the needs of the students for self-assessment of progress in their classes, as well as the more standard quiz features. Recent demonstrations of the Sakai tool, Samigo, which will soon be released, show great progress in this area.

### **NEW FEATURES**

The committee felt that several new features would greatly enhance this core set of course management tools.

#### 1) Library Resource Interface and Linking Module

UC Davis faculty and students appreciate the ease of access to full-text materials and digital images now possible on class websites developed using course management tools. By using Sakai's "Twin Peaks" module, a tool for creating and managing links and documents, faculty can extend access to published materials in addition to documents created by faculty themselves. Sakai's interface and linking module facilitates searching the university catalog or licensed databases, selecting a citation and linking the full-text of the item to the class web page using a persistent URL.

While the ability to acquire full-text articles and creating links to the full-text on a faculty member's course web page currently exists at UC Davis by using the California Digital Library's UCe-Links OpenURL infrastructure, the module being developed within Sakai may offer a more coordinated, easier to use, configuration. The committee recommends the early adoption of a library resource interface and linking modules such as Twin Peaks and strongly suggests that its development be coordinated with the existing CDL UCe-Links OpenURL tool for maximum flexibility and options.

#### 2) E-portfolio

This module can be used simply, (e.g. students prepare a resume) or as a life-long learning tool (e.g. UC Davis medical students store and use class materials, clinical records, resumes, writing assignments to demonstrate competency), or as a research tool (e.g. researchers share data and develop experiments). There is some development of this module at the UC Davis Med School, as well as in the Sakai project. E Portfolio module would allow students to track their competency and supply evidence of their attainment of educational goals.

### 3) Integrated course calendar

Each course would be allowed a detailed calendar, showing assignments, exam dates, and project information and deadlines. This could then be integrated (uploaded) into a student calendar that collates information from all the student courses. Some of this functionality exists under Moodle. Currently there is no Sakai development in this area. It could become a UC Davis contribution.

## **C) CURRENT USAGE OF MyUCDavis**

### **Stats**

Winter Quarter 2005,

6,679 graded classes. This number includes all the 199 / 299 research or TA credit hours.

2,047 Instructors of Record

### **Website Builder**

Primary Function: distribute course materials (documents, announcements, urls, etc.) to students and others.

Usage Winter Quarter 2005:

- 28% of active Instructors used Website Builder (n=572)
- 13.5% of classes used Website Builder (n=902)

Evaluation:

Strengths: Basic functioning works well and is easy to use. Excellent ease of restricting to enrolled students.

Weaknesses: very limited formatting. Hard to direct non-students to course material as there are no direct URLs to class information.

### **Gradebook**

Primary Function: track assignments, release scores to students, submit final grades

Usage Winter Quarter 2005:

- 40% of courses used a Gradebook as part of the class (n=2,662)
- 22% used the Gradebook to submit final grades (n=1,474)

Evaluation:

Strengths: Very full featured, very flexible, very appreciated by students

Weaknesses: Joining class sections should not be an all-or-nothing choice; should be able to view sections as joined and unjoined. Digital drop-box should allow for downloading all student assignments at once, and should allow for uploading comments back to students. It is not easy to track attendance with this tool.

### **Communication Tools**

Primary Function: allow faculty-to-student, faculty-to-group, and student-to-student communication through email listservs, threaded discussion boards, and chat rooms

Usage Winter Quarter 2005:

- 18% of Instructors accessed the Communication Tools (n=370)

Evaluation:

Strengths: Allows student-to-student communication, automatically generates transcript of sessions, listserv is very effective way to communicate to all enrolled students

Weaknesses: limited interface, inability to create sub-groups within a class, low effective use of bulletin

boards and chat rooms

### **QuizBuilder**

Primary Function: learning assessment through online and printed quizzes. Surveys.

Cumulative Usage through Winter Quarter 2005:

- 242 Instructors have created items (cumulative use, through Winter 2005)
- 5,935 Multiple Choice questions
- 1,007 Paragraph questions
- 8,259 students have taken 62,370 online quizzes.

Evaluation:

Strengths: Item database allows creation of both online quizzes and paper exams. Detailed item statistics and analysis. Faculty can 'share' quizzes and items.

Weakness: limited to 35 users at one time. Item feedback automatically shows the student the feedback for all the answers; an instructor should be able to just release the feedback for the selected answer.

Unable to edit or delete quizzes or items once a student has taken them. As the items are individual specific, not course specific, this results in a large build-up of useless items that cannot be purged. No ability to 'reset' a student's quiz attempt. Feedback indicates that gains in adopting this tool are greatly offset by the difficulties of using it.

All tools suffered because of bandwidth limitations – the slow speed that these sites are served at is a serious impediment to the process of learning how to use these tools.