

COMPREHENSIVE ANALYSIS OF EXISTING LEARNING MANAGEMENT SYSTEMS (LMSs)

Status: accepted may 22.

Name of institution	Comprehensive College in Akureyri
Type of institution:	Vocational College with a distance education department
Address:	
Telephone	
Fax	
Email	
URL	http://www.vma.is
Name of training manager:(Optional)	Guðjón Ólafsson gauri@vma.is
LMS used	WebCT, version 2 and 3
URL of LMS	No other systems have been used.
Language of LMS	The interviewee translated version 2 of WebCT into Icelandic. Version 3 is not available in Icelandic.
Number of years in use	4 years
Other LMSs used	None
Number of students in the system	The distance education department has 750 students. All of them are studying online. The distance education department has only online courses.
Number of courses available	Altogether the college had 180 distance education courses last semester. About 10-20 courses use WebCT. The other online courses apply open web-pages and e-mail. Why do you only use WebCT in 10-20 of your 180 courses? This has mostly to do with the difficulty of getting teachers to experiment with new things. They are a conservative lot and not readily moved. I have hopes for an expansion in WebCT courses next winter.
Typical duration	The courses follow the college semester
Number of tutors in the system	The distance education department has 95 tutors. Most of them are part time teachers. They could be full time employees at the college or elsewhere.

This analysis is divided into six parts.

1 Course development tools

2 Student support tools

3 Tutor support tools

4 Administration (student database and records)

5 Technology (quality of software)

6 Price

1 Course development tools

1.1 *Course creation.* How satisfactory was the LMS for course creation?

1.2 *Structure and didactic flexibility - openness.* In the creation of course materials did the LMS permit didactic flexibility? Was the structure open to differing didactic possibilities?

1.3 *Teacher userfriendliness.* How easy was the LMS to use by teachers and course developers?

The individual teachers develop the courses. The teachers first find WebCT difficult, after a while they find it flexible and easy. In most cases they are very happy with WebCT. Basically they develop text and graphical content, with little use of multimedia elements.

1.4 *Support for graphics, audio and video, moving image.* Did the LMS support the provision of graphical materials, moving images, audio and video in the course content?

We don't use much multimedia content. External tools are needed for development of multimedia content.

1.5 *Questioning, assessment, assignments.* What provision was made by the LMS for student questioning and assessment and the design of student assignments?

An assignment tool in WebCT allows five different types of tests. Multiple choice tests is one example. These tests are very useful.

2 Student support tools

2.1 *Interactivity possibilities.* What provision does the LMS make for student interaction?

WebCT supports four types of communication: Mail, conferences, chatting and whiteboard. We have used all four types and found that mail and conferences are most useful for our usage.

2.2 *Online student-to-student communication (synchronous and asynchronous).* What facilities does the LMS provide for student communication to other students and how successful is it? Is both synchronous and asynchronous communication between students supported?

The conferences are easy to use. Chat has not been used much because it requires students to be online at certain hours. No one has found whiteboard especially useful. The discussion in forums seems to work well in many courses. The students find forums easy to use and express themselves.

2.3 *Online student to tutor/institution communication (synchronous and asynchronous).* What facilities does the LMS provide for student communication to the tutor ion to the institution's administration and how successful is it? Is both synchronous and asynchronous communication supported? Are these support services available 24 hours a day?

2.4 *Resources, library, references.* What facilities does the LMS provide for student acquisition of resources required by the course, especially library resources and references to required readings?

2.5 *Feedback on work and assignments.* What is the quality of provision of feedback to students on their work and assignments?

A table of student grades is available in the WebCT database.

A typical assignment could be an essay that the student attaches to an e-mail as a word document. The teacher grades it and returns it via e-mail. Most assignments are done individually and graded by the tutor. In some courses, tutors form small groups of students that receive collaborative assignments.

3 Tutor Support tools

3.1 *Tracking students - database questions.* How user friendly is the LMS for tutors wishing to track their group(s) of students and retrieve data from the student database?

The tutor can access information and statistics about individual students' use of WebCT and their course progress.

3.2 *Group management tools.* What facilities are provided by the LMS to the tutors for managing their group(s) of students?

3.3 *Preparation of questions and assignments by tutor.* How successful is the LMS in providing tutors with user friendly and didactically successful tools for the design of student questions and assignments?

3.4 *Course planning for students (monitoring pace).* What tools are provided by the LMS to tutors to enable them to monitor and plan student progress?

3.5 *User-friendly administrative systems between tutor and institution.* What provision does the LMS make for successful tutor to institution communication?

4 Administration (student database and records)

4.1 *Enrolment procedures and fee paying.* What facilities does the LMS provide for student enrolments, course allocations and payment of fees?

Our distance education students pay tuition fees, which is about 4500 Icelandic kroner per unit. Typical courses could be one, two, or three units. (30-40 units is equivalent to one year full-time study). Web CT does not provide any support for administration of fees. Our economy system (BAR) is provided by the ministry of finance. There is no integration between BAR and WebCT.

4.2 *Passwords and security.* How successfully does the LMS handle student access to the system and the security of all student interactions with the system?

If students forget their password, they have to contact the system manager who changes the password manually.

4.3 Student records database. How successful is the system's student database, especially for data storage and data retrieval.

Up till now, we have used a student management named AXEL, which was developed in Iceland. Every school had an individual installation of the same system. Now, the ministry of education requires that all schools use a central web-based system called INNA (www.inna.is) A company called SKYRR (www.skyrr.is) has developed INNA for the ministry of education.

Neither AXEL, nor INNA has any integration to WebCT and I cannot see that WebCT will be integrated with INNA in the future either.

We have not any experiences with e-learning standards, and we are not paying much interest in standardization of e-learning. Copyright issues, however, often comes up as an issue for discussion.

4.4 Examination and certification records. What structures are provided for recording of data and results leading to examination and certification?

In the fall of 2002, INNA will provide a web-based student interface that allows students to access personal information such as for example their exam grades. INNA is not integrated with WebCT

4.5 Course, class and tutors database. What facilities are provided for administration of courses, classes and tutors?

5 Technology (quality of software)

5.1 Server - hardware and software options. What is the quality of server hardware and software options? How is the system integrated with existing software?

In the beginning we run the WebCT server ourselves. Now the university of Iceland in Reykjavik runs the server. This works very well. The stability is good and our local manager can do the necessary work online from here.

I handle the technical support for our users. I allow the students to call 24 hours a day, 365 days a year. This only results in one or two calls per month.

5.2 Client - hardware and software options. What is the quality of client hardware and software options? Does the system permit metatagging?

WebCT does not require any client software except from a standard web-browser.

5.3 Flexibility of didactic structure; updating, adaptability. Is the didactic structure flexible or is it determined by the technology? How adaptable is the technology to updates and to new technology that becomes available to the market?

5.4 *Limitation of size (number of students, courses, tutors..)* How satisfactory is the LMS for handling varying numbers of students, courses, and tutors? How does it cope with 100, 1000, or 10000 students and large course databases?

5.5 *Speed of system.* How is the speed of the system and student satisfaction? How does it cope with downloading courses and high bandwidth materials?

Students have all kinds of connections, ranging from modems to ADSL. We are not using much multimedia content, so we have no problems with bandwidth limitations.

6 Price

6.1 *Cost of the LMS (Learning Management System).* What is the cost of the LMS to the institution?

I don't know how much we pay to the University of Iceland for the use of WebCT and their server services. The university of Iceland pays WebCT.

6.2 *Annual fee.* What fees have to be paid annually for the system by the institution?

6.3 *Student Enrolment fee (100 students, 1000 students, 10000 students.)* How do fees to use the LMS vary when the student base is 100 students, 1000 students, 10000 students? Is online invoicing available?

6.4 *Maintenance costs: staff involved in management, IT specialists, trainers, etc* What is the maintenance cost to the institution of the LMS and what staff resources are needed to maintain it and keep it functioning?

6.5 *Training of teachers and learners and system users.* What costs are involved in staff and student training to use the LMS system?

The tutors who develop the courses have so far done this for free. But in the future we will have to pay them.

To teach the courses they get a certain payment per student per course. The payment formula also takes into consideration if they have taught the course before. The wage is considered to be good and the teachers are happy with it.

Conclusion: Overall evaluation:

The most positive with WebCT is that it is easy to access it and to use it. You don't need any special client software. WebCT works all the time and is very stable. I'm very happy to use it. I haven't seen anything I really dislike. We will probably continue to use WebCT in the future.

If I have to be critical, I feel that it could be hard to get the support we need for local adaptation with the American company. For example, we have not been able to get an Icelandic language version of version 3.

What features would you like to see included in this LMS in the future?

Most teachers want to have an Icelandic interface. WebCT itself does not promote translations. We translated version 2 to Icelandic, but that translation cannot be used in version 3.

A problem that is more related to the web than to WebCT itself is the problem of writing mathematic formulas. Without better ways of writing these formulas, it is hard to teach mathematics and chemistry online.