

# Ready **OER** Not, Here We Come?

*Intentionally Planning for Open, Sustainable,  
& Learning - Analytics Ready Resources*





# Objectives

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- Develop working definitions for open educational resources (OER) and the role of learning analytics (LA)
- Explore 3 institutions' journeys with OER & LA
- Examine frameworks for ethically & legally incorporating LA into OER



# Who We Are



***Cristina Colquhoun***

Instructional Designer  
Edmon Low Library  
Oklahoma State University  
@call\_hoon



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Instructional Developer  
Office of Digital Learning  
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OER Librarian  
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**Poll**



## Gauge your level of involvement with OER & learning analytics (LA).

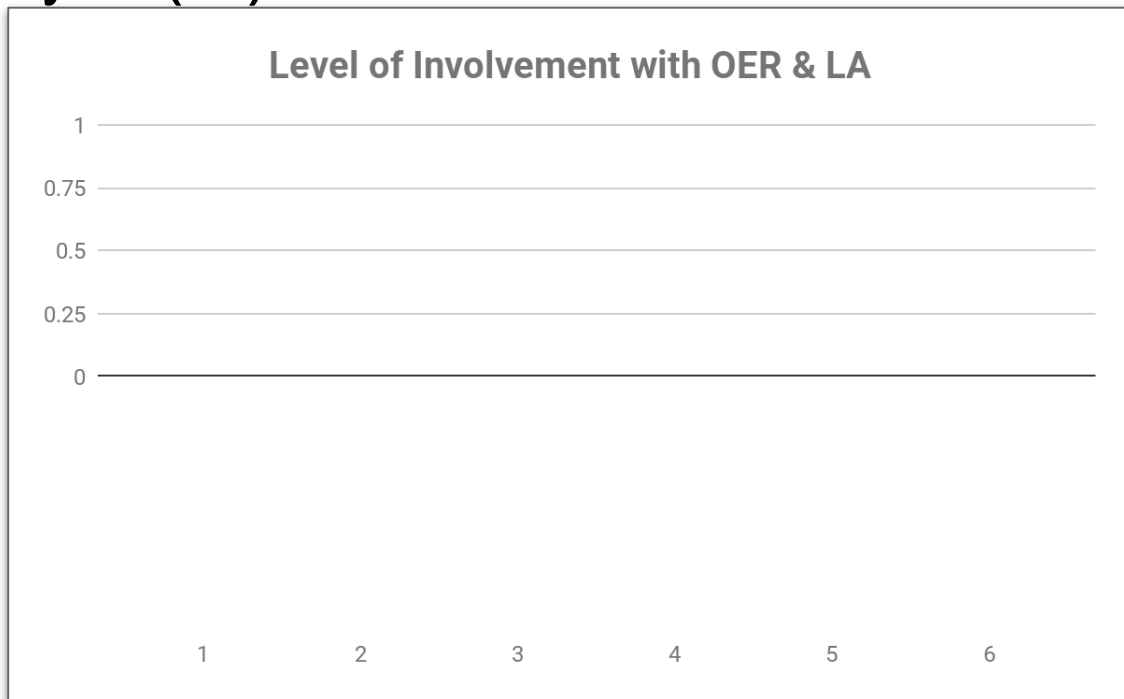
1. I've never worked with OER.
2. I'm exploring OER, but haven't thought about LA yet.
3. I've implemented OER, but haven't implemented LA yet.
4. I've dabbled in both OER and LA.
5. I feel confident in my use of both OER and LA.
6. Other not listed

<https://goo.gl/forms/RcpUnrGCdvV8J8VQ2>



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1

# Defining OER

What makes something an  
Open Educational Resource?



# OER = Free + Permissions

OER are “teaching, learning, & research resources that reside in the public domain or have been released under an IP license that permits their free use and repurposing by others.”

—[Hewlett Foundation](#)





# The “Permissions” of OER

## The 5Rs

In addition to being free, the following five permissions ([described by David Wiley](#)) are widely accepted as being constitutive of “open content.”

## Revise

The right to adapt, adjust, modify, or alter the content itself (e.g., translate the content into another language)

## Retain

The right to make, own, and control copies of the content (e.g., download, duplicate, store, and manage)

## Remix

The right to combine the original or revised content with other material to create something new (e.g., incorporate the content into a mashup)

## Reuse

The right to use the content in a wide range of ways (e.g., in a class, in a study group, on a website, in a video)

## Redistribute

The right to share copies of the original content, your revisions, or your remixes with others (e.g., give a copy of the content to a friend)

2

## Defining LA

What are **Learning Analytics** &  
how can/should they be used?



# Learning Analytics

## What

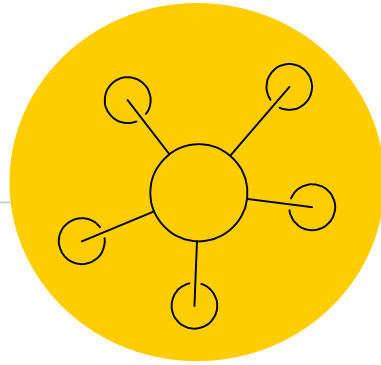
- LA = “the use of data, analysis, & predictive modeling to improve teaching & learning.”<sup>1</sup>
- LA consists of three components:  
1) statements, 2) storage, and  
3) insight/analysis.

1. [Allen, Cavanagh, Gunkel, Whitmer](#)2017

## Why

- Help learners achieve their goals
- Help teachers & designers understand the efficacy of OER
- Conduct iterative, continuous improvement of content & design of OER material<sup>2</sup>.

2. [Bodily, Nyland, Wiley](#), 2017



# STATEMENTS:

## *xAPI & Caliper Analytics*

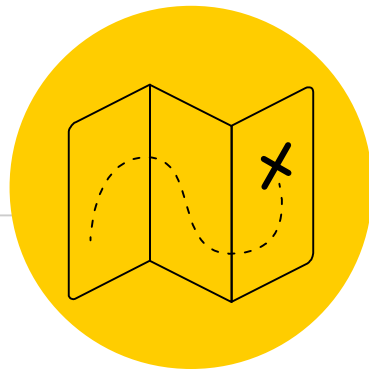
Two different standards are commonly used to describe LA activity. Both were released in 2015 & have similar structures (actor - action - object triples). xAPI was developed by the DoD to replace SCORM. Caliper is maintained by IMS Global.



# STORAGE:

## *Learning Record Store*

A Learning Record Store is a large database where LA statements (usually in xAPI or Caliper Analytics form) are stored for comparison, analysis, and visualization.



# INSIGHT & ANALYSIS:

## *Dashboards, Reports, Visualizations*

A LRS is typically just a database. To make these statements useful, we need help seeing trends or patterns. Dashboards, reports, & visualizations can be built for learners, instructors, admins, or others.

3

## OER + LA at our Schools

Wisconsin, Penn State, &  
Oklahoma State University



## OER + LA at Wisconsin

- We built 100s of ‘critical reader’ & ‘case scenarios.’ These typically include primary text, interpretative glosses, interactive quizzing, & learner exploration.
- Activities were built with [Pressbooks](#) (open source book publishing tool) or [Articulate Storyline](#) (expensive e-learning authoring tool).
- Activities can exist on public web (as OER) & / or be downloaded with LMS (e.g. LTI)



# Sample 'Critical Reader' Activity

The screenshot shows a course page for 'FRENCH 271 001' with the assignment '“Quand vous serez bien vieille...” (Sonnets pour Hélène)'. The page includes a sidebar with navigation options like Home, People, Discussions, and Assignments. The main content area displays the text of the poem with yellow highlights and annotations. A glossary term 'oyant' is shown in a tooltip. A video player is embedded at the bottom. An annotation pane on the right shows a quiz question about the relative pronoun 'qui'.

FRENCH 271 001 > Assignments > "Quand vous serez bien vieille..." (Sonnets pour Hélène)

Fall 2017-2018

Home

People

Discussions

Modules

Grades

Outcomes

Pages

Syllabus

Files

Quizzes

Collaborations

Announcements

**Assignments**

Settings

"Quand vous serez bien vieille..." (Sonnets pour Hélène)

Lisez attentivement ce poème en passant le curseur sur les mots en bleu et en cliquant sur les parties maquées en jaune pour voir les annotations (avec les exercices). Les annotations avec des exercices et des commentaires vont apparaître à droite de votre écran. Pour fermer une annotation il suffit de cliquer sur le texte principal. S'il existe un bouton "more" dans une annotation, n'oubliez pas de le cliquer. Après avoir travaillé sur les annotations à droite de l'écran, vous serez invités à cliquer sur le bouton "Start Quiz" pour faire un test basé sur les exercices que vous avez faits dans les annotations.

Quand vous serez bien vieille, au soir à la **chandelle**,  
Assise auprès du feu, **dévidant** et **filant**,  
Direz, chantant mes vers, en vous **émerveillant**:  
"Ronsard me célébrait du temps que j'étais belle."

Lors vous n'aurez servante **oyant** telle nouvelle,  
Déjà sous le labeur à demi sommeillant,  
1 au bruit de Ronsard ne s'aïlle réveillant,  
2 assant votre nom de louange immortelle.

Je serai sous la terre, et **fantôme** sans os  
3 Par les ombres myrteux je prendrai mo  
Vous serez au foyer une vieille **accroupi** en position assise, ramassée sure elle-même

Regrettant mon amour et votre fier dédain.  
Vivez, si m'en croyez, n'attendez à demain;  
Cueillez dès aujourd'hui les roses de la vie.

"After Ronsard" by Charles Williams (read by To...

Public -

Show all annotations (4)

zschwallier Sep 15

Qui

Faite l'exercice:

Le pronom relatif "qui" remplace ici "**la servante**".

Check

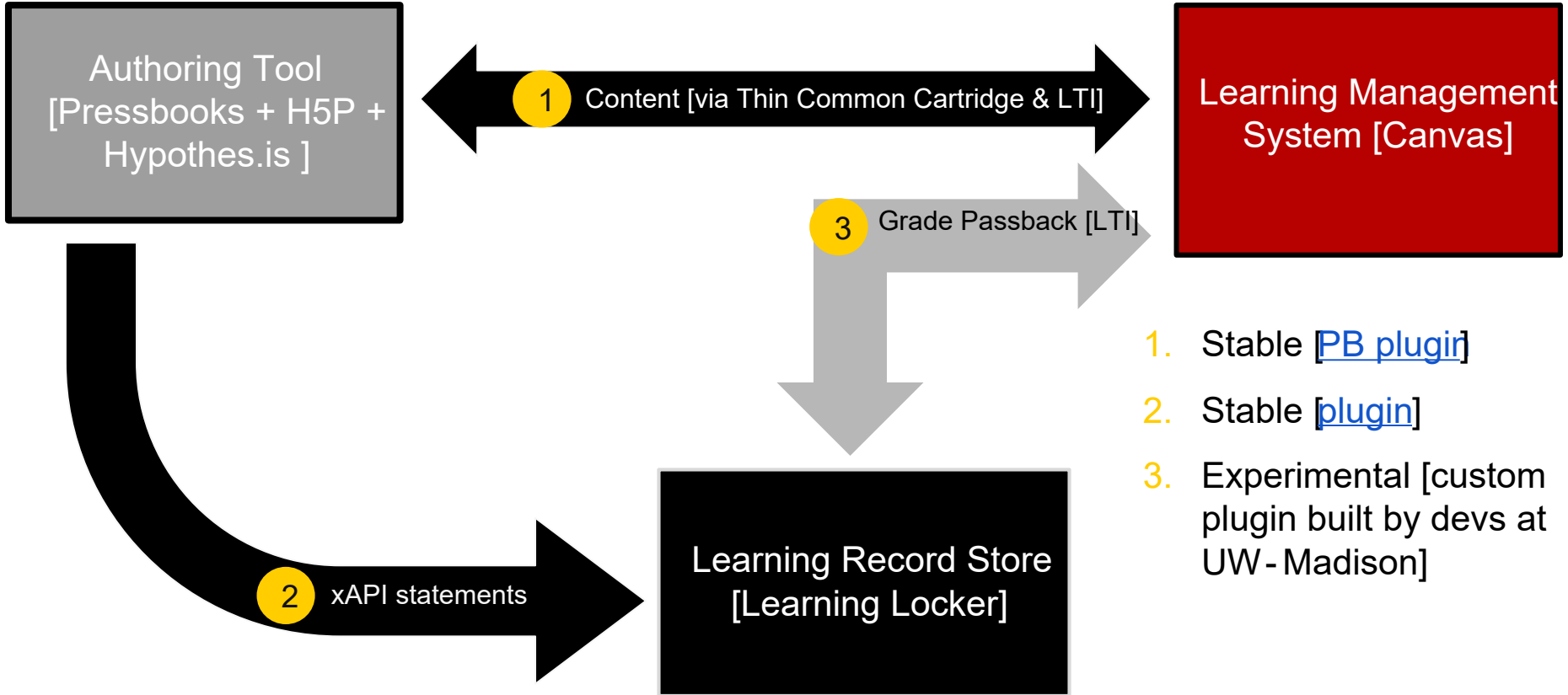
Download Embed

Continuez la lecture et cliquez sur le fragment suivant, marqué en jaune

1. Annotated text (yellow highlights)
2. Glossary term
3. Audio & video
4. Annotation layer (uses Hypothesis)
5. H5P activity in annotation pane

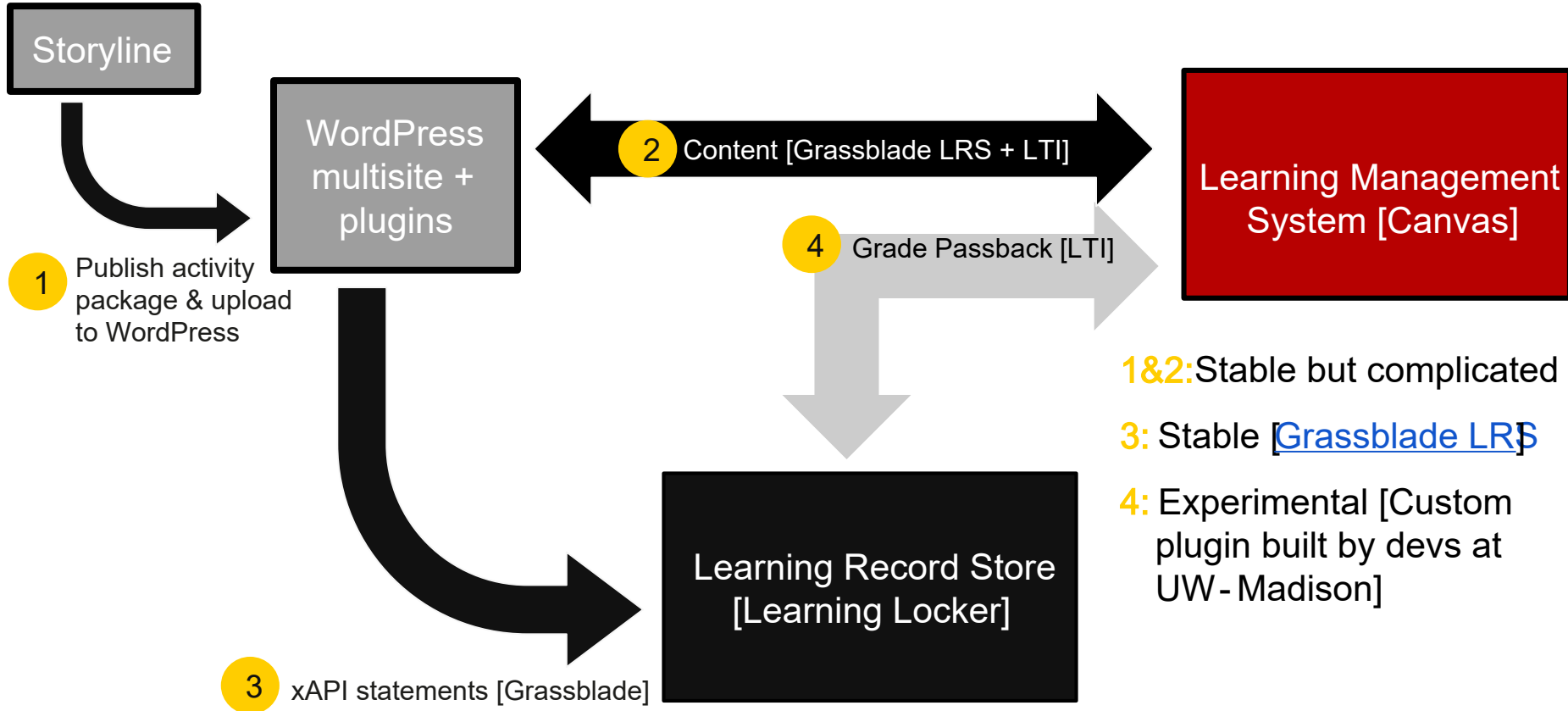
See other examples:  
<https://wisc.pb.unizin.org/frenchcscr/>

# Pressbooks to Canvas



1. Stable [[PB plugin](#)]
2. Stable [[plugin](#)]
3. Experimental [custom plugin built by devs at UW-Madison]

# Storyline to Canvas

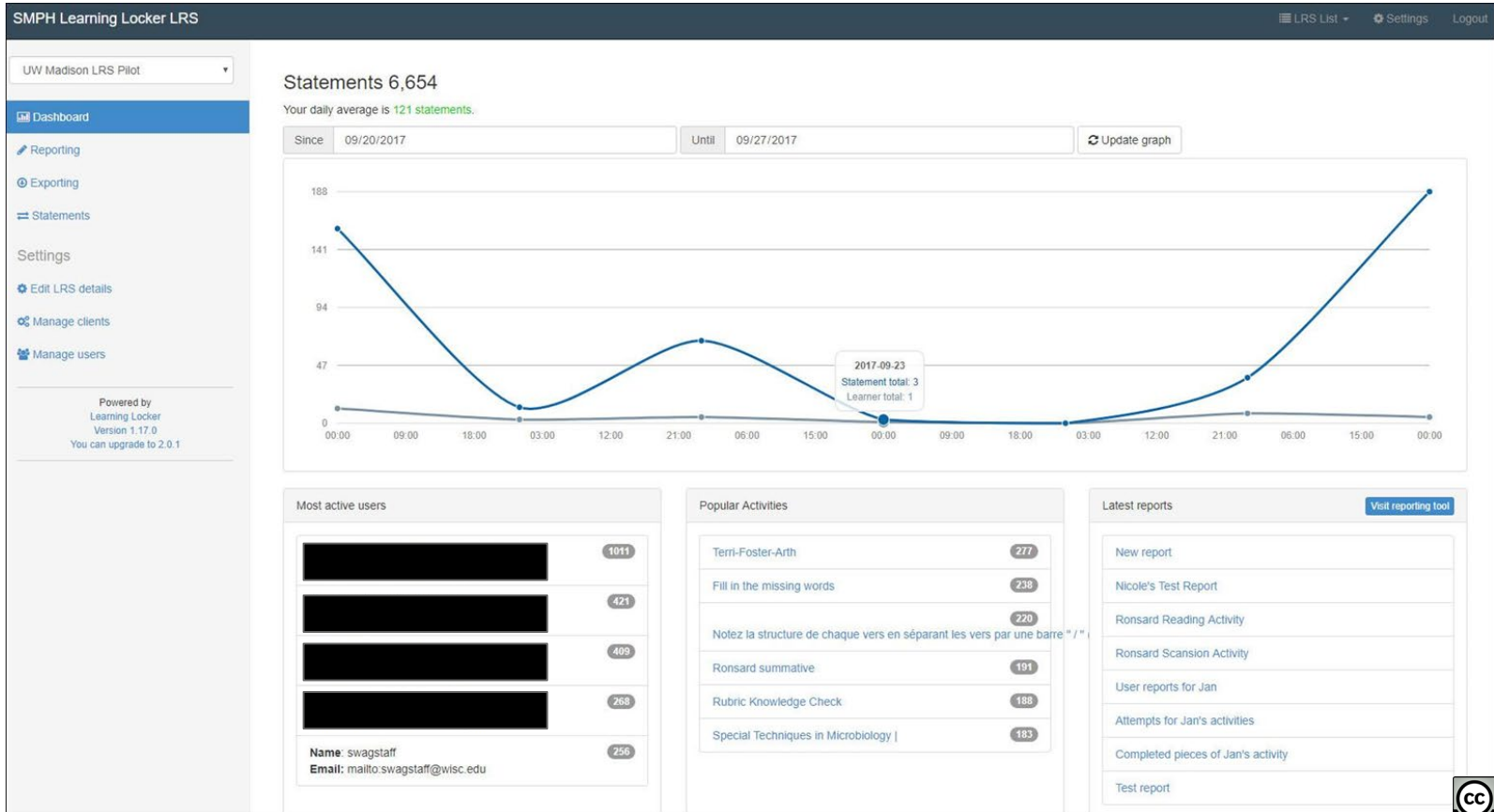


1&2: Stable but complicated

3: Stable [[Grassblade LRS](#)]

4: Experimental [Custom plugin built by devs at UW-Madison]

# Learning Record Store [ [Learning Locker](#) ]



# List of xAPI Statements

## Statements

- 1
- Guest 144.92.40.46 *experienced* [Vocab P1 Q2](#) | 2 days ago (Tue, Oct 3, 2017 10:29 AM)
  - Guest 144.92.40.46 *answered* [Pendant la bataille de Salamine, les Grecs ont combattu l'invasion des](#) | 2 days ago (Tue, Oct 3, 2017 10:29 AM)
  - Guest 144.92.40.46 *experienced* [Vocab P1 Q1](#) | 2 days ago (Tue, Oct 3, 2017 10:29 AM)
  - Guest 144.92.40.46 *experienced* [Vocabular Paragraph 1 Matrix](#) | 2 days ago (Tue, Oct 3, 2017 10:29 AM)
  - Guest 144.92.40.46 *experienced* [Introduction Camus Pt 2](#) | 2 days ago (Tue, Oct 3, 2017 10:28 AM)
  - Guest 144.92.40.46 *attempted* [Camus, L'exil d'Hélène \(partie 2\)](#) | 2 days ago (Tue, Oct 3, 2017 10:28 AM)
- 2
- swagstaff *attempted* [Fill in the missing words](#) | 2 days ago (Tue, Oct 3, 2017 10:07 AM)
  - swagstaff *attempted* [Ronsard summative](#) | 2 days ago (Tue, Oct 3, 2017 10:07 AM)
  - swagstaff *attempted* [https://wisc-dev.pb.unizin.org/ronsardvieille271dev/wp-admin/admin-ajax.php?action=h5p\\_embed&id=1?subContentId:](https://wisc-dev.pb.unizin.org/ronsardvieille271dev/wp-admin/admin-ajax.php?action=h5p_embed&id=1?subContentId:)
  - swagstaff *answered* [Fill in the missing words](#) | 2 days ago (Tue, Oct 3, 2017 9:54 AM)
  - swagstaff *interacted* [Fill in the missing words](#) | 2 days ago (Tue, Oct 3, 2017 9:54 AM)
  - swagstaff *attempted* [Fill in the missing words](#) | 2 days ago (Tue, Oct 3, 2017 9:54 AM)
  - swagstaff *answered* [Fill in the missing words](#) | 2 days ago (Tue, Oct 3, 2017 9:54 AM)
  - swagstaff *interacted* [Fill in the missing words](#) | 2 days ago (Tue, Oct 3, 2017 9:54 AM)
  - swagstaff *interacted* [Fill in the missing words](#) | 2 days ago (Tue, Oct 3, 2017 9:54 AM)

1. Statements generated by visitor to open text
2. Statements generated by known user (someone accessing the activity through the LMS)



# Sample xAPI Statement, Cont

Additional “context” is often very useful.

1. Parent activity
2. ‘Grouping’ information
3. Result information. Can include a numerical value (score), the response itself, as well as information about an activity’s completion state.

```
"context": {
  "contextActivities": {
    "parent": [
      1
      {
        "objectType": "Activity",
        "id": "https://wisc-dev.pb.unizin.org/ronsnardvieille271dev/wp-admin/admin-ajax.php?action=h5p_embed&id=7"
      }
    ],
    "category": [
      {
        "objectType": "Activity",
        "id": "http://h5p.org/Libraries/H5P.Blanks-1.8"
      }
    ],
    "grouping": [
      {
        "objectType": "Activity",
        "id": "https://wisc-dev.pb.unizin.org/ronsnardvieille271dev/chapter/quand-vous-serez-bien-vieille-sonnets-pour-helene/",
        "definition": {
          "type": "http://activitystrea.ms/schema/1.0/page",
          "name": {
            "en": " | “Quand vous serez bien vieille...” (Sonnets pour H\u00e9lène)"
          },
          "moreInfo": "https://wisc-dev.pb.unizin.org/ronsnardvieille271dev/chapter/quand-vous-serez-bien-vieille-sonnets-pour-helene/"
        }
      }
    ]
  },
  "extensions": {
    "http://id.tincanapi.com/extension/ending-point": 1
  }
},
"result": {
  "score": {
    3
    "min": 0,
    "max": 2,
    "raw": 2,
    "scaled": 1
  },
  "completion": true,
  "duration": "PT700.165",
  "response": "Ouir[,]entendre"
},
"authority": {
  "objectType": "Agent",
  "name": "Unizin PressBooks Dev",
  "mbox": "mailto:hello@learninglocker.net"
},
"stored": "2017-10-03T09:54:08.164200-05:00",
"timestamp": "2017-10-03T09:54:08.164200-05:00",
"id": "312e5d25-2061-4ee4-a35f-c8bab2821840"
}
```

# Learning Locker 'Reports'

**— Who**

In ▾

⊕ Additional Data  
⊕ Actor

**— Did**

In ▾

**— What**

In ▾

⊕ Type  
⊕ Extensions

**— Where**

⊕ registration  
⊕ extensions  
⊕ contextActivities

⊕ Metadata

**— Result**

⊕ Scaled  
⊕ Response  
⊕ Complete  
⊕ Success  
⊕ Raw result  
⊕ Max result  
⊕ Min result  
⊕ extensions

**— When**

⊕ Timestamp  
⊕ Stored

> contentauthtest05@gmail.com answered What LMS is UW-Madison moving to?	3 months ago
> contentauthtest05@gmail.com interacted What LMS is UW-Madison moving to?	3 months ago
> contentauthtest05@gmail.com attempted What LMS is UW-Madison moving to?	3 months ago
> contentauthtest06@gmail.com passed DanStorylineDEV0006	10 months ago
> contentauthtest06@gmail.com passed DanStorylineDEV0006	10 months ago
> contentauthtest06@gmail.com experienced Results Slide	10 months ago
> contentauthtest06@gmail.com answered When was the University of Wisconsin System merged with the Wisconsin State Universities system?	10 months ago
∨ contentauthtest06@gmail.com experienced When was the University of Wisconsin System merged with the Wisconsin State Universities system?	10 months ago

```
{
  "stored": "2018-05-22T19:17:29.616Z",
  "active": true,
  "completedForwardingQueue": [],
  "failedForwardingLog": [],
  "client": "5a9dc9e73158e805db024c41",
  "lrs_id": "5a564bc7303fb305f714323f",
  "completedQueues": [
    "STATEMENT_QUERYBUILDERCACHE_QUEUE",
    "STATEMENT_PERSON_QUEUE",
    "STATEMENT_FORWARDING_QUEUE",
    "STATEMENT_JOURNEY_QUEUE"
  ],
  "activities": [
    "http://DanStorylineDEV0006/6gCRNDtnrE"
  ],
  "hash": "8ce8fb517569e040e0e046821c02874b18efebf1",
  "agents": [
    "mailto:contentauthtest06@gmail.com"
  ],
  "statement": {
    "authority": {
      "objectType": "Agent",
      "name": "New Client",
```

**At left:** Statements can be filtered by actor (who), action (did), object (what), location (where), result, and time (when).

**At right:** These filters can be used to create custom reports with specific subsets of statements in the LRS.



# Learning Locker Visualizations



Sample interactive visualizations built in a Learning Locker Dashboard from xAPI statements [ [source](#) ]



# OER At Penn State



Multiple efforts, multiple units

- Library
- Earth and Mineral Sciences
- Rock Ethics Institute
- OER Schema
- ELMS:LN
- HAXTheWeb



## Penn State - Library

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- Assessment and discovery of OER
- Adopting, adapting, or creating OER
- Open and OER outreach
- **Pressbooks**
- Creative Commons Licensing
- Open Textbook Network



# Penn State - EMS

**OPEN.ED@PSU**  
Open Education Resources  
Hosted by Penn State's College of EMS

HOME

COURSES

ABOUT

TERMS OF USE

HOW TO HELP

CONTACT US

Search



**76**

Courses Entirely  
Online

**77**

Faculty Members  
Involved

**1631**


Topics Explored

**21**

Programs  
Represented




# Penn State - EMS



PennState  
College of Earth  
and Mineral Sciences

DEPARTMENT OF  
**GEOGRAPHY**

GEOG 885  
**ADVANCED ANALYTIC METHODS IN GEOSPATIAL INTELLIGENCE**



HOME SYLLABUS LESSONS CANVAS RESOURCES LOGIN

## What is Intelligence Analysis?



The following is a summary of parts of the RAND report [Assessing the Tradecraft of Intelligence Analysis](#).

"Analysis" in the U.S. Intelligence Community has many meanings. The multiple components of the analysis cycle began with policymakers and military leaders, whose concerns would be turned into taskings for the major collectors. The take from those collectors is then processed at various levels, ultimately to be incorporated into all-source analysis, then disseminated back to policymakers and leaders. The cycle notionally distinguishes between intelligence sources and the analytic processes that are used to transform the raw data from these sources into intelligence products.

The intelligence cycle may be contrasted with the intelligence analytic cycle, which, according to the RAND report, typically includes three forms of analysis—technical processing analysis, single discipline analysis, and all-source analysis. However, the distinction between the first two types and all-source analysis is being blurred because of this use of tools, such as GIS, to integrate multiple intelligence sources. Some suggest a continuum in the forms of analysis from collection system outputs at one end to analysis at the other. Along this continuum, there is a transition region where the data is used to support analysis. Past this transitional area, analysis splits into puzzle-solving and mystery-framing.

A puzzle tests the ingenuity of the solver and is "solved" with information. In a puzzle, one pieces together the puzzle pieces in a logical way in order to come up with the solution. In the past, a common intelligence puzzle was to piece together intentions based on capabilities. Puzzle-solving involves pulling together many sources of data and information and, using that evidence, identifying new patterns or trends and

### GEOG 885 Advanced Analytic Methods in Geospatial Intelligence

Search

#### Lessons

- ▾ Lesson 01: Course Introduction and Review of Critical Concepts
  - Introduction
  - Review: What is Intelligence?
  - Intelligence Process
  - **What is Intelligence Analysis?**
  - Is Geospatial Intelligence Analysis an Art or Science?



# Penn State - | SCHEMA



## Schema

v0.3.4

- Resource
  - Course
  - CourseSection
  - CourseSyllabus
- LearningComponent
  - InstructionalPattern
    - Assessment
      - Quiz
      - Submission
    - Lesson
    - Module
    - Task
      - Activity
        - Project
      - Practice
    - Unit
  - SupportingMaterial
- LearningObjective
- Topic

<http://oerschema.org/>



# Penn State - Rock Ethics Institute

THE ROCK ETHICS INSTITUTE  
ETHICAL DIMENSIONS OF SCIENTIFIC RESEARCH MASTER SECTION

Meet the Challenge. Stand Up. Make a Difference.

Section 1. Introduction to the Ethical Dimensions of STEM Research

- Research Integrity
- Embedded Ethics
- Broader Impacts

Working with scientists and engineers has helped us appreciate the relevance of ethics to many aspects of the work done by STEM researchers. This video provides an introduction to a broader model of the ethical dimensions of research in STEM fields, including research ethics, broader impacts, and embedded ethics.

00000 Intro to EDSR

ENGINEERING IMPACTS  
ENGINEERING IMPACTS MASTER SECTION

Case 3: Geoengineering for Climate Change

Case 3: Introduction  
Understanding Relevant Conditions  
One Particular Example  
Identifying Embedded Values  
Ongoing Reflection Needed  
Case 3: Summary

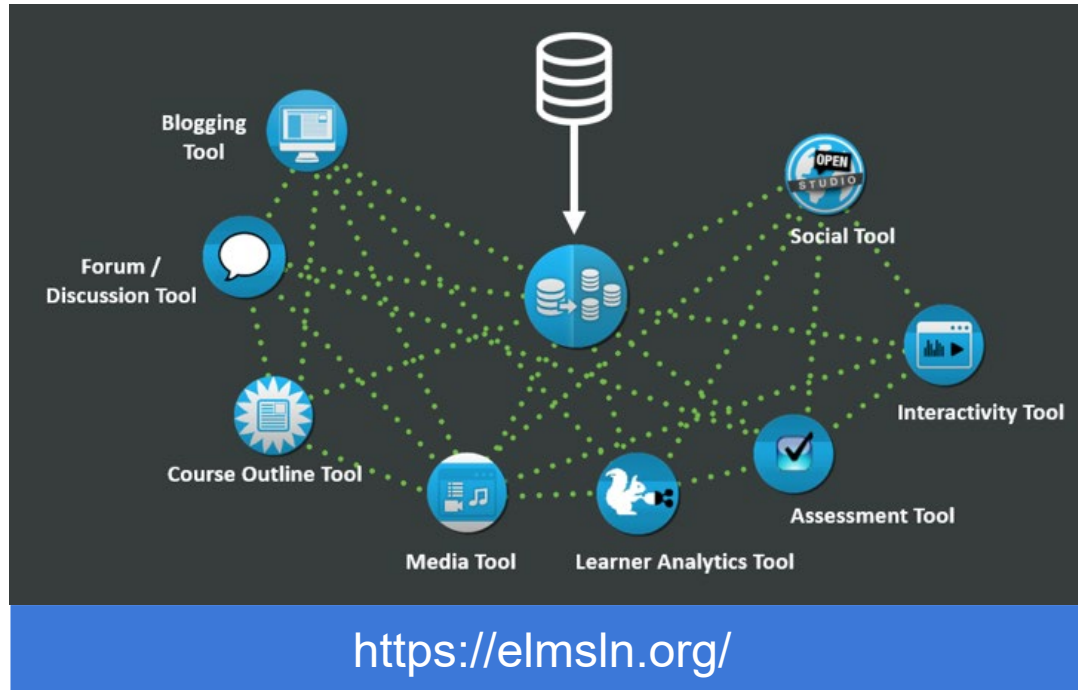
### Case 3: Geoengineering for Climate Change

In the third case, our focus is on questions of complexity and uncertainty in engineering solutions to difficult problems. We'll use the example of geoengineering as a potential design solution for the negative impacts on climate change as a case study focus here. Thinking about the values that are embedded in engineering discussions and decisions around geoengineering exemplifies the important role of embedded ethics in the paradigm of research integrity.

<http://stem-researchethics.org>



# Penn State - NGDLE

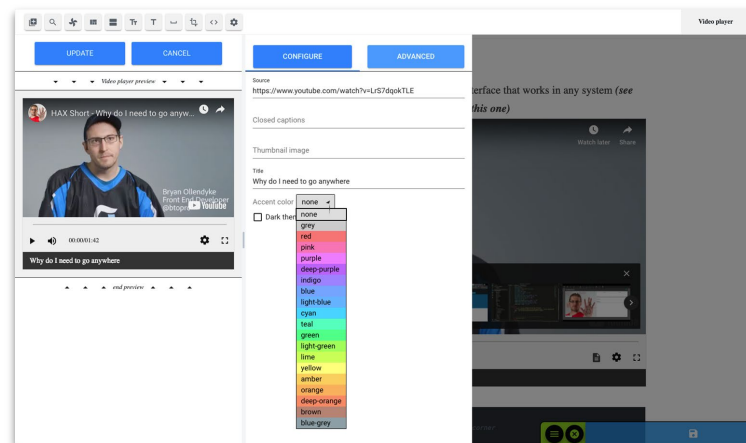
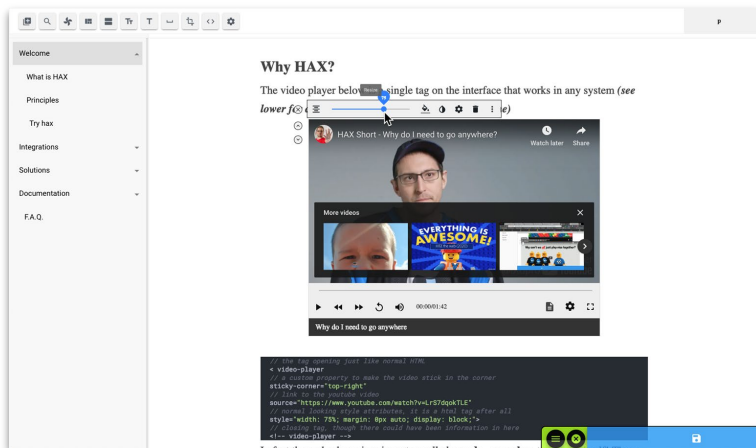








# Penn State - HAX Authoring Solution



<https://haxtheweb.org/>



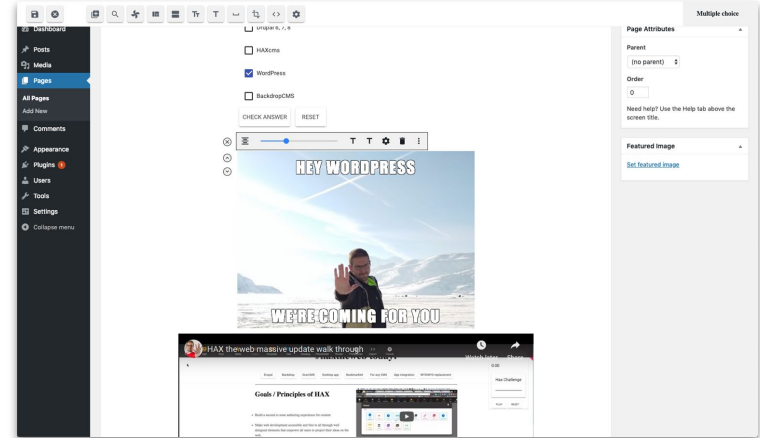
# Penn State - HAX Authoring Solution

HAXTheDemo



# Penn State - HAX Authoring Solutions

- WordPress
- Drupal 6, 7, 8
- GravCMS
- BackdropCMS
- HAXcms
- Desktop (future)



<https://haxtheweb.org/>



# OER + LA at Oklahoma State University Library

- Passion project → strategic plan
  - Long term plan
  - Articulate your values
  - LA goals: WHAT to measure & HOW
  - Externalize/document the process
- Values vs. the market – it can be both!



# OER + LA at Oklahoma State University Library

“...‘**digital sanctuaries**’...[that] minimize risks to students associated with the technologies they encounter at our institutions.”

- Amy Collier

# Pressbooks for Open Textbooks



# xAPI for Open Tutorials

Storyline 3 + Wordpress + Grassblade plugin + Grassblade LRS



The screenshot displays an Articulate Storyline interface for a "Library Tour" application. The main content area features a dark silhouette of a building with a white polka-dot tower. To the left of the building is a menu with three options: "Basement", "1st Floor", and "2nd Floor". The "Basement" option is currently selected and highlighted with a blue border. Below the building, the text "Library Tour by" is visible, along with a "Main Menu" button. A "JavaScript" trigger configuration window is open on the right side of the screen. The window has a title bar with "JavaScript" and a close button. The configuration area includes fields for "Trigger W" (partially visible), "Action:", "Script:", "When:", and "Object:". The "Script" field contains the following JavaScript code: 

```
send_statement('http://librarytutorial.com/xapi/experienced', 'experienced', 'http://librarytutorial.com/selectafloor', 'Basement', 'in the library tutorial select a floor');
```

 At the bottom of the window are "OK" and "CANCEL" buttons.

*Articulate Storyline 3 with JavaScript trigger*



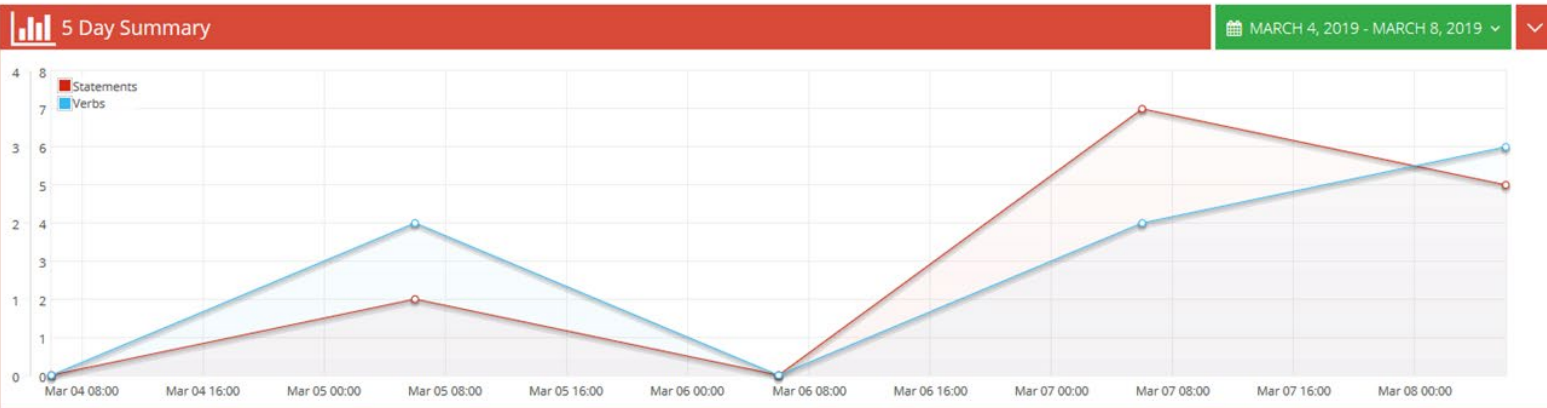


- Dashboard
- Users
- Groups
- Reports
- Activity Stream
- Activity Stream
- Filters
- Parent Level Activities
- Question Attempts
- Verbs
- Activities
- Agents
- Attempts Report

## Activity Stream

Home > Reports

Actions



	B	C	D	E	F	G	H
1	IP	readable_timestamp	agent_id	verb	objectid	object name	object description
2		March 7, 18:35:02	tester3136@test.com	experienced	https://tutorials.library.okstate.edu	Map Menu	in the library tutorial map menu
3		March 7, 18:24:14	tester362@test.com	interacted	http://librarytutorial.com/basement	BasementMap	in the library tutorial basement map
4		March 7, 18:22:51	tester3671@test.com	initialized	http://example.com/testbutton	Start Button	in the tutorial video

*Grassblade LRS & subsequent Excel data output*



4

## Ethical & Legal Considerations

Developing responsible LA policies  
& safeguarding learner privacy



## Consequences of LA

“All along the way, or perhaps somewhere along the way, we have **confused surveillance for care** ...when you work for a company or an institution that collects or trades data, **you’re making it easy to surveil people and the stakes are high**. They’re always high for the most vulnerable. By collecting so much data, you’re making it easy to discipline people. You’re making it easy to control people. You’re putting people at risk. **You’re putting students at risk**”

- Audrey Watters

Watters, A. (2017, February). *Ed-tech in a time of Trump*. Presentation at the University of Richmond. Retrieved from <http://hackeducation.com/2017/02/02/ed-tech-and-trump>



# Rethinking LA

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In higher education, we need to pay attention to the demands we place on students to produce data. ...**We need to recognize and deconstruct our perspectives on the relationship of data to our understanding of student learning.”**

- Amy Collier

Collier, A. (2017). Digital sanctuary: Protection and refuge on the web? *EDUCAUSEreview*, September/October 2017, 56-57. Retrieved from <https://er.educause.edu/articles/2017/8/digital-sanctuary-protection-and-refuge-on-the-web>



# 5 Questions to Ask About Ethics of LA Use

What option(s)....

1. Leads to the most positive consequences?  
Benefits/harms/ alternatives?
2. Respects students' rights?
3. Ensures equity?
4. Advances the common good?
5. Enables moral virtues?



# Legal Requirements (overly simplified)

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1. FERPA
2. IRB
3. GDPR
  - a. OER = Global traffic = EU Traffic
  - b. Must prompt before any storage
  - c. Right to be forgotten protections

# Other Considerations

## Practical questions:

1. What is our policy for storing these records?
2. What is our policy for disposing of these records?
3. How do we control access to LA records?

## Philosophical questions:

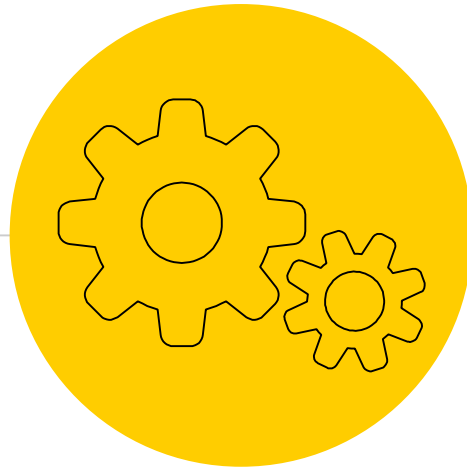
1. Who owns the records of learner activity?
2. Who is learning analytics primarily for? [Steel's view](#)



# Frameworks for Ethical Data Use to Consider

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# Questions?

Type your questions in the chat.



# Thanks!

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