

# ISLE Open Educational Resources

## Integration

September 29, 2015

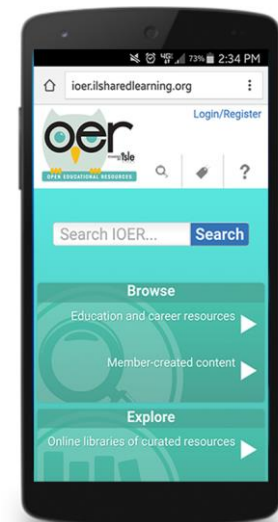


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## IOER Integration

- IOER has endpoints for integration with various systems:
  - Learning Registry
  - Widgets for embedding on your website
  - SSO with 3<sup>rd</sup> party ID providers and applications
  - APIs
  - LMS and Courseware

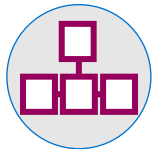


# Integration

- IOER Integration with National Learning Registry
  - IOER consumes and publishes metadata and paradata
- IOER Basic Integration
  - Embed IOER Widgets on your website for seamless access
  - Requires basic knowledge of HTML and CSS
- IOER Direct Integration
  - Single sign-on (SSO)
  - Create your own system using APIs
  - Learning Management Systems/Courseware



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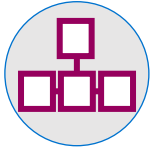


## Learning Registry

The Learning Registry is an open database where content creators and educators can share information about digital educational resources. The Learning Registry is supporting the Learning Resource Metadata Initiative (LRMI) which provides common language for tagging resources according to quality, keyword, and alignment to curricular standards. The Learning Registry supports educator voices to help define which resources are most relevant or useful.

<p>Learning Registry</p>  <p>Steve Midgley explains the U.S. Department of Education Learning Registry project, which helps identify and find educational resources online.</p>	<p>Utah Education Network - Education Datapalooza</p>  <p>Katie Garrett shares how the Learning Registry, integrated into the Utah Education Network, helps teachers find and share teaching resources.</p>	<p>The Learning Registry - Education Datapalooza</p>  <p>Richard Culatta talks about improving access to digital learning content through the Learning Registry.</p>
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<http://tech.ed.gov/learning-registry/>  
<http://learningregistry.org/>

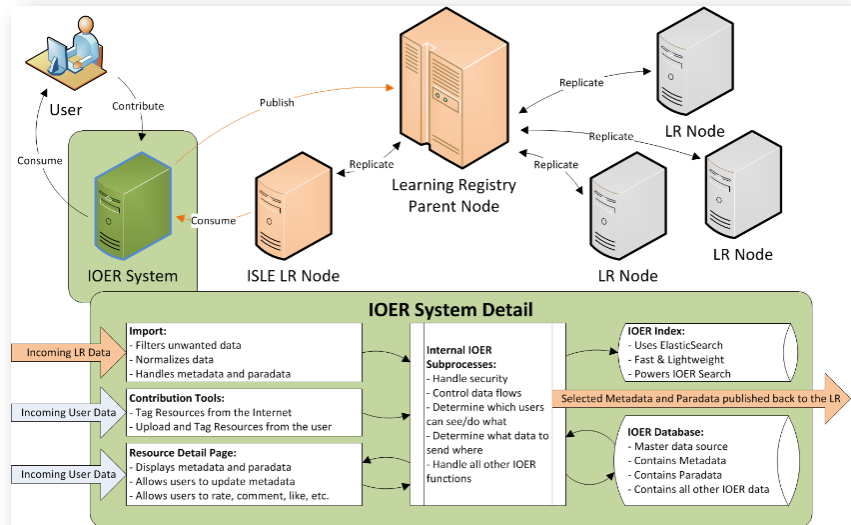


## Learning Registry Integration

The SIU CWD team designed and developed the related technologies and code base for **consuming from and publishing to the Learning Registry**.

The IOER metadata is based on LRMI version 1.1 adopted by Schema.org and more recently transferred to Dublin Core Metadata Initiative (DCMI).

Vocabulary used by IOER mirrors that of the Common Education Data Standards (CEDS).



<http://ioer.ilsharedlearning.org/developers/learningregistry>



## IOER Widgets

Widgets offer a basic level of interactive integration with any website. Embed IOER seamlessly by copying/pasting a short code snippet into any site's source code:

- Standards Browser for searching resources by standards
- Basic Search – a text box and search button
- Full Search – search using all available filters
- Learning List Explorer Widget
- Library/Collections Widget

<http://ioer.ilsharedlearning.org/widgets/>





# Widgets - Standards Browser

The screenshot displays the OER Standards Browser interface. At the top, there is a search bar with the text "Start typing here to search...". Below the search bar, there are navigation options: "Most Relevant", "Filter by Tags", and "Filter by Standards". The "Filter by Standards" dropdown is open, showing a list of Common Core Math Standards for 5th Grade, specifically under the category "Operations and Algebraic Thinking". The selected standard is 5.OA.A.1, "Write and interpret numerical expressions." The interface also shows a list of search results, including a resource titled "Integer Combinations - Postage Stamps Problem" and a link to the "Illinois State Board of Education".



# Widgets - Basic and Full Search

Basic Search

Search... Search

Full Search

The screenshot displays the OER Full Search interface. At the top, there is a search bar with the text "Start typing here to search...". Below the search bar, there are navigation options: "Most Relevant", "Show 20 Items", and "List View". The "Filter by Standards" dropdown is open, showing a list of search results. The interface also shows a list of search results, including a resource titled "Unit 5 - 2-Dimensional Geometry" and a link to the "Illinois State Board of Education".





## Widgets - Library/Collection



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## IOER Single Sign-On (SSO)

- IOER supports SSO
  - SAML 2.0 for ISLE School Districts
  - OAuth 2 for Google
- Other Identity providers (IdP) will be supported soon.
- Microsoft's ASP.NET and MVC Frameworks support SSO using OAuth 2, among other SSO technologies.
- SSO with Google involves setting up a project in the Google Developers console, enabling the Google+ API, providing a couple URLs, and getting an AppId and App Secret from Google. Facebook uses a similar process.

<http://ioer.ilsharedlearning.org/developers/rolemanagement>



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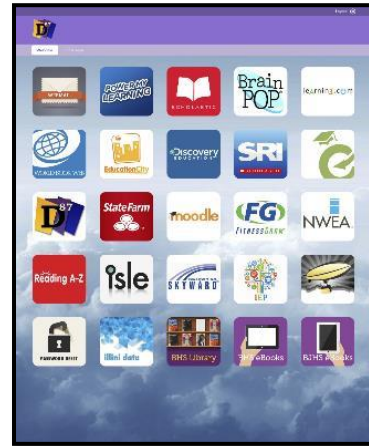


# IOER SSO with Other ISLE Apps

NCSA at University of Illinois Champaign has implemented a SAML 2.0 Identity Provider (IdP) for use by ISLE K-12 School Districts to sign on to their apps via the ISLE App Launcher.

- IOER and the ISLE K-12 Dashboard both use a Shibboleth 2 Service Provider (SP) as the other half of the SSO process.

App Launcher



# SSO with ISLE K-12 Dashboard

These are some widgets directly accessed/integrated via the ISLE dashboards developed by Northern Illinois University My IIRC with SSO.

**Easy Things You Need to Know to Start Using the ISLE Educator Dashboard**

1. Log on and select the year and school
  - Access the dashboards at <https://www.isledashboards.org>
  - Log on by entering your district email, select your district, and enter your district password.

Welcome to the Educator Dashboard Home Screen!  
Use the drop down menus to select the building and year you would like to view.

Once selected, your classes will display on the My Students tile.



## IOER APIs

APIs are available to transfer data between IOER and other sites. Examples include:

- Learning Maps
- Gooru



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## APIs – Learning Maps

Add resources to and remove from a Learning Map:

- Learning Maps are a progression of standards that move students toward a goal.
- IOER allows users to search for resources by standard and add them to a learning map.
- This example shows a shopping cart style interface to send the resources to the learning map provider.



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## APIs – Gooru

- Search [goorulearning.com](http://goorulearning.com) for resources and add them to IOER and your library.
- This example shows a search of Gooru for resources about the Pythagorean Theorem.

The screenshot displays the IOER gooru Search (beta) interface. The search bar contains the text 'pythagorean theorem' and a search button. Below the search bar, it indicates 'Found 3681 results.' and provides a 'Jump to Page:' option with buttons for 1, 2, 3, 4, 10, 50, 100, and 185. The first search result is titled 'Pythagorean Theorem' and is from 'AlgebraLAB presents Pythagorean Theorem, an educational activity resource on math.' The result includes metadata: 'Media Type: Website', 'Views: 403', and 'Subscribers: undefined'. A small thumbnail image of a purple diamond is visible next to the result. In the background, a portion of the AlgebraLAB website is visible, showing a navigation menu with items like 'About Us', 'Activities', 'Careers', 'Connections', 'Directions', 'Glossary', 'Lessons', 'Passages', 'Practice', 'Search', 'StudyAids', and 'Word Problems'. A 'Tag this Resource' button is also visible at the top of the background page.



## LMS/Courseware

Learning Lists can be anything from an entire curriculum down to a unit or lesson plan. It is these that are most likely to be used in your LMS.

- SCORM (Shareable Content Object Reference Model)
  - Developed by Advanced Distributed Learning (ADL)
- Common Cartridge (CC)
  - Developed by the Common Cartridge Alliance (IMS Global is a member)

Both are open standards. Moodle (an open-source LMS) can import and export CC v1.1 and SCORM v1.2.



# IOER Technical Information

IOER follows modern practices for standardizing data models and schemas supporting interoperability and machine readability. All of the sources, models, and schemas listed below are available through open use licenses.

Type	Sources/Specifications	IOER Use
Metadata	<a href="#">Dublin Core Metadata Initiative</a> (DCMI), DCMI Learning Resource Metadata Initiative (LRMI), <a href="#">Schema.org</a> (W3C Working Groups)	Foundational to consuming, publishing, sharing, searching, and integrating to all aspects of IOER.
Metadata and Paradata Storage and Services	<a href="#">Learning Registry</a> (LR) (Formats such as XML, JSON, and JSON-LD)	Services and infrastructure for sharing data.
Vocabulary	<a href="#">Common Education Data Standards</a> (CEDS), <a href="#">RttT Common Content Tagging Initiative</a> , and DCMI/LRMI	Consistent tagging, filtering, and searching.
Paradata	LR Paradata	Publish assertions about people and resources in the system to establish, trust, similarity, and resource updates.
Learning Object Frameworks	<a href="#">Achievement Standards Network</a> open frameworks (including CEDS and LRMI)	Learning Standards and Rubrics include Achieve's OER and EQiP rubrics.
Creative Works Attribution	<a href="#">Creative Commons</a>	Grants copyright permissions to creative works.
Federated Identity Management	<a href="#">Shibboleth</a> (OpenSAML)	Single sign-on via app launcher and NIU dashboard.
Web Services/API	<a href="#">JSON</a>	IOER provides access so other web apps can use resource data.
Code Base	<a href="#">GitHub</a> (Open Source Software Licenses)	IOER provides code for others to use.

Contact the IOER Team:

**IOER Developer Documentation:** <http://ioer.ilsharedlearning.org/developers/>

**Online contact form:** <http://www2.illinoisworknet.com/Pages/Contact-Us.aspx>

**Email:** [info@siuccwd.com](mailto:info@siuccwd.com)



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