

Project Title: Development of a Web Services Interface to Populate a Campus Learning Object Repository from WebCT Vista.

Project Category: Strategic Initiative Grant

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Campuses and Disciplines: University of Massachusetts – Worcester
University of Massachusetts – Amherst
University of Massachusetts – Boston
University of Massachusetts – Dartmouth
University of Massachusetts – Lowell
University of Massachusetts – UMassOnline

Amount of Funds Requested: \$25,000.00

Project Summary: The University of Massachusetts uses WebCT Vista as its enterprise course management system. This environment is heavily utilized for both on-campus and continuing education courses. For students, access to the learning objects developed in WebCT is lost when a course closes. Students in graduate studies, health profession studies and others often need to refer back to the course content to prepare for thesis qualifying exams, board certifications or other academic requirements. The purpose of this grant is to create an object repository application which will utilize the content from WebCT to populate a campus learning object repository. The project includes a technical and administrative component. The technical component is to develop an object repository application. The administrative component is to create a multi-campus team to develop policies and procedures to address issues such as intellectual property, usage guidelines. And a strategy for subject headings, name authority and metadata.

The object repository application will be developed using the Blackboard/WebCT PowerLinks SDK. Specifically, we will use PowerLinks web services to access and manipulate content in the WebCT Vista File Manager tool. This will enable automated download of content to a local file system (repository). This approach automates the process for faculty. The repository will allow authorized users to “Google” or search across all courses—across an entire curriculum—while preserving the integrity of the classroom roster and grade book of WebCT. The application will be available for all campuses to use to create local repositories with campus specific guidelines for use.

Signatures:

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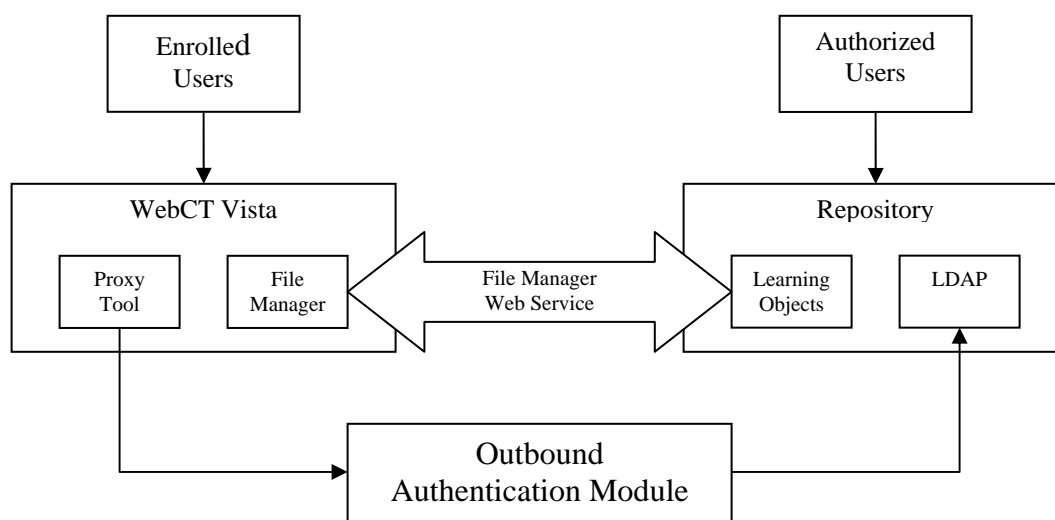
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PROJECT NARRATIVE

A learning object repository is a collection of digital resources which enables sharing, managing and use of the educational objects contained in a collection. Many repositories require the use of a standard metadata scheme to facilitate searching and effective use. Learning Object Repositories are often an integrated component of a course or learning management system. The purpose of this grant is to create an object repository application which will use BlackBoard PowerLink web services to programmatically download content from the WebCT Vista Course Management System file manager to populate the library collection.



The value of programmatically duplicating learning objects in the LMS and a repository is significant. The repository will allow users to “Google” or search across all courses—across an entire curriculum—while retaining the integrity of the classroom roster and grade-book. From the learner perspective it will allow content review long after the course has been completed. For example show me every instance of “neurotransmitter” in the university’s collection of learning objects. In a time on task manner, the learner retrieves an inventory of links that facilitates study, review, and the creation of connections from course to course. From the teaching perspective an instructor can see where in the curriculum a topic is covered and how it is treated. The academic community has access to the most recent updated learning objects.

At the University of Massachusetts Medical School the need to access content after a course has ended is critical—studying for a cumulative board or qualifying exam requires review of years of course material. Medical curriculum by definition and practice is a continuum where medical and nursing students synthesize basic science and clinical knowledge to successfully treat a patient. WebCT does not allow for this type of

review—searching is possible from within a course and only while a course remains active.

Current learning object repositories require that faculty populate duplicate systems with content. Faculty time is increasingly limited so many do not participate in repository initiatives. Students access learning objects in the LMS while enrolled in a course. Unless a student consciously downloads the learning objects, or the campus maintains multiple instances of a course, student access to a needed learning object is lost when the course ends. This is a serious impediment. The Blackboard Learning Object Manager is designed to make distribution of learning objects to multiple WebCT course sections more efficient. This does not address the need for student access. Faculty would still need to use two applications and students would still lose access when a course closes. A learning object repository built off of the File Manager of the online WebCT course environment would provide searchable access to the current uploaded learning objects—PDF, PowerPoint, HTML, Word, Excel, Image and Media file.

The repository will make learning objects more accessible and minimize faculty effort required. We also need to address issues of copyright, intellectual property and cataloguing. We will organize a representative five campus UMass working group to develop guidelines to address these issues. Participation by librarians will be critical to add subject headings, provide name authority and ensure that metadata adheres to national standards. Participation by faculty will be critical to develop publishing guideline. The work of organizations such as Creative Commons provides the needed framework. Creative Commons is a Massachusetts nonprofit organization that provides free tools allowing authors, scientists, artists, and educators to easily mark their creative work with the freedoms they want it to carry. They make it easy for authors to change their copyright terms from "All Rights Reserved" to "Some Rights Reserved."

Combined, we have new learning technology with powerful functionality for both the learner and the educator. This project is a strategic initiative that will lead to the development of a learning object application and practice guidelines that will be available for all campuses to use. It allows for more efficient use of faculty time. It provides authorized access to learning objects for faculty and students throughout their tenure at UMass facilitating an integrated competency based approach to teaching and learning. It will facilitate efficient access for academic administrators to an entire curriculum using common search tools. It will better position the UMass system for migration to future learning management systems as they are developed. The completed interface could be licensed to other WebCT Vista users or other LMS vendors interested in developing an export utility from WebCT Vista.

This project will be led by the Worcester Campus with input from all the UMass campuses. The programming resource will be contracted. Other resources will be provided internally.

PROJECT DELIVERABLE

This project's deliverables are:

Administrative:

Organize a UMass system working group to:

- Develop guidelines for integration of “Creative Commons” options to address copyright and intellectual property issues
- Develop guidelines for addition of subject headings, provide name authority and ensure that metadata adheres to national standards.

Technical:

A development team led by UMass-Worcester will:

- Develop a WebCT PowerLink web services interface.
- Populate a campus-based searchable Learning Object Repository
- Publish technical documentation.

DISSEMINATION OF PROJECT RESULTS

Status reports will be delivered to the Subcommittee on Academic Technology as required. We plan to present the outcomes of this project at relevant academic conferences such as UMass Instructional Technology Conference, WebCT User Conference, and Educause. The application will be freely available to all UMass campuses.

The application will be available for all campuses to use. The requirement for a campus will be a suitable network file store.

PROJECT BUDGET

The funding will be used to hire a Senior Java/Web Services developer. Other project resources and disk space for the learning object repository will be provided by the Academic Computing division of the UMW Information Services department.

Project Manager	UMW in kind
Instructional Technology Analyst	UMW in kind
Catalog Librarian	UMW in kind
Java/Web Services Developer	\$25,000

PROJECT TIMETABLE

- Organization of the Learning Object Repository (LOR) Working Group, June 2007
- Documentation of LOR requirements, July-August 2007
- Development of LOR guidelines August 2007 – April 2007
- Recruit developer August 2007

- Development, testing and implementation of web services LOR application August 2007-February 2007
- Populate LOR March 2008
- Analysis and publication of reports April-May 2008

REFERENCES:

BlackBoard PowerLinks Kit Programmer's Guide SDK version 4.0.0

WebCT® Vista® Content Interoperability Specification

Creative Commons: <http://www.creativecommons.org/>

Learning Object: http://en.wikipedia.org/wiki/Learning_object

PRINCIPAL INVESTIGATOR, PARTICIPANTS AND QUALIFICATIONS

Ralph J. Zottola, PhD is the Associate Chief Information Officer of Academic Computing in Information Services and Instructor of Biochemistry and Molecular Pharmacology at the University of Massachusetts Medical School (UMassMed). In Information Services, he is directly responsible for Instructional Technology, Research Computing and Internet Publishing. He has been an active participant in UMassOnline related activities since its inception and has led the adoption of learning management systems at the medical school.

Lyn Riza, MS is Manager of Instructional Technology Information Services and Instructor of Family Medicine and Community Health at the UMass Medical School. As the Instructional Technology manager Riza's expertise is meshing technology with pedagogy; she is directly responsible for administering the Learning Management System WebCT Vista for all online course offerings for each of the UMassMed schools—Graduate School of Biomedical Sciences, Graduate School of Nursing, Graduate Medical Education, School of Medicine and Continuing Education.

Elaine Martin, MSLS, DA, Director of Library Services and Assistant Professor of Family Medicine and Community Health, UMass Medical School is responsible for leading and administering the Lamar Soutter Library, which not only serves the medical school community but also serves as the Regional Medical Library for all six New England states under contract from the National Library of Medicine. She has served as principal investigator for numerous grants and subcontracts and has a proven track record of success in project management.

Brian Douglas, M.Ed. is Chief Technology Officer and Director of Operations for UMassOnline. He oversees the development of the technology platform and the business administration. Prior to joining UMassOnline, Mr. Douglas worked for a

number of non-profit organizations in Washington, DC, including the National Association of College and University Business Officers (NACUBO.) While at NACUBO, Mr. Douglas administered several research projects in higher education budget and finance, including a national benchmarking program and an annual comparative financial statistics study. Throughout his career, Mr. Douglas has sought to bring new technologies into the existing activities of organizations. Whether it was new database tools, CD-ROMs, or the Internet, advancing technology has been a focus of his efforts to enhance the effectiveness and reach of organizations.