

Workshop Proposal

Selecting and Evaluating Digital Learning Materials for Higher Education

Joseph G. Tront

Virginia Tech

Brandon Muramatsu

University of California, Berkeley

Flora McMartin

MERLOT/California State University Office of the Chancellor

Jean-Pierre Bayard

California State University at Sacramento

Abstract

Are you trying to integrate simulations, applets, case studies, courseware or other web-based materials into your classes? Where do you go to find these digital learning materials? How do you evaluate the quality of the materials you do find?

This workshop introduces faculty who are interested in integrating digital learning materials in their courses to a set of criteria and methods useful in selecting and evaluating the quality of these materials to help achieve their course goals. The workshop focuses on the different resources, including educational digital libraries, and research on teaching and learning available for faculty to use to locate and select helpful digital learning materials, as well as on how to evaluate those materials.

Participants will be introduced to a general intellectual framework for integrating digital learning materials that stresses identifying the particular learning objectives for the use of particular materials. Participants will be introduced to a number of educational digital libraries to find these resources including NEEDS (www.needs.org) and MERLOT (www.merlot.org). They will have a hands-on opportunity to use these educational digital libraries and become familiar with the features and services that each offers to help its users select and locate materials. Participants will be introduced to two sets of evaluation criteria, those used in the NEEDS *Premier Award for Excellence in Engineering Education Courseware* and the MERLOT peer review process. They will have a hands-on opportunity to apply these criteria to better understand the metrics for quality in digital learning materials, and how to apply these metrics to materials they are considering using to help achieve their course goals.

Learning Objectives

Workshop participants:

- Will be able to apply a general framework for integrating digital learning materials in their course activities that matches their learning objectives for a given activity.
 - Will be able to use educational digital libraries to locate and select digital learning materials for use in their courses.
 - Will understand the breadth and depth of resources available through educational digital libraries, as well as the features each uses to help its users select materials.
 - Will be able to use a set of criteria to evaluate the quality and potential usefulness of a given digital learning resource to meet a particular learning objective.
-
-

Presentation Length

Preferred presentation length is six hours, however, the workshop could be tailored to fit into three hours and still provide major benefits.

Intended Audience

Higher education faculty members from the broad spectrum of university disciplines can benefit from attending this workshop. Faculty teaching science, math, engineering and technology may derive greater benefits since these are areas in which the presenters have been working most recently. The desire to improve teaching and learning through the appropriate use technology is the only prerequisite. Participants should also be willing to partake in the lively discussions that this workshop generally invokes.

Contact Information

Presenters: Joseph G. Tront, Virginia Tech, jgtront@vt.edu, 540-231-5067

Brandon Muramatsu, University of California, Berkeley,
mura@needs.org, 510-643-1817

Jean-Pierre Bayard, California State University at Sacramento,
bayardj@ece.csus.edu, (916) 278-5847

Flora McMartin, MERLOT/California State University Office of the
Chancellor, mcmartin@merlot.org.

Presenter's Qualifications

Dr. Joseph G. Tront is a professor in the Bradley Department of Electrical and Computer Engineering at Virginia Tech. He has had a leadership role in the NSF sponsored engineering education coalition called SUCCEED where he has been the

director of the center for computing and communications for the nine university coalition since 1994. He is a co-editor for NEEDS and is also co-editor for the MERLOT engineering collection. Dr. Tront also serves as co-editor for the *Premier Award for Excellence in Engineering Education* – an international award competition aimed at recognizing outstanding non-commercial courseware for use in engineering education. He has published articles in various venues describing the appropriate use of technology in higher education. He is currently leading a team of about 20 faculty and staff from six universities who are developing technology-based courseware modules to improve teaching and learning. This work is sponsored by the NSF.

Brandon Muramatsu has a leadership role in a number of educational digital library projects. He has been closely involved in the development of NSF's National STEM Education Digital Library program since 1996. He is the Project Director for NEEDS-A Digital Library for Engineering Education (www.needs.org) and SMETE.ORG (www.smete.org). He works with the thirty plus members of the SMETE Open Federation as they develop a digital learning community for science, mathematics, engineering and technology education. Recently he began working with MERLOT (www.merlot.org) as the Director of Organizational Development and Outreach where he develops and maintains institutional partnerships and organizational alliances with the twenty plus institutional partners and growing organizational alliances of the MERLOT collaborative. His research interests include the development of next-generation digital libraries for education and the use and evaluation of technology to enhance learning. He is a lecturer in multimedia at UC Berkeley and directs the Berkeley Instructional Technology Studio, where he consults with faculty and graduate students on the use of technology to enhance learning. He has personally developed and evaluated interactive multimedia learning modules for engineering education. Through NEEDS, he coordinates the *Premier Award for Excellence in Engineering Education*, which recognizes outstanding courseware designed to enhance engineering education. Recently, Mr. Muramatsu helped launch the University of California Teaching and Learning with technology Center (www.uctltc.org), a center without walls showcasing the innovative instructional materials developed at the University of California. Mr. Muramatsu also works with the IEEE Learning Technology Standards Committee in the development of metadata standards for educational digital libraries.

Dr. Flora McMartin is the Member Services and Evaluation Director for MERLOT – the Multimedia Educational Resource for Learning and Online Teaching. She directs the development and implementation of member services, including the implementation of the peer review system. Effective and systematic evaluation of MERLOT's services drives the development, design and redesign of the site. Previous to her MERLOT position, Dr. McMartin served as the Evaluation Director for SMETE.ORG, a digital library for education in the physical sciences and NEEDS – a national digital library for engineering education. Here she directed the development and implementation of studies designed to learn about users' needs as well as how they use smete.org, and ultimately how the site impacts education in the sciences, mathematics, engineering and technology. She has extensive experience in integrating assessment of student learning with faculty

development and making organizational change as well as in directing research examining the impact of computer learning technology on student learning. Currently, Dr. McMartin serves on the Policy Committee for the National STEM Education Digital Library (NSDL), and was the first chair of the NSDL Evaluation standing committee. Prior to her evaluation work with digital libraries and learning technologies, she was the Director of Assessment for the Synthesis Coalition, a coalition of Engineering Educators, served as the Assessment Coordinator for the University of San Francisco (USF), taught in the USF School of Education, and evaluated innovative education projects sponsored by the UC - Berkeley Office of Educational Development. Her research interests include studying the impact of computer mediated learning on student learning and faculty roles, the impact of assessment as a means for developing collaborative faculty workgroups and organizational change related to institutionalization of innovative academic departments and programs. Dr. McMartin received her B.S. in Art and M.S. in Higher Education from Iowa State University, and her doctorate in Education from the University of California at Berkeley.