

InSITE 2007 Doctoral Consortium Abstract: Interoperability Gap Challenges for Learning Object Repositories & Learning Management Systems

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Abstract

An interoperability gap exists between Learning Management Systems (LMS) and Learning Object Repositories (LOR). LORs are responsible for the storage and management of Learning Objects and the associated Learning Object Metadata (LOM). LOR(s) adhere to various LOM standards depending up the requirements established by user groups and LOR administrators. Two common LOM standards found in LORs are CanCore (Canadian LOM standard) and the Sharable Content Object Reference Model (SCORM) Content Aggregation Model (CAM). In contrast, LMSs are independent computer systems that manage and deliver course content to students via a web interface. This research addresses three important issues related to this problem domain: (a) a lack of metadata standards that define the format of how assessment data should be communicated from Learning Management Systems to Learning Object Repositories, (b) a lack of Information Engineering (IE) architectural standards for the transfer of data from Learning Management Systems to Learning Object Repositories, and (c) a lack of middleware that facilitates the movement of the assessment data from the Learning Management Systems to Learning Object Repositories. Thus, the three goals of this research are: (a) make recommendations for extending the CanCore and SCORM CAM LOM standards to facilitate the storage of assessment and summary assessment data, (b) define the foundation for an IE architectural standard based on an Access Control Policy (ACP) and Data Validation Policy (DVP) using a reliable consensus of experts with the Delphi technique, and (c) develop a middleware prototype that transfers learning assessment data from multiple Learning Management Systems into the Learning Object Metadata of Learning Objects that are stored within a CanCore or SCORM compliant Learning Object Repository.

Keywords: Learning Object Metadata, XML, SCORM, CanCore, Learning Object Repository, Learning Object Interoperability, Learning Management System, and Learning Assessment Metadata.

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