

Moodle as a the Central Hub of Learning with Tools Plugged in - Learning Tool Interoperability

Gavin Henrick

Learning Technology Services, Ireland, SomeRandomThoughts.com Blog, gavin@lts.ie

Abstract

At its core Moodle is a user management system, with course areas to which users are given roles and permissions, to access content, and activities and receive grades. These are the core aspects of learning management. However it would not be possible for the Moodle platform to include every possible feature inside the product – there are simply too many tools being created by specialists around the Globe.

With the external tool in Moodle 2.2, it aims to bridge that gap – being able to reach out to those tools which others create and connect seamlessly to provide access to the users inside Moodle to an external tool or content.

Keywords

IMS LTI, Learning Tools, Interoperability, Integration, Moodle

Background

The IMS Global Learning Consortium (IMS GLC, 2012) is a global, non-profit, member organization that strives to enable the growth and impact of learning technology in the education and corporate learning sectors worldwide. The IMS name originates from the initial name of the organisation which was a bit specific – Instructional Management Systems.

IMS is developing Learning Tools Interoperability (IMS GLC, 2012) to allow remote tools and content to be integrated into a Learning Management System (). So basically it is a set of standard integration methods that enable two systems talk to each other in a common language/protocol.

But before we go through the use cases and applications, what is an LTI Tool?

The LTI Provider is an application which provides features that other people want to and can connect to from their own LMS.

The LTI Consumer is an application which can connect to the 3rd party Provider system to avail of the features it has.

Onto Moodle

So learning tools now have a set way in which they can seamlessly connect to each other or to a learning management system like Moodle. In practice what does this mean? Well, while a user is logged into an LMS (Moodle for example) they can then connect over to the other tool (a wiki or blog) and be automatically authenticated providing a seamless experience.

When Moodle 2.2 was released it contained the new External Tool (Moodle HQ, 2011) activity which acts as an LTI Consumer. This enabled a teacher to configure the connection to the external tool (LTI Provider) as a link within the Moodle course area – all they needed was the URL, Key and secret which the owner of the tool can provide.

So for Moodle, this extends the feature set of Moodle through the use of tools and activities outside of the platform and without the developer of the activity having to make it work inside Moodle.

This has two direct benefits firstly to the developer of the tool and secondly to the Moodle Teacher. The developer just needs to implement the IMS LTI standard and provide the connection details to those who want

to use it (paid for on subscription or whatever business model they choose to use). The teacher does not need to ask to get a new plugin or integration installed into their Moodle site, which can have impact on support or cost of hosting, they just connect and go (Henrick, 2012).

It really is a win win situation.

So one example would be this:

A teacher sets up an External Tool activity in the Moodle course for the students. This then connects them to a blog site (like Wordpress). The process automatically authenticates them and gives them whatever permissions required on the Wordpress installation so that they can use the external blog. This single sign-on is important to the process as it makes it seamless for the end-user.

This could be used for any standalone learning tool which implements LTI.

Think about the possibilities – someone builds a really cool maths engine and instead of having to make it work inside Moodle, all they do is implement the IMS LTI standard(IMS GLC,2010) and provide connection details to those who want to use it.

One aspect not mentioned yet is that through privacy controls on the External Tool, you can choose to allow the external activity to pass back grades to the Moodle course – which would be great for tools that do assessment!

There are a number of useful Tools out there which provide IMSLTI compliance already:

ChemVantage.org

ChemVantage is a free resource for science education which includes grade exercises, homework exercises, practice exams, video lectures and free online textbooks. It was created by ChemVantage LLC which was founded by Prof. Chuck Wight, who has taught General Chemistry at the University of Utah since 1984(ChemVantage, 2011)

Wordpress Multi-User / Network

One example is turning Wordpress Multi-user into an activity for Moodle. The below image shows Wordpress site embedded within Moodle with the teacher automatically logged in.

Mediawiki

You can use the External Tool to embed a Mediawiki site into Moodle. The category it goes to is determined by the course shortname and the students then have editing rights to that area.

Musicflight

Noteflight an online music writing application that lets you create, view, print and hear music notation with professional quality, right in your web browser. There is a free version and a subscription version(Noteflight, 2012).

Web-PA

Web-PA is an online peer assessment system designed to help students assess their own, and their teams, performance in group-work activities. It is an open source tool that enables every team member to recognise individual contributions to group work.

Others

However I know of a number of other assessment and content companies in the process of implementing IMSLTI access which is a very exciting prospect!

What are the benefits of having the tool outside of Moodle?

Learning Tool Producers

Organisations who want to provide their tool into Moodle now don't need to learn Moodle, they just learn and implement the standard. Where before each system released an integration activity or block for Moodle and

other LMS they wanted to support, now this means less cost for them in supporting and maintaining those connections. They can focus on their product – the tool.

Institutions / Teachers

If a teacher, or an institution has an idea for a tool but want to ensure it is usable with Moodle, it won't matter if they are Perl, Java or Python developers – they don't need to learn how to program in PHP, nor how any of the APIs in Moodle works. All they do is code their tool to the standard.

Training Companies / Content Providers

In the past training companies provided a set of learning objects (usually Scorm or full course backups) which users installed into their LMS. IMS LTI will provide them with an alternative strategy.

They will now be able to keep all the content centrally, and provide LTI access to it. This offers the training company and the end users many benefits. These benefits include:

- Any fixed or small changes can be done centrally, and benefit everyone without having to distribute a new copy of the learning object
- Any improvements can again be applied centrally
- The ability to provide test access is much improved, and does not compromise the security of the content, so it will be easier to get to test something out without having to install it locally.

Moodle administrators / Teachers

Up to now, if you wanted to add a tool into Moodle you usually went through a vetting process with IT – which could include many technical, functional and security type tests such as

- Is the code written in a secure way
- Is the code maintained
- Does it work with our version of Moodle?

Now it will be easier to test and check out the tools (when they implement the LTI connection) without having to worry so much on the technical side

Moodle as Provider!

With the release of a plugin by Juan Leyva from CV&A the Moodle partner from Spain, Moodle can be the LTI Provider now too as well as consumer(Leyva, 2012).

This plugin provides a few other features which are more Moodle related

- The option to provide access to a single activity or a full course
- The ability to modify the page for hiding headers, footer, and right/left blocks
- The ability to change the navigation block of a course or activity for showing just links related to the activity/course in question.

However, it also allows for some business / management options:

- Enrolment duration
- Enrolment start and end dates
- Enrolments quota

The Future

Between the External Tool and the LTI Provider plugin, IMS LTI support within Moodle is moved forward significantly and opens the door for real course sharing and collaboration across multiple LMS.

A course ran on a Moodle site in Australia could have students from classes in many other institutions all collaborating together in the one area. This can be accomplished using the IMS provider and the built-in External Tool, but without having to handle user lists, or authentication or enrolment. The potential is just huge.

But equally, this really does open up easier content selling as a service too. A training company can set up their course in Moodle. When they sell access to a company for it, they provide the URL and Secret and it all just works after that (Henrick, 2012).

So Moodle can now reach out across the net to embrace the new features as they are being developed.

References

- IMS GLC. (2012, June). Learning Tools Interoperability. Retrieved from <http://www.imsglobal.org/toolsinteroperability2.cfm>
- IMS GLC. (2012, June 12). IMS Interoperability Conformance Certification Status. Retrieved from <http://www.imsglobal.org/cc/statuschart.cfm>
- IMS GLC. (2010, May 17). Learning Tools Interoperability Basic LTI Implementation Guide v1.0. Retrieved from <http://www.imsglobal.org/lti/blti/bltiv1p0/ltiBLTIimgv1p0.html>
- Moodle HQ. (2011, Nov 29). External Tool. Retrieved from http://docs.moodle.org/22/en/External_tool
- Henrick, G. (2011, Nov 28). Moodle 2.2 supports connecting to IMS LTI tools. Retrieved from <http://www.somerandomthoughts.com/blog/2011/11/28/moodle-2-supports-connecting-to-ims-lti-tools/>
- Leyva, J. (2012, Jan 9). LTI Provider. Retrieved from http://docs.moodle.org/22/en/LTI_Provider
- Henrick, G. (2012, Jan 8). Review: LTI Provider for Moodle 2.2. Retrieved from <http://www.somerandomthoughts.com/blog/2012/01/08/review-lti-provider-for-moodle-2-2/>
- Noteflight, LLC. (2012, June). What is Noteflight?. Retrieved from <http://www.noteflight.com/info/faq>
- ChemVantage LLC. (2011, December 19). ChemVantage. Retrieved from <http://chem-vantage.appspot.com/About>
- Vickers, S. (2012, May 25). How can LTI benefit me?. Retrieved from http://www.celtic-project.org/Project_blog/2012/02/How_can_LTI_benefit_me