

Creating Educational Object Repositories: The CAREO Project

-- Tim Buell, Learning Commons

Last year, the University of Alberta and the University of Calgary began a collaborative project to establish the CAREO project (Campus Alberta Repository of Educational Objects). The project's co-directors are Tim Buell, UofC, and Terry Anderson, University of Alberta. Here is some background and an update on the CAREO project.

We created the CAREO project to:

1. Establish an on-line repository of educational objects for post-secondary educators; and,
2. Establish and support a professional development community that both creates, reviews and utilizes these objects through ongoing professional development activities.

'Educational objects' can be defined as any digital entity with a demonstrated pedagogical value, which can be used, re-used or referenced during technology supported learning. A definition of educational objects has also been provided the Learning Technology Standards Committee (LTSC) of the IEEE. They define an object as 'any entity, digital or non-digital, which can be used, re-used or referenced during technology supported learning.' The LTSC provides examples of these objects, including 'multimedia content, instructional content, learning objectives, instructional software and software tools, and persons, organizations, or events referenced during technology supported learning'.

The idea of an educational object repository is not particularly new: there are several U.S. and international initiatives that have been in existence for some time now, such as the Educational Object Economy (see <http://eoe.apple.com>); and the MERLOT project (see www.merlot.org). The repository initiatives are also closely related to the numerous digital library projects being developed worldwide.

We adopted two guiding concepts in the implementation of CAREO: 1) to build on existing initiatives (and not re-invent the wheel), and 2) to partner with similar initiatives both nationally and internationally. This has allowed us to get maximum leverage of our start-up funding provided through the Learning Enhancement Envelope (LEE). Two of the principal partnerships developed by CAREO are:

1. Membership in the MERLOT consortium and peer review MERLOT (Multimedia Educational Resources for Learning and On-line Teaching) is an organization made up of leading higher education systems, consortia, and institutions. MERLOT provides high quality digital learning materials to faculty members who are using the world wide Web for both traditional and distance learning courses. It is a 'gateway' to modularized learning materials that faculty can incorporate into their own courses. Learning materials posted in MERLOT are primarily interactive simulations, animations, and tutorials that will be peer-reviewed and tested in appropriate educational settings. MERLOT's mission is to improve the effectiveness of teaching and learning by expanding the quantity and quality of peer-reviewed on-line learning materials that can be easily incorporated into faculty designed courses.
2. Peer review of catalogued materials is an essential element of the MERLOT project. CAREO and MERLOT provide a mechanism for professional recognition for faculty engaged in developing educational objects. "We finally have a way of recognizing faculty efforts and contributions other than by counting journal articles," says Cathy Swift, Professor, Marketing and Director for Global Business, Georgia Southern University and MERLOT Business Discipline Team Co-Leader.

The MERLOT project has established peer review teams of faculty who have demonstrated: expertise in their discipline; excellence in teaching; experience in using technology in teaching and learning; connections with their discipline's professional organizations. CAREO was recently selected by MERLOT to provide faculty development leadership in several disciplines. The following faculty members have been named to MERLOT peer review teams: health sciences, (Richard Hannah, medicine, UofC), information technology (Mike Szabo, UofA), history/archeology

(Jeff McCaffrey, archeology, UofC), modern languages (Martin Beaudoin, UofA), teacher training (William Hunter, UofC), music (Tim Buell, UofC), physics (Dave Austin, UofA), and chemistry (Ed Blackburn, UofA). CAREO was also selected to lead the peer review teams in the disciplines of history, archeology and music.

Currently, there are twenty-three organizations (including CAREO) participating in MERLOT during 2000-2001. Many of the participating 'organizations' include state-wide university systems (for example, the California State University system is a participating organization). Collectively, this means that MERLOT includes over 1,300 post secondary institutions, over 300,000 faculty and over 6.5 million students. CAREO now has its own portal which resides on the MERLOT main site.

Canarie and the BELLE Project

CAREO has also been selected to provide the educational object repository component for the Industry Canada Canarie-funded BELLE (Broadband Enabled Lifelong Learning Environment). BELLE is a national project designed to offer a searchable database of multimedia content (interactive and virtual environments, data sets, video, images, audio, text and applications) for use by adult learners and educators across the country. Learners will have access, for the first time, to a well-structured common portal offering peer-reviewed stores of data-intensive content, which can be searched and delivered into prototype learning environments connected to Canada's national and regional advanced Internets. Using bandwidth to increase quality of service, BELLE will implement and test a conceptual architecture for tagging learning objects and making them available via a national broadband test bed for multimedia serving.

Recently, members of the CAREO team (Tim Buell, Michael Magee, Norm Freisen and Terry Anderson) met with representatives of other Canarie-funded projects to develop a set of national metadata standards for Canadian object repositories. Basically, 'metadata' simply means one level of description higher. Metadata is therefore data that describes data, and can include information created by humans to describe a resource as well as machine created code which can only be interpreted by other machines. Metadata is crucial to allow users to search for and locate objects in a repository, and to allow searches across different repositories. For a more detailed description of metadata, see the paper by CAREO staff developed Michael Magee at <http://www.careo.org>.

Developing a set of national metadata standards is seen as a crucial step in creating interoperability between different object repositories, and CAREO has assumed a leadership role here. This means that objects in our Campus Alberta Repository can be searched for and be compliant with other repository initiatives, and CAREO will use technical specifications that will be compliant with national and international metadata standards, such as the Dublin Core, the IMS Project, and the IEEE.

The CAREO project currently employs two full-time technical staff, under the direction of Drs. Anderson and Buell. At the UofC, the CAREO project is based in the Learning Commons. The CAREO prototype was demonstrated at the recent Campus Alberta Symposium (October 10 and 11), and can be viewed at: <http://www.careo.org>.

For more information on the CAREO Project, please contact:

Tim Buell, Learning Commons

Phone: 220-3493

E-mail: buell@ucalgary.ca

Back to [Volume 7, No.7 Table of Contents](#).