Engagement, Collaboration and Community Features of SCORM 2.0

by Aaron Silvers

"Would I Share It?"

On a forum on Elliot Masie's LearningTown Community, a discussion is brewing at the time of this writing about how people define "the best E-Learning." One web developer named Jade Kazmierski responded with the following:

> *"From a very high-level student's perspective, I think the best elearning, like all training, would:*
>
> *° Make me feel that I spent my time in a worthwhile way*
> *° Would be just when I need it - so I could confidently apply it on the job following the course*
> *° Leave me wanting to learn more - on my own - and give me the resources to do so*
> *° Be something I'd want to tell others about"*

I don't know Jade, personally, but she's worked with a friend and peer at Northwestern Mutual Life in Milwaukee, Wisconsin. She's been in the E-Learning business for all of two years, and writes clearly what all of us involved with the design and development of E-Learning at any level hold true. From her description of what makes the "best" E-Learning, I will derive four questions that will help "point north." The guiding questions are:

• Does this make me feel that I spent my time in a worthwhile way?
• Is this timely?
• Is it relevant and applicable to the work I need to perform?
• Do I want to learn more and does it make it easy for me to do so?
• Would I share it with others, and if so, can I?

With this lens, let us explore several suggestions for integrating learner engagement, community and collaboration in the very foundations of SCORM 2.0 instructional experiences. It is my intent to present models that reinforce the community of learners in a given human organization and provoke discussion about the inclusion of such community supporting features in SCORM 2.0. This paper will not address social learning in the definition of groups of learners synchronously or asynchronously "learning." While that is a model that can emerge from what is presented, it is an affordance and not the principal goal.

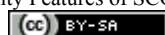## Supporting Learning Community Engagement

Tom King commented on my blog:

> *"...I'd like to discover a learning object and just click a link/bookmarklet. That bookmarklet would pop-up a confirmation/password dialog from my LMS to 'register' the current page as a SCO.*

Data & the SCO could be added to some sort of walled-off holding-pen of my learner data. Letting me create a portfolio with some persistence of training that I found and learned from..."

Martin Ebner in several email exchanges echoed the idea of a bookmarklet:

*"...btw, what we absolutely need is a kind of bookmarklet, where I can simply do all [kind] of ratings, tagging, quoting and so on... for example I am very impressed [with] TUMBLR (*ed: http://tumblr.com/*)"*

Arguably there are four main activities that make social learning possible, for our purposes:

1. "Make" (or Identify) a knowledge object.
2. "Share" the knowledge object.
3. "Tag" the knowledge object with metadata.
4. "Relate" the knowledge object, making it a learning object by providing context and relevance through discussion, evaluation reinforced with provenance.

"Making" a Knowledge Object

There are established models to look at for the treatment of web content as an "object." Fluid is an application on the Apple Macintosh desktop that creates site-specific browsers -- thus turning a web application like Gmail into a desktop application. Any related windows or pages that are on the site that has been objectified are browsed using Apple's "CoverFlow" interface, while any external links are launched in your default web-browser.

Clearly, the Fluid application consistently reinforces the boundaries of a web object and behaviors for handling navigation within and external to that object, which makes it a solid model for the purposes of turning web content into a "learning object" in the objective sense. While Fluid is an exciting concept, Apple happens to offer another model for objectifying pieces of content.

The web browser, Safari, includes a feature called "webclips" that allows a user to save sections of web pages to a dashboard as another way of harvesting content from a larger HTML page.

The notion of "portlets" in portals as an area where one could tap into already existing compartments that are already structured for consumption by other systems and service is compelling in the context of a Learning Management System. RSS and/or other existing specifications may provide a path to develop standardized middleware to aggregate "portlets" into some kind of aggregation.

Yet another option would consist of a service available to a member of a learning community to author and add content to a repository. Details of an authoring service are provided in the sister white paper to this, Content Authoring Standards in SCORM 2.0

My point is that arguably the easiest to implement activity in social learning is the ability to make a knowledge object. Several models of this behavior already exist, and some of these models are based on exsiting specifications or standards available for use.s

Considering the existing SCORM, we're fundamentally talking about identifying Assets. This is not necessarily a bad thing -- in fact, it frees us of some of the limitations imposed by the current framework with a dependence on a JavaScript-provided API exposed at run-time. I offer the term "Knowledge Object" as a distinction as when I think of an Asset, I'm generally thinking of a static image file or some other non-communicating electronic file that is reduced to its lowest useful format. A Knowledge Object may not communicate with an LMS, but it is reusable and has a wealth of context contained within itself.
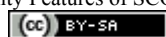
"Sharing" a Knowledge Object

The last two years have demonstrated impressive models for sharing content within open and dynamic communities. The "Social Web," despite the service in question, follows a model where a member of a service creates their own community of "friends," or contacts that they elect to "follow." *Following* in this sense means a particular user subscribes to any posts or sharing provided by the member they *follow*. They are considered *Friends* with a member when the pair *follow* each other. If this sounds more like anthropology than information technology, it's with good reason: the notion of a formalized, yet dynamic, user community with complex relationship structures is made simple as an emergent paradigm -- the organization as a whole knows more than any individual member. Emergence is a core philosophy that propels the Social Web.

A number of social networks share a similar model without an established "standard" that they're working from. Services like Delicious, Pownce, Twitter, Tumblr, and Facebook all share a similar convention: a member of the network posts "something" -- in many cases, it is text, a link, an image or a video -- and followers of the member are pushed the shared artifact. These social networks all have a way of filtering these shared artifacts by the member being followed OR the type of artifact being shared (filter by videos only, for example). Some networks, like Tumblr and Delicious, allow members to filter the streams of artifacts by metadata (in these cases, the metadata is in the form of keywords).

In all of these services, the act of "making" the Knowledge Object in effect "shares" the object with others. Only Facebook lacks a whole-network view of the stream of shared artifacts. What I mean by this is that on the other services listed, there's a way to see what's being shared by people outside of one's personal network affiliations to see what's being publicly shared by other members on the network. The ability to see this content is vital to the growth of both a member's knowledge and a member's social network.

Each network presents a different emphasis on either the artifact sharing or the social networking, so each service models how different systems that provide similar functionality may compete in the same space. Delicious, as an example, is a service where the URL presented is most valued. People can use Delicious to store their personal bookmarks; they can follow friends or groups and get exposed to what their personal network adds to the system; they also can access what all users on Delicious are adding in the system and add those artifacts to their own personal stream. In this model, the strength of keywords used as search terms is critical to the discovery, classification and relevance of the artifact.
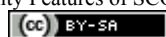
"Tagging" a Knowledge Object

On services like Delicious or Tumblr, tagging is critical to the search and discovery of knowledge objects. The tagging of knowledge objects with keywords emerges from an integral social dependency. All the keywords employed to describe a knowledge object are derived from user-submission, but to assist users in their tagging, keywords appear as automated suggestions as a user types the tag into a textfield -- thereby reducing the number of variants on unintended spelling or context differences from a diverse user base. This concept, referred to as folksonomy, is a community-driven taxonomy that emerges from the collective intelligence of the user base. As new keywords are entered into the system, they are presented as suggestions when a user attempts to tag content themselves. Additionally, as a knowledge object is tagged more often in the repository, the most common tags are presented to the user so that the user is encouraged to use similar language to describe the artifact, but is still able (and encouraged) to add relevant keywords to describe the artifact.

Both Delicious and Tumblr model the kinds of tagging behaviors that could/should be implemented in the SCORM 2.0 model for tagging of content, both from an administrative use and from a user-generated use. The same autosuggestion that is used in the tagging of knowledge objects exists in search functions to find knowledge objects entered in the global or personal network.

"Relating" a Knowledge Object

In 2005, I attended an E-Gov conference on Knowledge Management and of particular importance were two concepts: Provenance and Relevance. *Provenance* refers to the relationship between a knowledge artifact and the organization(s) or individual(s) that create, accumulate and/or maintain (even use) them. Particularly in the domain of user-generated content, provenance is particularly important because it lends credibility to a knowledge object when its source has visible (formal or "understood") recognition as a subject matter. The ability to know the author also lends a context, which arguably adds to the knowledge sharing experience.

Relevance is a fuzzier notion. The credibility of a source lends to the relevance of a knowledge object, but relevance has dependencies on the context a learner brings to the experience with content. In social networks, the notion of relevance may be confused (perhaps by design) with resonance. Some content may resonate favorably with learners and be thought of as more "relevant" than other content that may contain exactly the information needed by a user -- just presented in a way that is not immediately acceptable to the user. Whether or not a knowledge object is relevant, therefore, is highly contextual -- which is where both a collective analysis and an individualized analysis of relevance are applicable, concurrently.

Fortunately, this concept is easier to model than it may be to explain and there are some excellent models of such social activity on the web. Digg, and many organizations that employ its open-source mimic (Pligg) provide a way to harness collective information to provide a notion of relevance to a piece of content, while maintaining the ability to track back the vote for relevance (or the vote against it) and any comments circulating around the object back to the individual (providing for provenance).

Digg is a popular social network that capitalizes on news and links that its users consider important or interesting. The algorithm forces the most "dugg" entries to float to the front page and buries items of less relevance. Pligg takes the same model and allows a community to capitalize on the same behaviors to apply collective intelligence to solve a myriad of knowledge problems. In my organization, Pligg has been installed for internal use by customer service associates to bring transparency to suggestions for process and performance improvements. Ideas that are deemed more relevant float to the top. Threaded discussion and the "Thumbs-up/Thumbs-down" rating for relevance are only allowed by subscribers logged into the system -- in other words, no anonymity.

The same model can be applied in a learning system to relate to the releevance of content in the system, whether added by a member or through traditional channels. When such activity is part of the learning environment, in combination with the tagging of knowledge objects, the traditional virtual learning environments we've seen emerge in the past four years can be transformed into collectives with active learner engagement, demonstrating a grasp of knowledge by relating it to others.
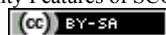
Conclusion

There are no "standards" in existence that support the various behaviors described in this document. There are several models, some of which are employed in the research and arguably design of SCORM 2.0. Learning happens in context, and it is rarely an individual practice. The behaviors of users on the web across all demographics are shifting to the use of social networking, and those very same users are already exchanging knowledge with each other. It's my intent to offer ideas on how a SCORM 2.0 system must be inclusive of these behaviors -- to ignore them is, in my opinion, to ignore a shift that is already happening in pedagogy. I'll leave it to others to challenge and grow this idea. I hope this paper paints a picture of what an end state can look like.

Acknowledgments