Special session: Education Metadata: Reports from the Field
Thursday, 5 October: 13:30-15:30, Manzanillo, Colima, Mexico

Two presentations were made during the time period, and discussion followed each. Following are summaries of both presentation and discussion.

TITLE: LOMtologies - Issues and Challenges in Maintaining Simple LOM-related Vocabularies
PRESENTER: Andy Powell
DESCRIPTION: This presentation will look at the problems of deciding who, in a national context, is best able to 'standardise' and maintain nationally focused e-learning-related vocabularies and whether such standardisation is useful or necessary. The talk is based on UK experiences in trying to develop several simple vocabularies in the context of the UK LOM Core (UK Educational Levels, UK Educational Contexts, the RDN/LTSN Learning Resource Type, etc.) none of which have really found a good maintenance home but all of which are now in real use within nationally funded projects and services such as JORUM (www.jorum.ac.uk).

Andy set the context for his presentation by describing a number of initiatives, including JISC and CETIS, which represents UK colleges and universities on international learning technology standards initiatives. It is the principal channel between the UK community and IMS and IEEE LOM, with a range of community-based SIGs (with virtual and f2f meetings).

MEG (Metadata for Education Group) is an informal group with no special funding. It covers a broader educational range, including schools, and is potentially a useful home for UK vocabulary development. Unfortunately, it is now largely defunct. The Higher Education Academy is a distributed service supporting provision of eLearning in the UK, delivered through range of subject centers. Intute is a JISC-funded service delivering subject gateways (previously known as RDN-Resource Discovery Network). It maintains a joint catalog of 120,000 high quality internet resources using DC.

Andy also described the UK LOM Core, an activity to build a UK specific Application Profile of IEEE LOM, using UK specific vocabularies. It has never formally been signed off, but is being used by implementers. It is not quite clear who would decide it was “cooked.” RLLOMAP is a joint activity between the RDN and LTSN (RL LOM AP). Similar to UK LOM Core, it developed or made use of some UK specific vocabularies, including resource types, UK ed levels, UK ed contexts, UK policy themes and pedagogic terms.

Andy made some cautions about:
1. naming, since activity names change, and names have a tendency to get built into URIs
2. fracturing the community by developing competing and confusing standards
3. ensuring sustainability—currently no active maintenance for both UK LOM standards

In the wider environment Andy mentioned two additional areas of interest:
1. IEEE has initiated activity towards next generation LOM
2. DCMI/IEEE LTSC Taskforce is likely to change some pieces of usage, but the intention is to align use of DC in LOM

Andy also discussed some UK eLearning vocabularies, in particular UK ed levels (UKEL), developed under MEG, which is primarily list of 14 levels covering preschool to post-doc, largely specified in terms of typical age. Andy gave some examples of this vocabulary encoded in LOM, and noted that they are used as strings in LOM. In DC good practice is to assign and use URIs, to ensure uniqueness. So for UKEL, they need to assign URIs and declare their terms using RDFS/SKOS. The example URI has Andy showed has the activity embedded, which he thinks is a bad idea.

Andy had some thoughts about maintenance of these URIs. For UKEL they are using PURLs, but that begs the question of what the PURLs resolve to, as well as who is the ultimate maintenance agency. On the topic of using UKEL in tagging systems, Andy suggests that it would be interesting to reach agreement with Flickr, del.icio.us and Connotea about how to tag things using the established education level or other vocabularies. Most tagging systems have simple APIs, which create possibilities for reuse.

Andy was interested the possibility that between these formal and informal, lomtologies could potentially provide the glue. Lomtologies are an informal and potentially fluid vocabulary, useful in the context of describing learning resources, maintained by the community through social tagging systems, where each term comprises a tag and a URI.

Discussion:

Diane Hillmann pointed out that some people were looking at tags in flickr and trying to organize them into hierarchies, which points out the potential for a bottom up approach as well. This would involve looking at what people use and trying to build vocabularies using those to co-ordinate with formal systems. Mikael Nilsson commented that the approach was interesting, and we do need to do something about what's going on in social tagging systems. But he worries that adding a URI to tag makes it well-identified, and the semantics of the tags are defined by the way they are used—so the semantics are after the fact rather than defined. Maintaining and creating this kind of system is difficult, and may not be sustainable. Sarah Currier pointed out that it's all the same problem--you still need to maintain the vocabularies.

Stuart Sutton brought up the phenomenon experienced in US--"orphan vocabularies." The US Dept. of Education is trying, but it's a huge problem. Some vocabularies may not be growing at the rate of the huge general subject vocabularies, but we need to think about finding some mechanism for caring for a vocabulary that has no long-term support. This is not an educational issue, but more general—though in many fields there will be formal organisations that manage those vocabularies.

Mikael thought that folksonomies might be thought of as an educational effort on their own, where usage might encourage more usage. We should probably wait and see what happens rather than try to push a particular agenda. Sarah Currier mentioned that in the US there is some effort to standardize some healthcare usage, thinks that there is some concern about where the money is flowing. She thinks we tend to freak out about centralized control and long-term sustainability.

Mikael agrees that usage might support sustainability in the social tagging arena, we just don't know yet. He believes that small focused vocabularies have the best chance of lasting. In the area of social tagging, he thinks we can influence them in specific ways, and it's probably a good idea to give

recommendations to how tags can be used in social tagging systems. Andy pointed out that a lot of conferences will specify tags for that conference.

Diane pointed out that the lack of consensus about sustaining current vocabularies mirrors what's happening to large vocabularies that used to rely on print sales--a lot of them have been trying to establish ways to put their vocabularies online without allowing open use. We haven't expressed well the value of these vocabularies over time, aside from being just another expense for an organization. Andy mentioned that the British Standards Institute was willing to take over the maintenance of some of the MEG vocabulary work, but wanted to sell the standards, a model that is true for many standards bodies, and is a major impediment. NISO has dealt with that by making their standards downloadable, but it is unclear whether that model is sustainable.

TITLE: Achievement Standards and Frameworks - Issues and Challenges in Machine Representation and Deployment of Content Standards
PRESENTER: Stuart Sutton
DESCRIPTION: This presentation will look at the development of the U.S.-based Achievement Standards Network (ASN) and its effort to build a national repository of machine addressable K-12 content standards for use in correlating educational resources to U.S. state and national academic standards. The issues around such resource correlations are complex since U.S. federalism currently precludes a national curriculum and results in an array of controlling state standards as well as standards promulgated by national organizations (mistakenly referred to as "national standards"). The ASN currently contains over 445 current and historical U.S. state standards documents addressable by URI at the level of their individual 'statements.' U.S. national K-12 standards in science and mathematics are also included. Plans are underway to include standards, benchmarks and frameworks in use in other nations. The talk will focus on issues of deployment, use and maintenance. (http://www.jesandco.org/asn/viewer/default.aspx)

Stuart gave some background on educational standards in the US that lead to increased emphasis on curriculum standards and testing. This has lead to increasing demand that educational resources be correlated to state standards and further to standards across states. "Curriculum standard is any formal statement of student academic performance reflecting knowledge, skills, abilities and habits of mind that the student must demonstrate to be considered proficient in a particular content area." These are extrinsically framed formal learning outcomes.

Curriculum standards define what is taught and what skills are tested (Instruction--→Assessment). ASN is designed to hold the US state curriculum standards in a machine addressable way. The components are: (ACSR) Achievement Content Standards Repository and the Common Intermediary Statements (provide ways to cross map one standard to another). State curriculum standards have been broken down into individual statements that can then be identified unambiguously with a URI. Most breakdowns are expressed hierarchically.

Several viewers have been developed to look at particular standards. There are three ways the URIs are used: SOAP API, to ACSR (state standard) resolution and CIS Mapping Service. Work is being done on intermediary statements, focused on three methods:

1. Assignment of controlled vocabulary terms to statements and then to resources

2. Meta-standard statements, operating as a switching language
3. Natural language processing

There are some limitations to the correlation attempts. The property dcterms:conformsTo assumes that there is a concept at the other end, but usually a variance in granularity makes this problematic, and there is as yet no way to express "strength of fit." Correlations tend to be error prone, and are not necessarily reliable enough for teachers' use. Stuart believes we should be moving towards using more contextual information and better expression of fit.

Most of the sustainability planning for ASN is based on publisher licensing, including offloading upkeep effort to SETDA, and licensing of the CIS. ASN is currently loading standards from Japan, and possibly Korea. They are seeking to incorporate more international standards.

Stuart discussed some research applications of the ASN data:
1. longitudinal standards data measuring implications of change
2. large disparities in achievement levels, between states and state and national assessments
3. in US, National Educational Assessment Program (NEAP) assessments govern disbursements of funds

The ASN state standards viewer is available at: http://jesandco.org/asn/viewer