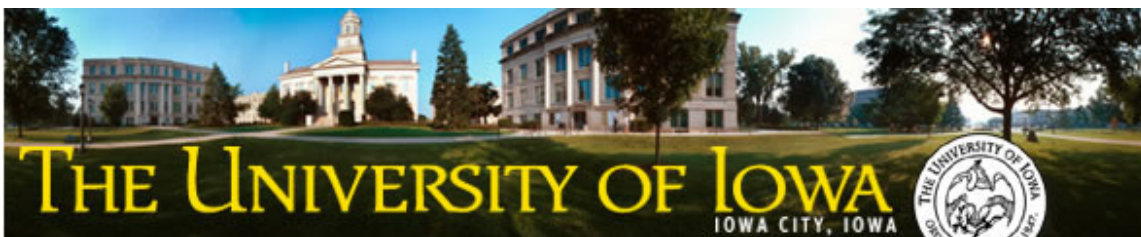
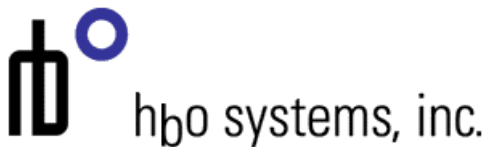

CMS Data Analysis

Data Reporting on CMS Usage at the University of Iowa

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in cooperation with HBO Systems, Inc, www.hbosystems.com



By: the University of Iowa E-Learning Core Group

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Introduction

The goal of the E-Learning Assessment project this semester is to assess the current state of e-learning at the University of Iowa. One of the key conclusions from the July meeting of the core group was that we needed to study and document the current usage and perceived needs of e-learning on this campus. Without this basis of understanding, it will be difficult to come up with an effective strategy for how Iowa should be using e-learning in the future.

Our goal is to move beyond simply “which CMS do we use/support” to examining and understanding all the processes associated with electronic learning — creating, preparing, teaching and taking a course with electronic components.

Objectives

- Assess how University of Iowa instructors currently use technology to support teaching and learning.
- Assess how instructors and colleges envision using instructional technologies in the future

The assessment has been broken up into several parts:

- interview campus Deans, administration and IT leaders to understand where the business and academic drivers are, from both a University viewpoint and a collegiate viewpoint
- document usage patterns to visually model how e-learning is used
- collect and analyze data using current system tools and available data logs
- conduct focus groups for faculty and teaching assistants, to engage them in first-hand conversation and input on ‘what do we do’, ‘how do we do’ and ‘what should we be doing,’ and ‘what are the greatest barriers to IT usage in e-learning’

Scope of this report

This report presents a summary of the data collected and reported by ITS Academic Technologies, on Course Management System (CMS) usage at the University of Iowa.

Data Summary

Estimating CMS usage at The University of Iowa is a surprisingly difficult task. Some methods will systematically *over* estimate usage. For example, a simple count of the number of courses within a CMS system will include courses that are being used in the current semester, courses that were created in earlier semesters, and courses that were created in the current semester, but never used. Other methods will systematically *under* estimate usage. For example, counting only courses created in a given time period will miss courses that are being “re-used.”

The best method available at this time falls into the category of “under estimators.” Many course administrators at The University of Iowa use the locally developed automatic student registration system to populate their courses. Because it would be very rare to populate a course and then not use it at all, counting uses of the automatic registration system would be unlikely to over estimate usage. On the other hand, because there are other ways to populate a CMS course, an unknown number of active courses will not be counted. The extent to which this method underestimates usage is likely to be uneven from college to college (e.g., because of the availability of staff members to manually register students) and between the two CMS systems. Therefore, we are unable to compare CMS usage among the colleges or between the systems.

We can, however, with moderate confidence, establish a minimum estimate of the usage of CMS at The University of Iowa. By counting uses of the automatic student registration system, we conclude that, in the Fall of 2003, *more than* two-thirds of students at The University of Iowa were enrolled in at least one course using CMS and that *more than* one-sixth of course sections at The University of Iowa used CMS to support the course.

Data Collection Methodology

In attempting to solve the problem of determining the overall use of CMS’s on campus we decided to take a look at student enrollment numbers for a particular semester. This would give a good indication of a minimum number of active courses and the number of students in each course. The most practical way to get at enrollment was to use CMSReg, which is an automatic registration script written by ITS. It was assumed that this tool was the primary mechanism for enrolling most students into courses in a CMS because it is the only tool that enables account creation for instructors. CMSReg provides several tools for getting students into a particular course including getting an entire classlist from the registrar. Within this set of functions, the only function that had technically reliable data on is the Entire Classlist process, although there are limitations of using this process, as noted above.

How Courses and Users were Counted

Each valid class list request contains the following information:

- The UI course number and optional section number which is used to get a list of students from the registrar. If the section number is omitted, then students from all sections are placed in the CMS course.
- A CMS course number indicating the CMS course into which the students are to be placed.
- The email address of the course’s instructor.

- The list of students known to the registrar as being in the course at the time when the file was generated.

Each centrally-supported CMS (Blackboard and WebCT) has its own set of class list data files. Using the entire class list data files for both CMS's, from the last day to add on, we totaled the number of students in at least one CMS (making sure not to count duplicates). We counted sections that use a CMS using both the data in the entire class list files and, when section numbers were not provided, by using the file provided by the registrar to determine the number of sections in the course. In this way we counted the courses impacted (again avoiding counting duplicates). Finally we used CMS course ID's to total the number of CMS courses that were currently active, avoiding any duplicates. Finally we used the data provided by the registrar to group section and student counts into colleges.

Weaknesses in the Methodology

At the time we were creating this methodology we were aware of several weaknesses. First it was clear that using Entire Classlist registration data for a single semester would miss quite a range of courses including courses that allow self registration, courses where the students were added through other tools in CMSReg, courses that were running longer than a single semester. It would also not count activity in continuing education courses or any courses that allow self registration. We later learned that there were also a number of courses where students were added through the CMS's own interface and that CMSReg would have absolutely no record of these transactions. It is also the case that the number of students added to courses in this manner varied a great deal from college to college. This made the college by college comparisons of use worthless because a college could have up to 50% of its courses adding students outside the CMSReg system. So, we have ended up with totals that are low, probably quite low but represent a known minimum number of active courses and student accounts.

Recommendations for Future Data Analysis

Given our current set of software tools and our current administrative policies, we cannot objectively produce repeatable, reliable data. By a combination of software tool and administrative policy change, we need to address the following two issues.

- 1) Making a connection between a CMS course and the corresponding University section. There needs to be tighter integration with CMS's and the registrar's system for this problem to be solved.

Part of the challenge is to accurately determine which CMS system is being used, as there are several systems which do not use ITS scripts for registration, and have no known component managed by a central system.

- 2) Determining which courses are active. If we can tell when students are accessing courses (and which courses they're accessing) then we're in pretty good shape. This data is not currently available from our existing CMS's.

Summary

Given the current deployment of multiple CMS's at the University of Iowa, with no associated policy for how to register students, it is very difficult, if not impossible, to accurately determine CMS usage on a per college basis. The data that was analyzed provides a realistic set of minimum usage for the entire University, and only for the two centrally-supported CMS's.