Evaluating the Health of the Implementation of Your Course Management System: The "Vital Signs" Approach

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Why Are We Not Studying CMS Integration in Higher Education?

Over 95% of colleges and universities use some form of e-learning system (Pollack, 2003), usually an expensive course management system. It is surprising, then, how few research and evaluation studies have been done to consider the impact from using these technologies, and how they affect pedagogical styles, the teacher/student relationship, and other outcomes on an institutional level. Those studies that have been done are usually small, "convenience studies" of one or two classes. In fall of 2005, I conducted the following audit of the available literature:

- Databases searched: ERIC, Education Full Text, WebSPIRS, PsychInfo and Ingenta
- Terms: course management systems, Blackboard, WebCT, Moodle, CMS, and other similar terms in the abstracts.
- Found: 164 articles, with 74 appearing to be data-driven research articles.
- However, most of these were quick evaluations of how a CMS impacted a particular class, context, or professor.
- Less than 10 studies, that we could find, seemed to attempt a more general evaluation of the impact from using a CMS over multiple contexts, such as multiple university departments.

It appears we still do not understand a whole lot of what is happening from the widespread adoption of CMS tools. There are still many opportunities to research the large-scale impacts from the most widespread integration of a single technology since word processing and the Internet.

Context for this Evaluation

- Place: Brigham Young University, Provo, Utah
- Enrollment: 30,000 (8,000 courses)
- Blackboard courses created each semester: 4,000
- Evaluation carried out during 2004-2005 school year.
- Goals: To create a sustainable evaluation model for monitoring the impacts from using a CMS on campus; a model for finding information to the most critical questions on campus about the use of a CMS.
- Considerations: At one time, commercial CMS products were relatively affordable. However, in recent years Blackboard and WebCT have both raised their prices dramatically. Like many colleges and universities, BYU must now consider whether to continue paying for a commercial CMS or make the difficult transition towards supporting a different tool.

Vital Signs Evaluation Process (Developed by Greg Waddoups)

- Like medical vital signs, attributes indicating a healthy implementation of an educational technology can be used to guide evaluation efforts.
- Key stakeholders should determine these "vital sign," so their questions are not left unanswered.
- Regular semester surveys, administered to random samples of students and faculty, can gauge the "pulse" of the effects from using the technology.
- If the survey results are low for any of the vital signs, then more in-depth analysis can be made through collecting and analyzing more data.
- The effort is spent on analyzing data about the areas of greatest concern so that prescriptive strategies can be created more quickly.
- Evaluation is scalable. Surveys can be easily administered & analyzed each semester. More expensive methods are only needed when there are questions about a low "vital sign."

Example of a Vital Signs Evaluation

In fall of 2004, BYU implemented the Vital Signs evaluation strategy. After discussions with the university stakeholders, it was determined that the following issues were of the highest interest to stakeholders. These became our vital signs when considering our implementation of Blackboard:

1. Student and instructor **satisfaction**
2. Instructor **knowledge** of the tool and its features
3. Student and instructor **usage** of the tool
4. Student **learning** outcomes
5. Student and instructor **efficiency** in their work because of the tool
6. Technical **stability** of the tool

After conducting semester surveys (*n*=124 instructors; 163 students), the following grades (pass, fail, or flagged as an area of concern) were determined for the individual vital signs:

These findings led us to look at the issues of stability, knowledge, usage, and learning more closely. To conduct this deeper evaluation, we interviewed instructors (*n*=33), conducted brief intercept interviews of students (*n*=17), and reviewed the support center call log for information on what kinds of stability issues had been reported (*n*=1,341). Discussing the findings of this subsequent evaluation is not the purpose of this presentation, as I am focusing more on the evaluation methodology. However, if you email me at rickwest@uga.edu, I can send you two papers that we produced from the findings of this project. One was recently published in *ETR&D* and the other is under review.

Metaevaluation: How Well Did This Methodology Serve Our Needs?

In this particular case, the approach did not serve as well as hoped because four of the six vital signs were initially reported as concerning, so a more in-depth evaluation was needed anyway. However, the vital signs approach helped us gain a deeper understanding of issues important to our stakeholders and allowed us to set a system in place for scalable evaluations in the future. It also provided goals for Blackboard administrators so they could try and improve outcomes in the areas flagged as concerns.