

Sharing Learning Resources

Paul Jesukiewicz.
Booz Allen Hamilton

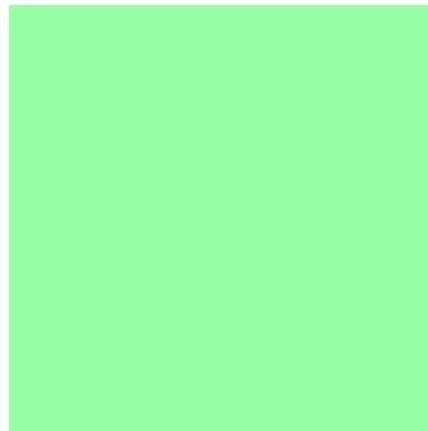
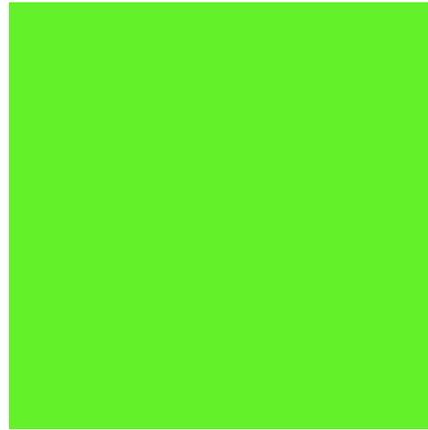
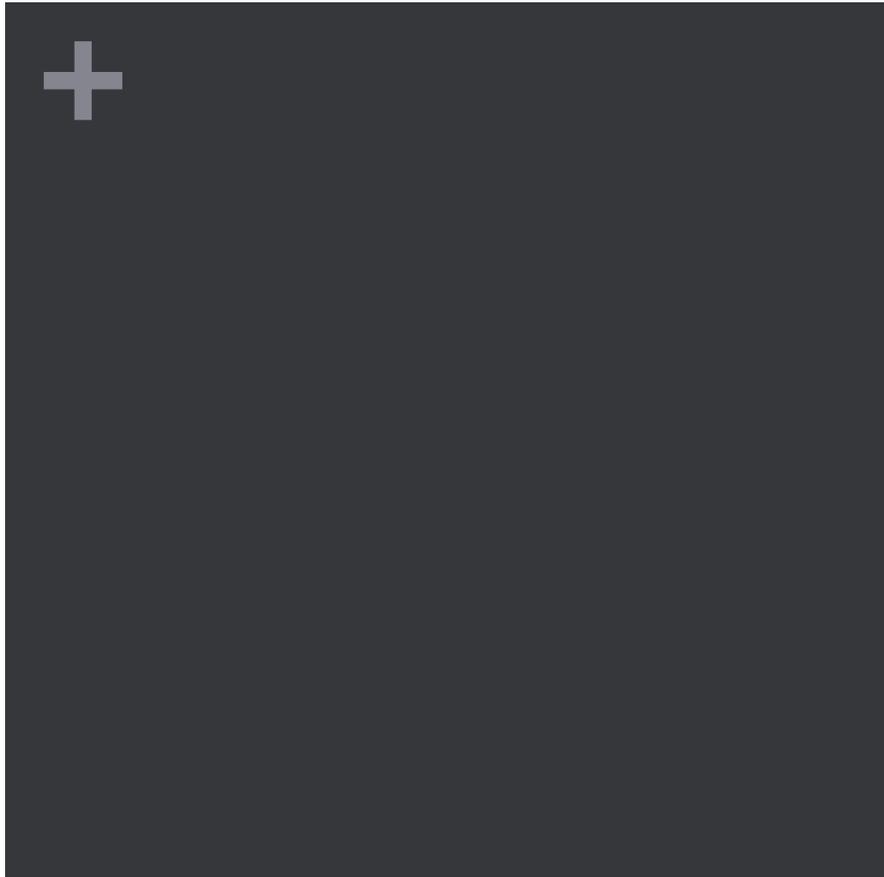
Daniel R Rehak, PhD.
Advanced Distributed Learning Initiative

@learningreg

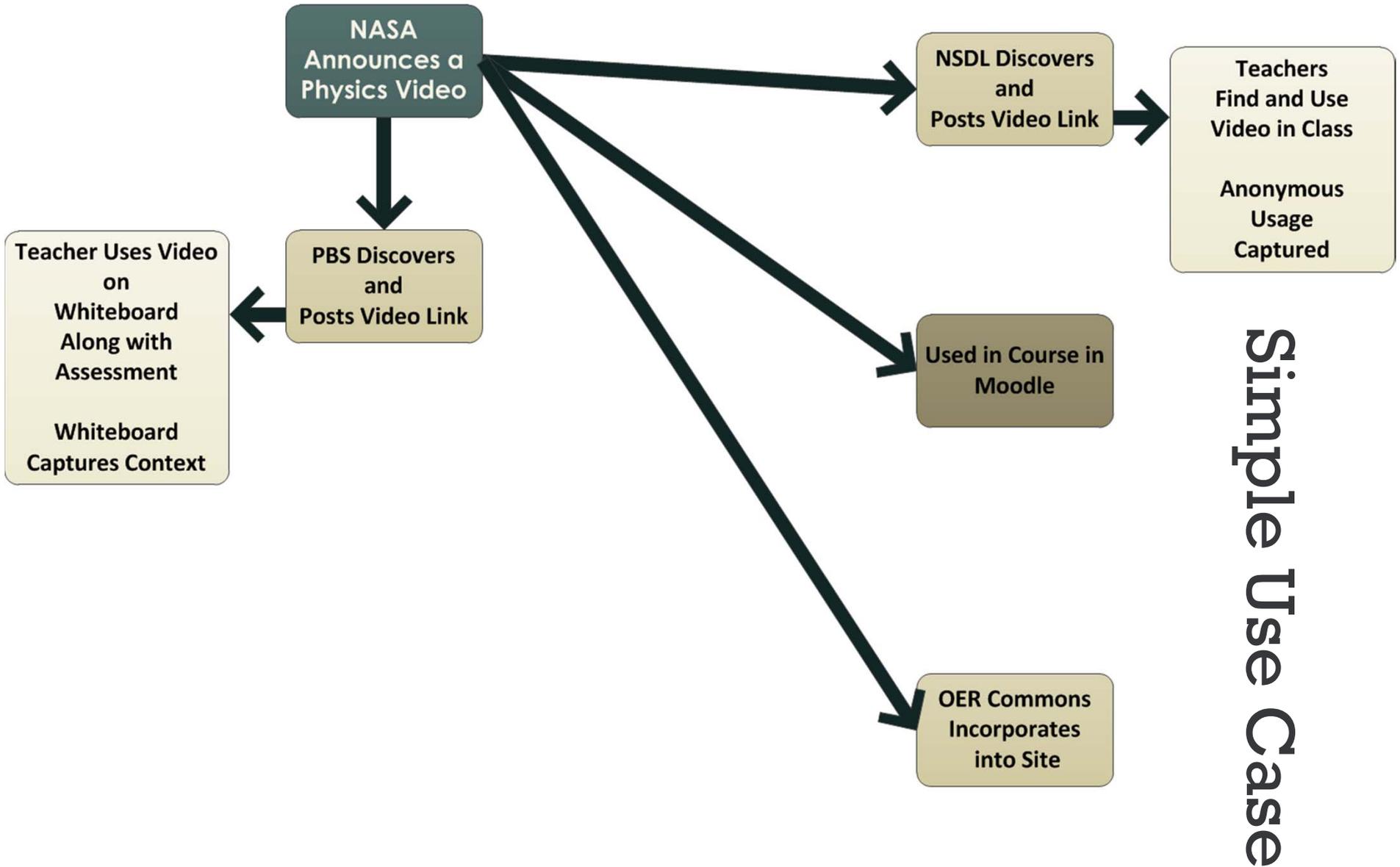
+ #learningreg

learningregistry.org

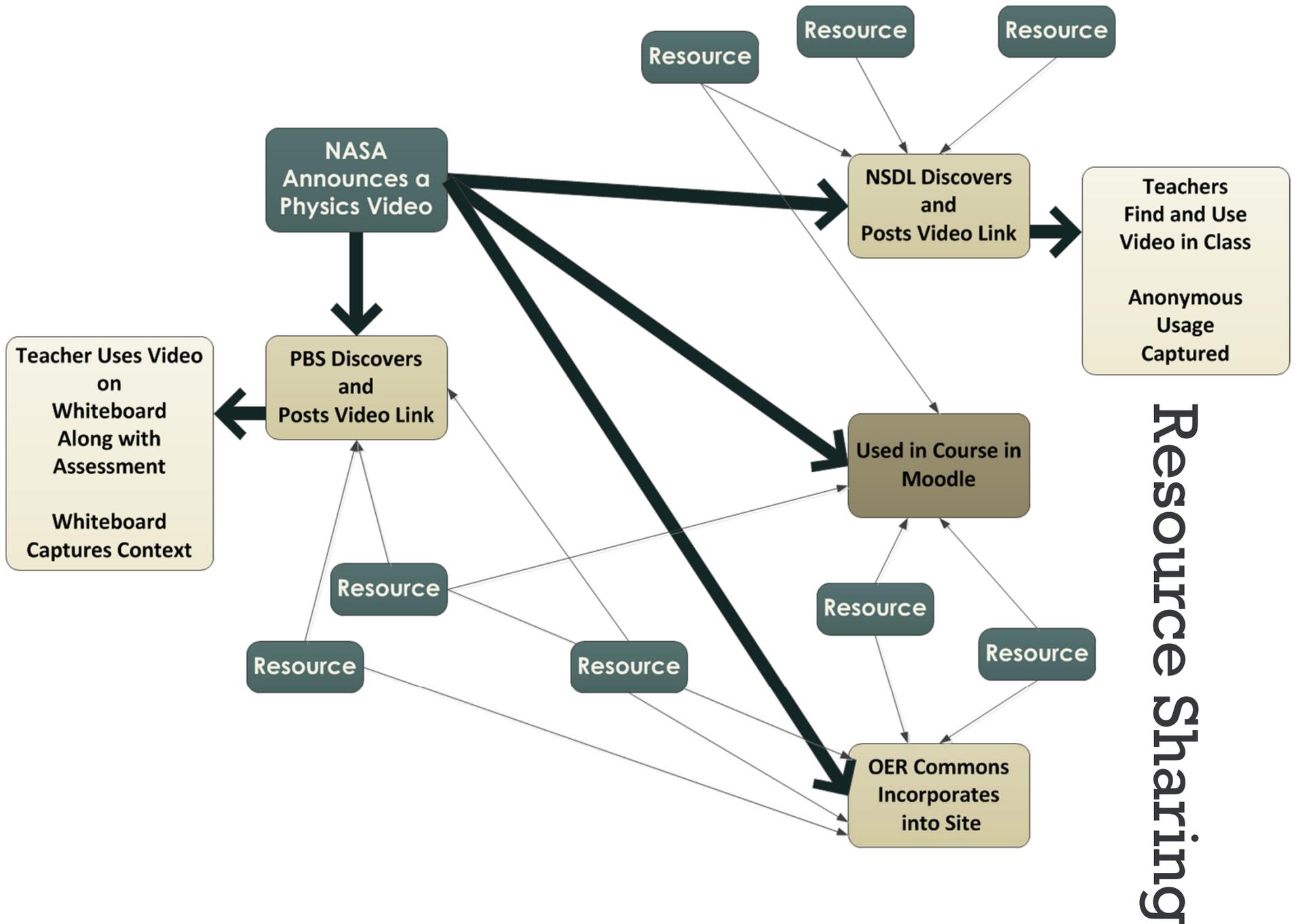


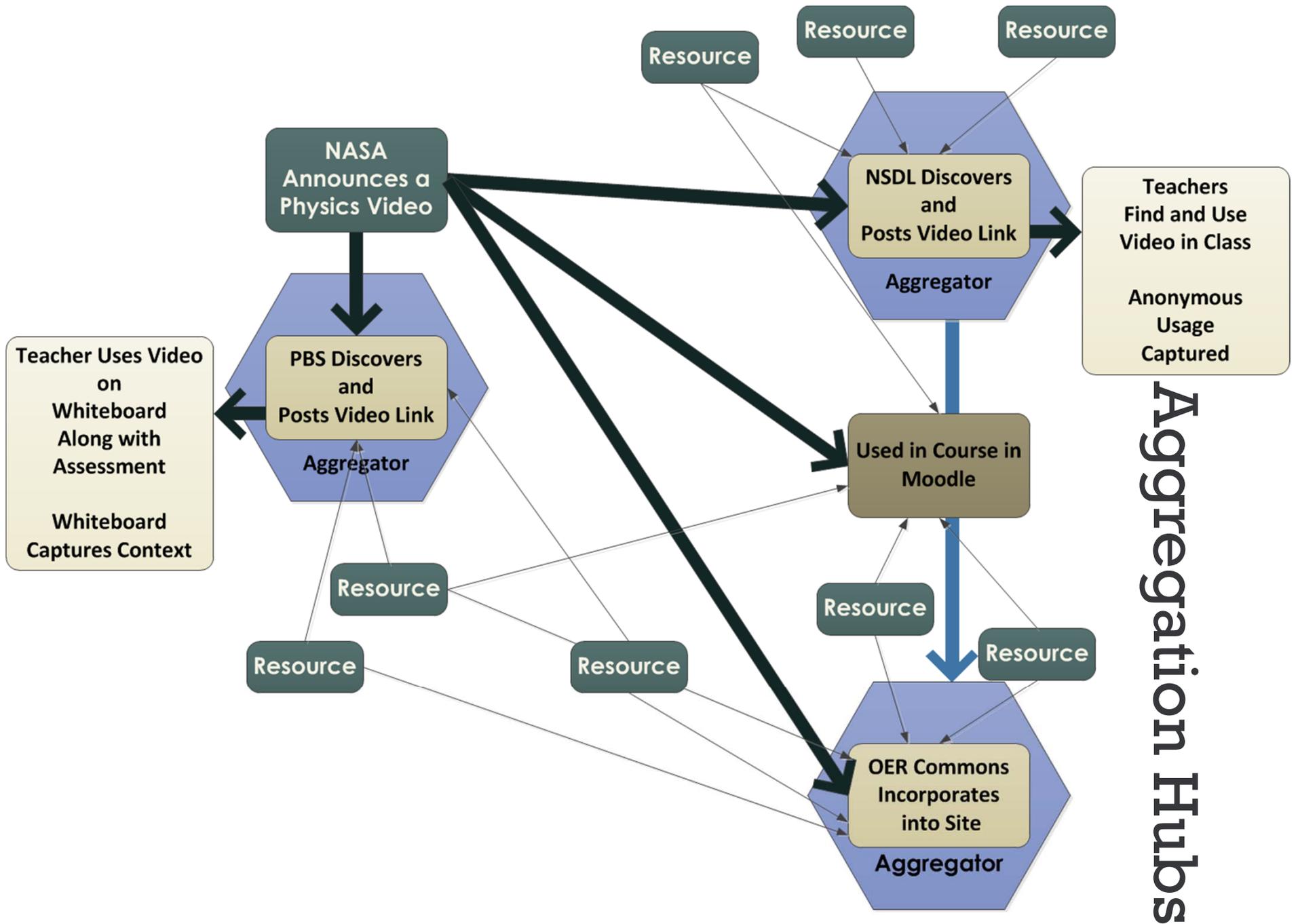


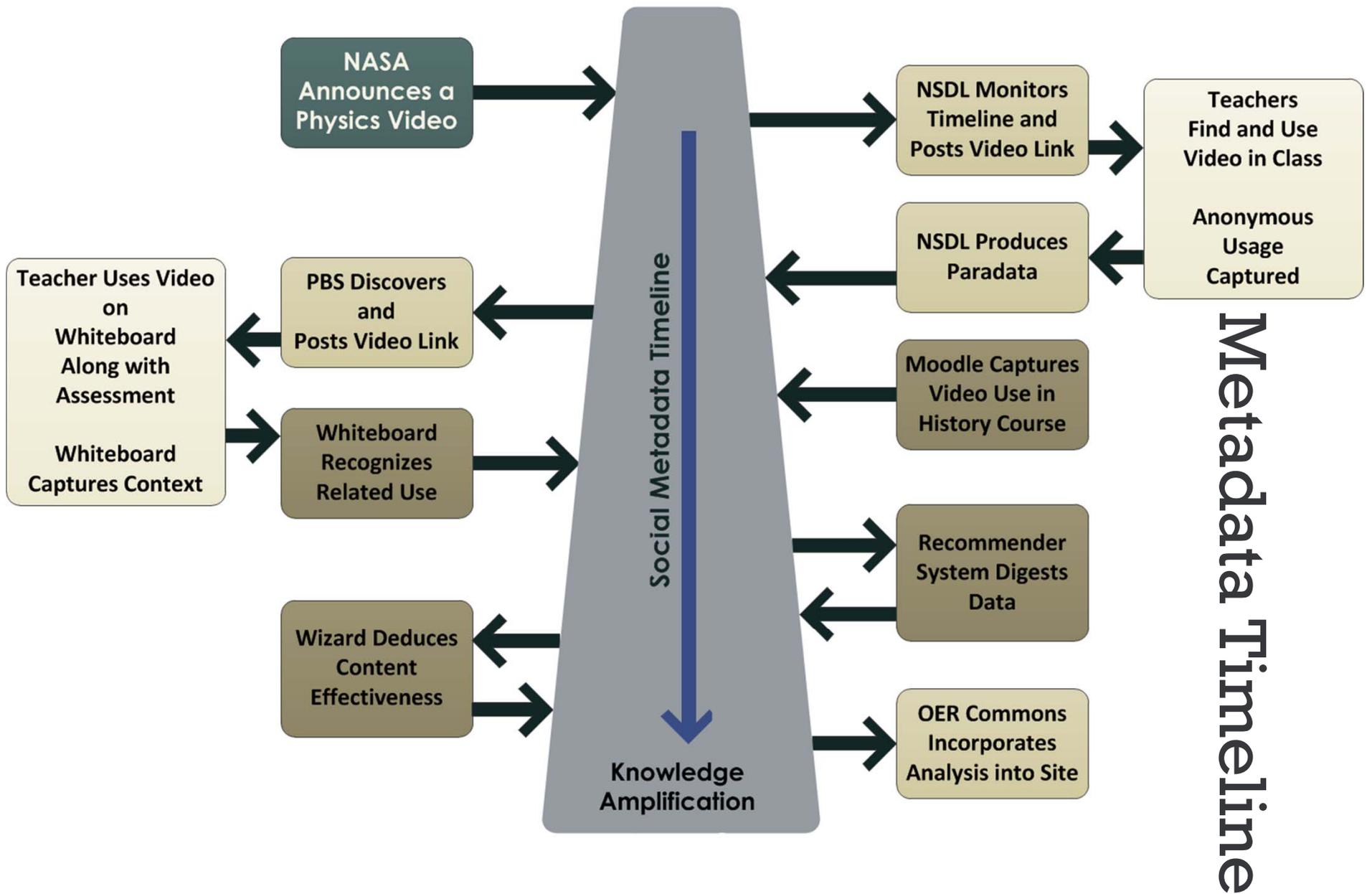
The Problem



Simple Use Case









***An abundance of content,
a lack of data sharing,
+ lost data exhaust,
limited feedback,
a legacy environment.***

We don't know what content has a positive effect on learning.

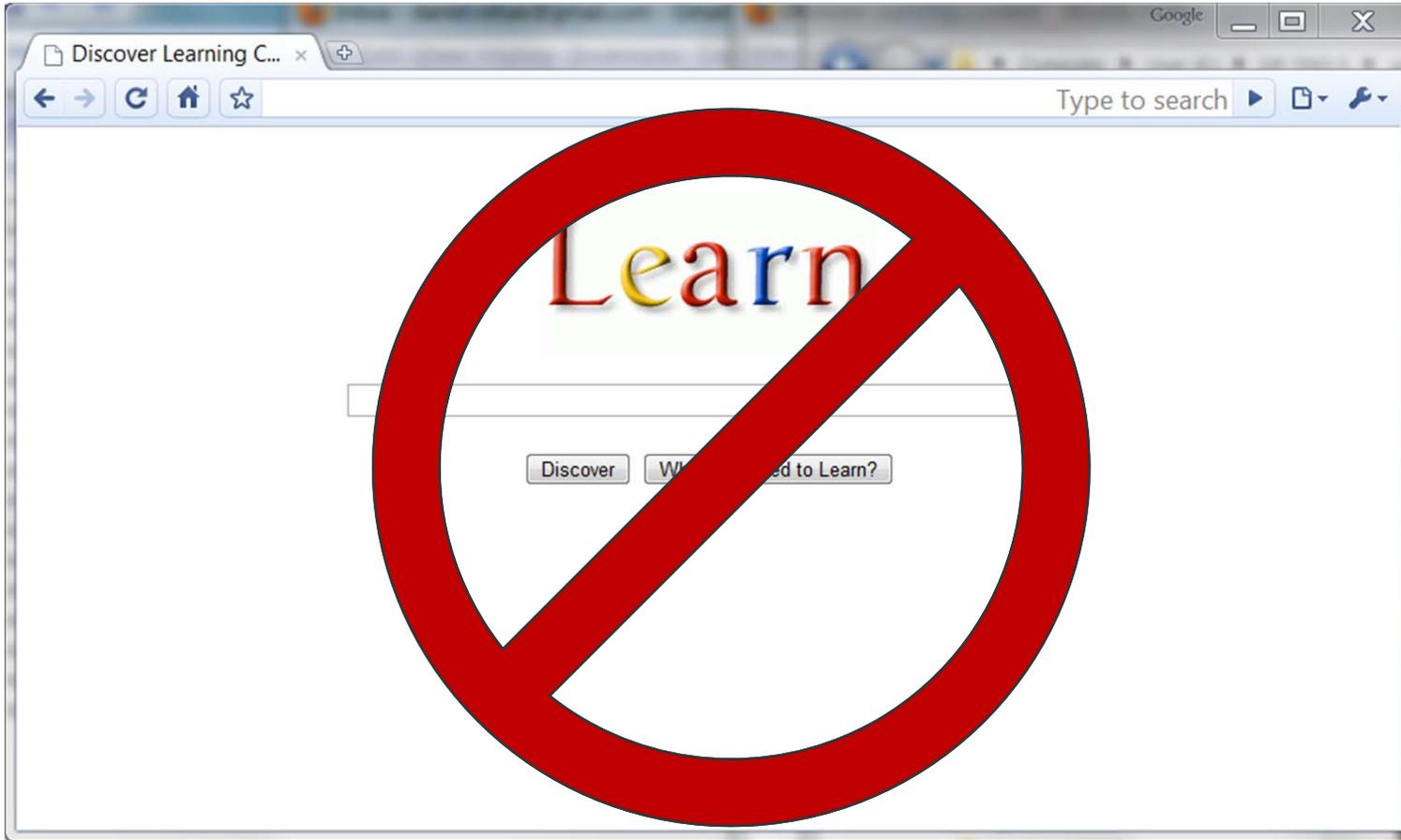


***A concept,
a research project,
a community project,
+ a codebase,
a public social metadata
distribution network.***

What is the Learning Registry?



Enough Custom Portals

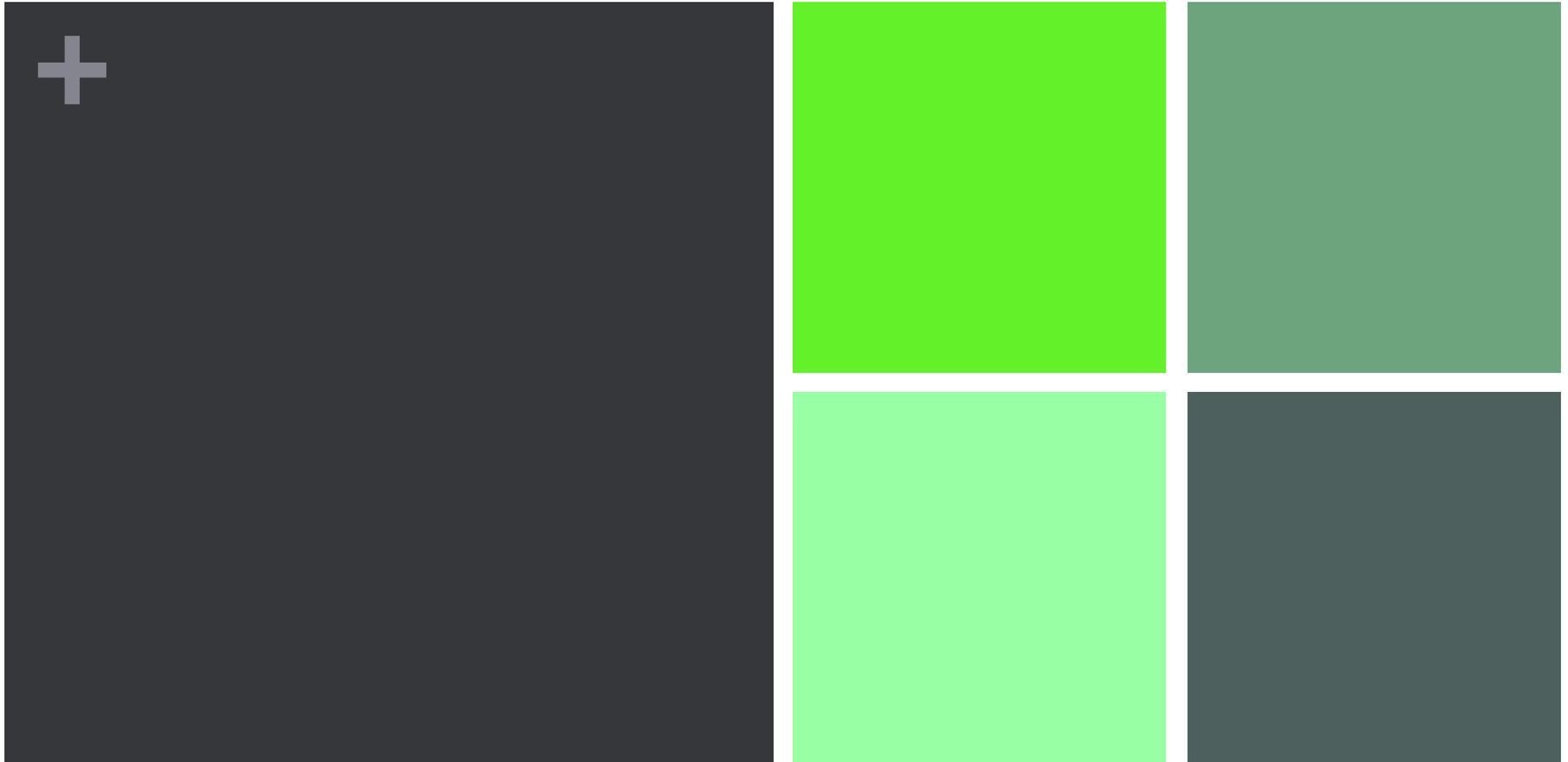




***We want to enable a
learning layer on Web 2.0***

+

Innovate the infrastructure, not the interface.



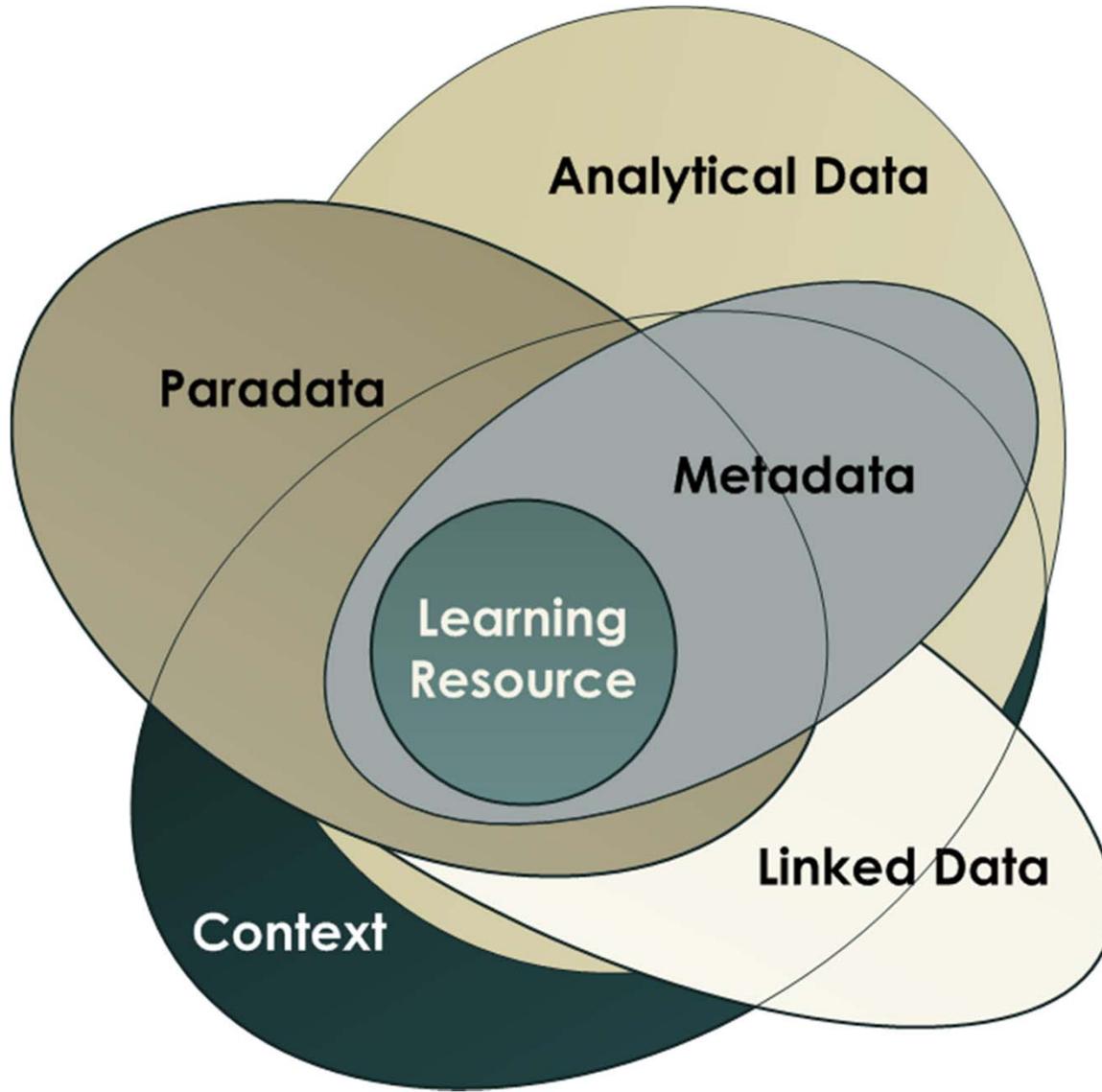
The Learning Registry Approach

+ Be Enabling

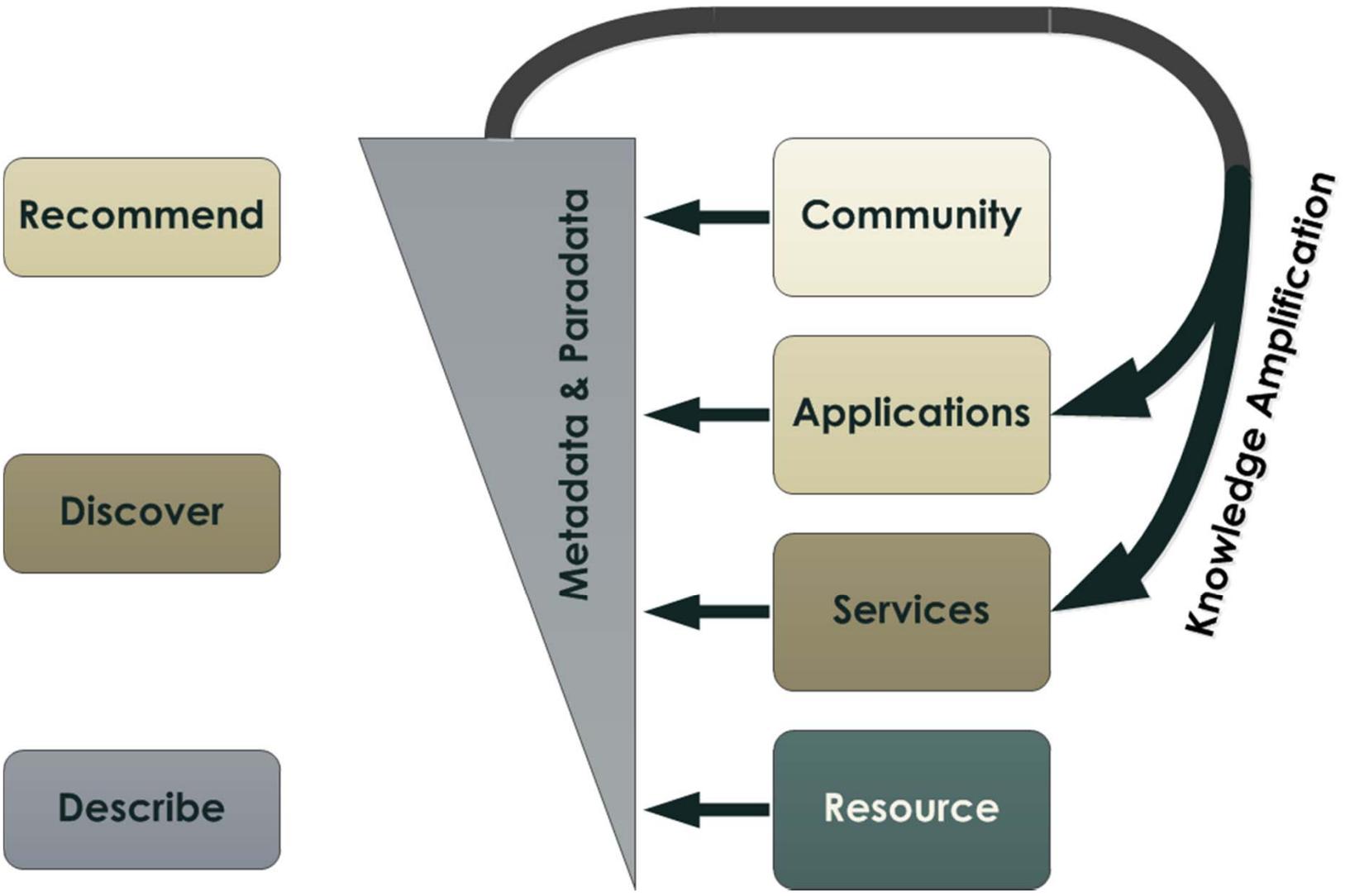


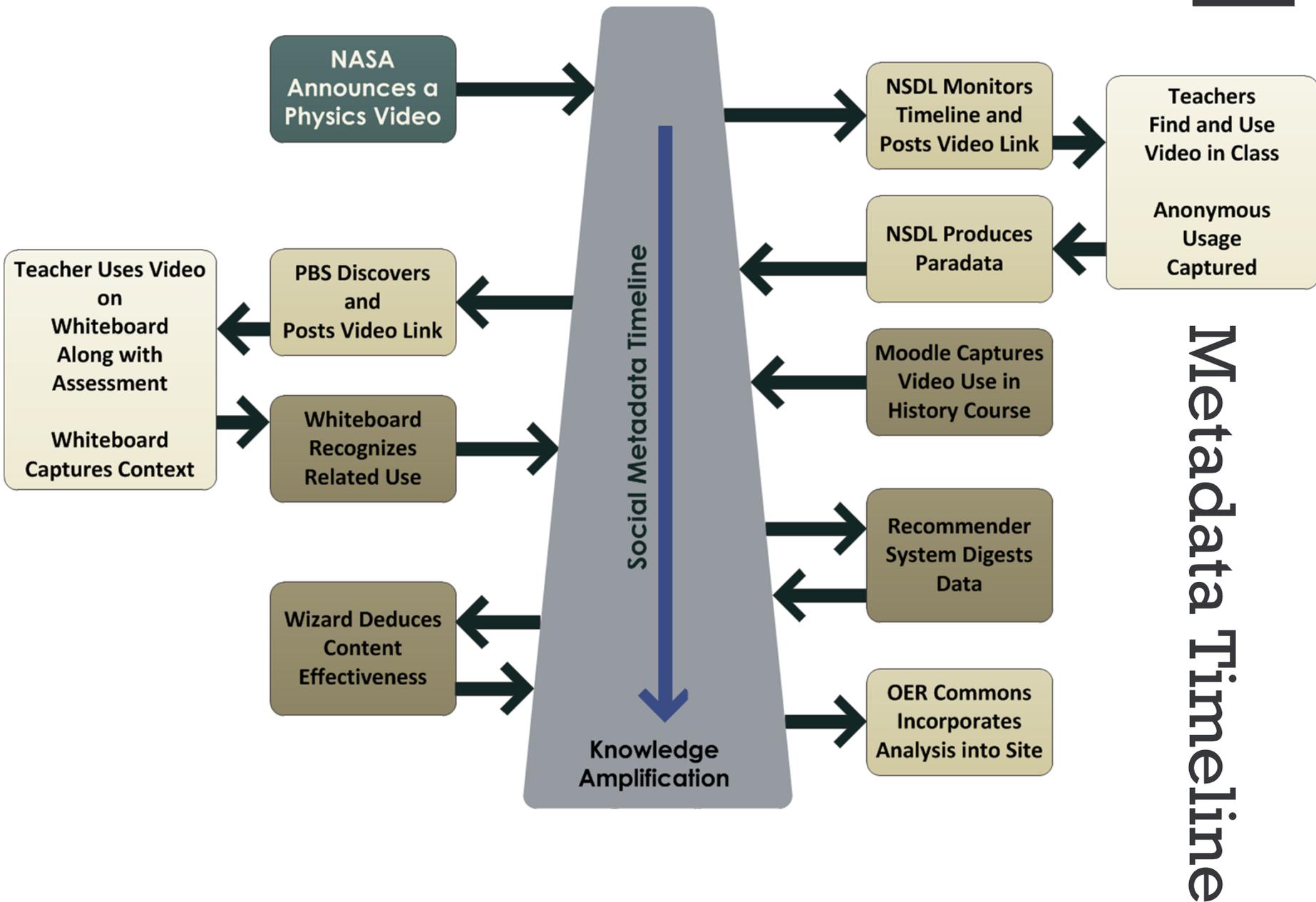
- Provide capabilities not solutions
- Let anyone participate
- No default “winners”
- No single point of failure or control
- Anyone can provide information on anything
- Identity and trust exist
- Re-aggregation and sharing is natural
- Usage/utility is shared
- As simple as possible

■ +
Resources, Context, Data

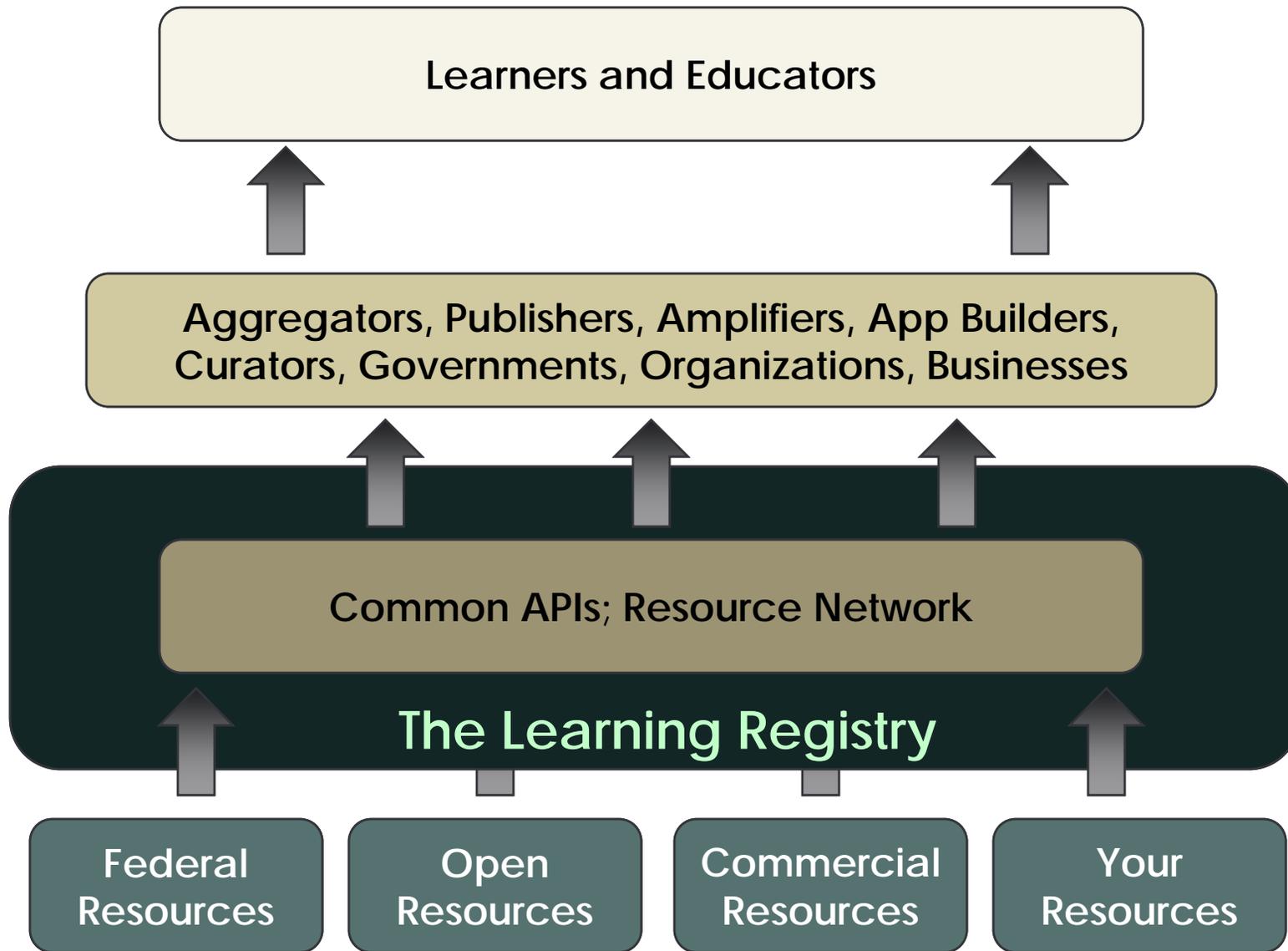


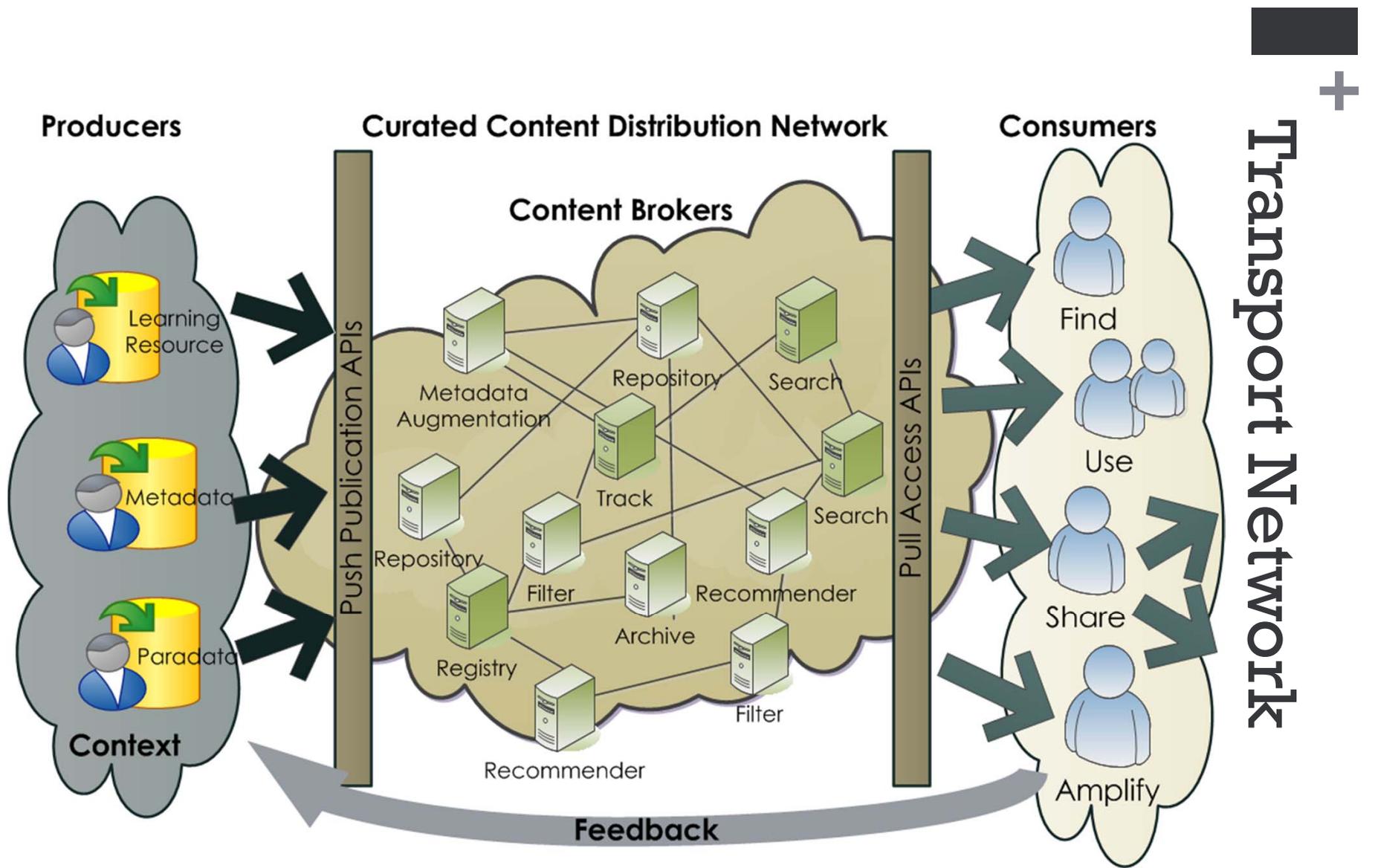
■ + Knowledge Amplification





■ + Learning Registry Stack





+ Learning Registry Resource Data



- Resource Locator (resource identity: URL)
- Who's providing the data (identity: submitter, owner, curator)
- Terms of service (URL, optional)
- Digital Signature (OpenPGP, for trust)
- Hashtags (recommended)
- Formal “metadata” (optional, any schema)
- Workflow stuff (message IDs, versions, times, transit nodes)
- Weight (Confidence)
- *In JSON, Document-oriented, schema-free database*

+ Paradata Model



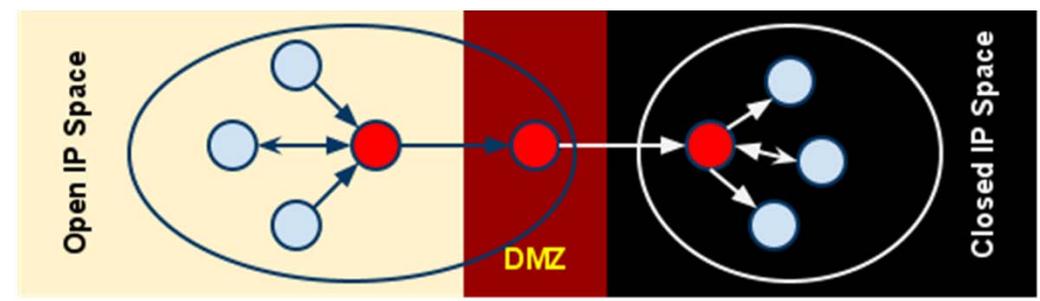
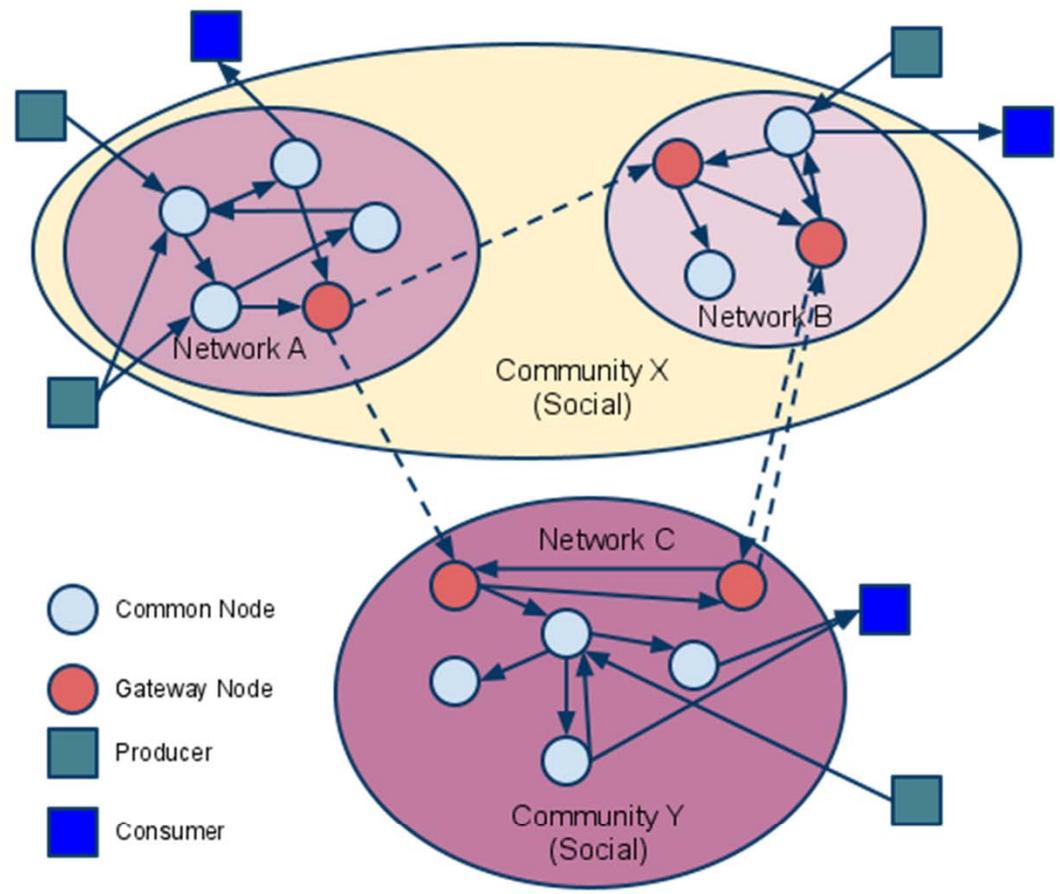
- The **submitter** asserted that
- An **actor** (with a set of **attributes**)
- Performed an **action** (within a **context**, on a **date**, with some **measures**)
- To an **object** (with a set of **attributes**)
- **Related** to other objects

“NSDL” (submitter) asserted that “2104 10th grade physics teachers “ (teachers with attributes) “rated” (action) the “classroom resource @ URL X” (object with attributes) from “NASA educational web site” (context) an average of “4.4 out of 5 stars” (measure) during “May 2011” (date) when used for “objective Z in the Common Core” (related objects)

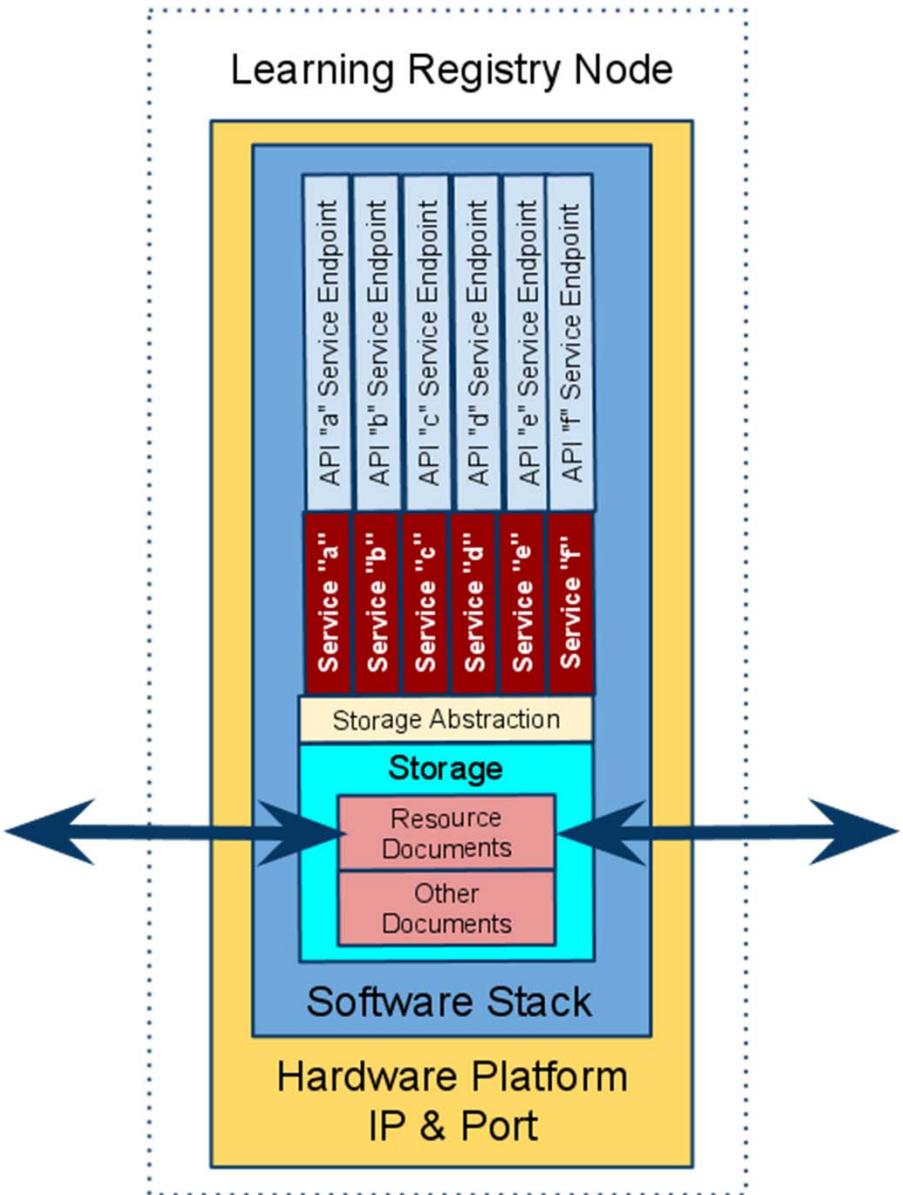
+ Learning Registry APIs

- Publish (push from user)
 - Publish
 - SWORD (1.3, 2.0)
 - 3rd party OAI-PMH Utility (We don't harvest)
- Access (pull to get data)
 - Obtain (by ID, record, by URL)
 - Harvest (JSON or OAI-PMH)
 - Slice (subset by identity, schema, keyword)
- Distribute (node-to-node, with regex “filtering”)
- Admin (status, discovery, ...)
- NO Search/Query API! (e.g., use Elastic Search)

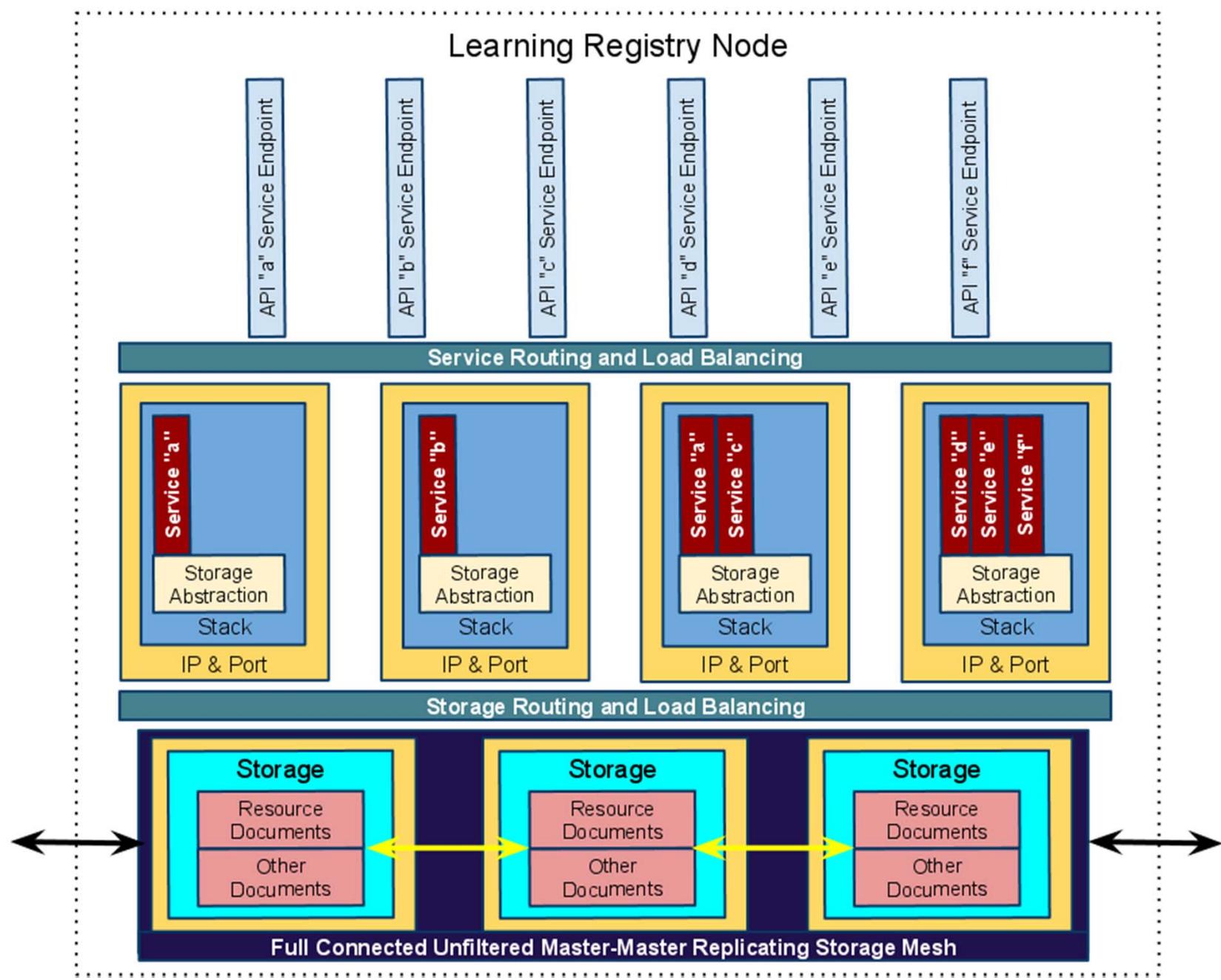
Networks, Communities



■ + NoSQL Master-Master Filtered Content Distribution Network Node



Node Structure





***Examples of value added
services using the
+ Learning Registry Network.***

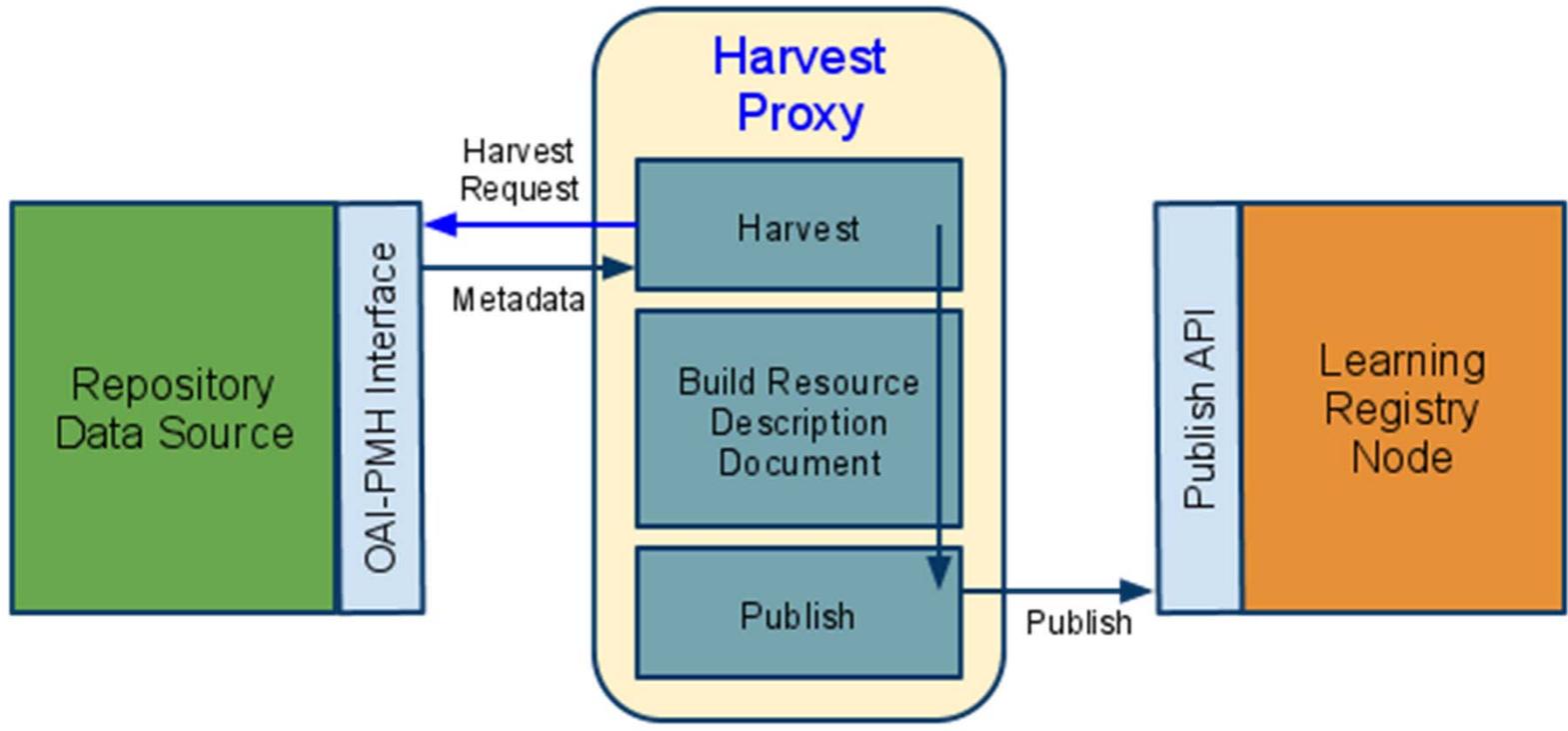
We're just building the plumbing.

+ Prototype Implementation

- RESTful APIs
- Data-driven policies and descriptions
- CouchDB (NoSQL) storage and master-master replication
- Map-Reduce views
- Python Apps layer
 - Abstracts Couch
- Test and development network
- Public production network; Amazon EC2 hosted



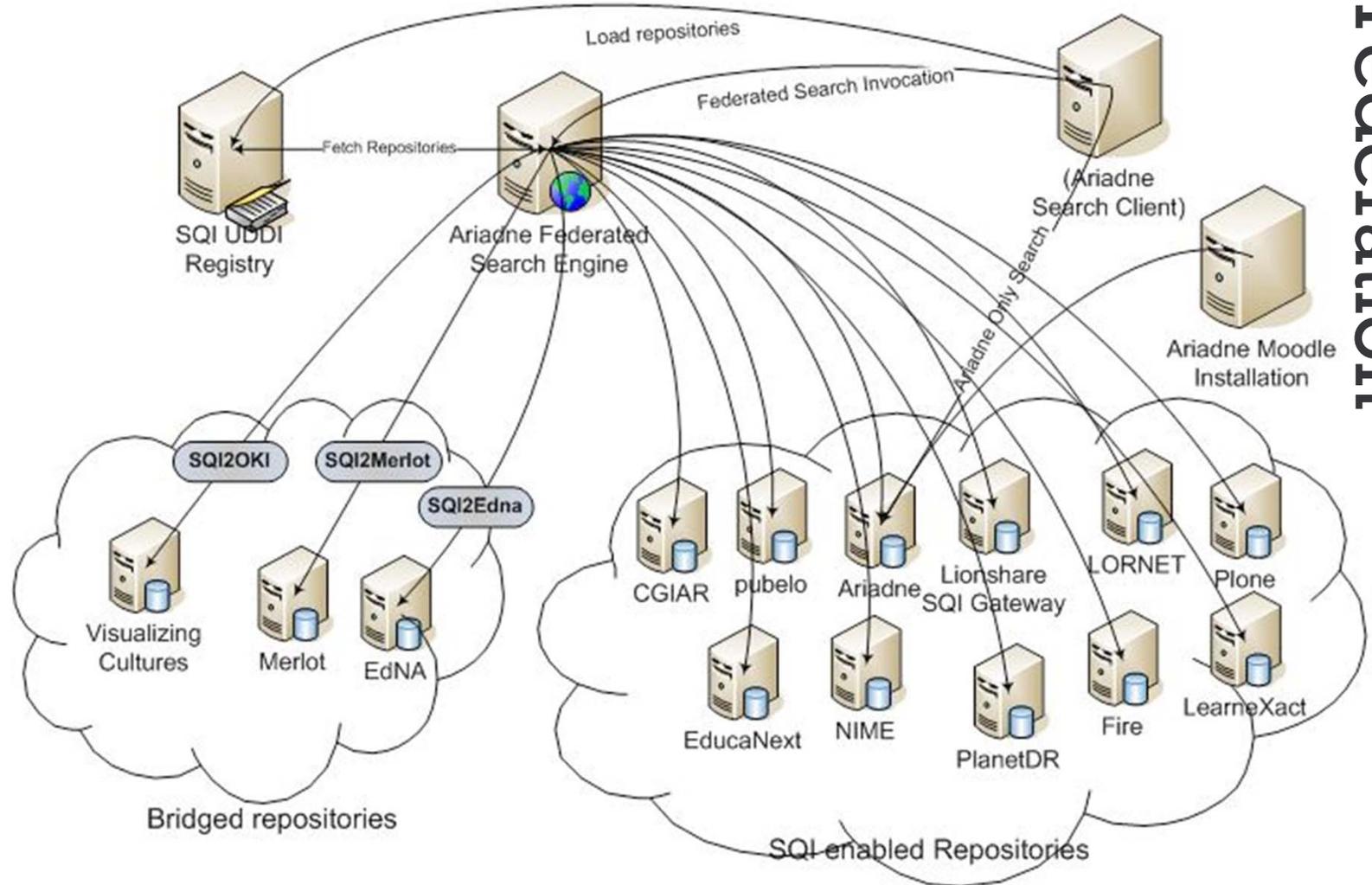
OAI-PMH Harvest Utility



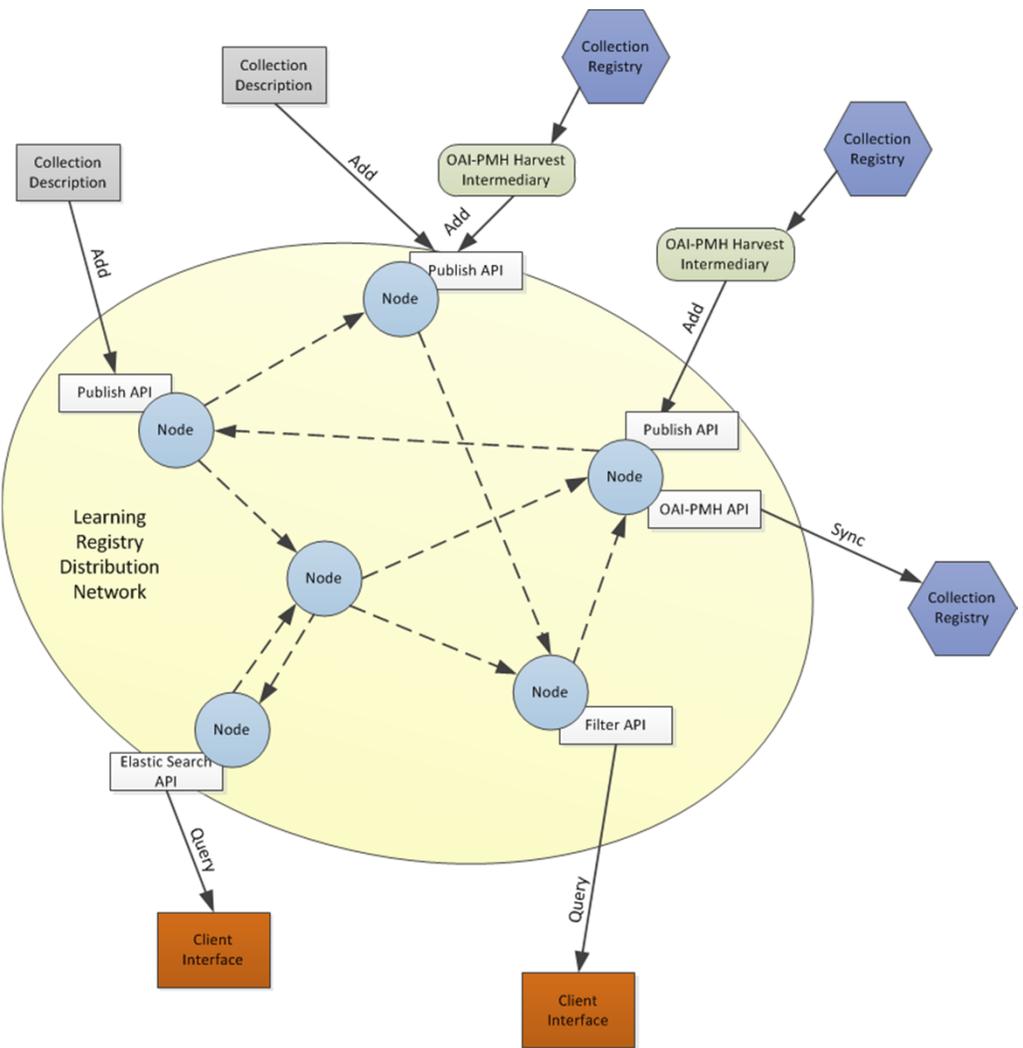


Collection Registry

Federation



Collection Registry + Harvest Prototype





Browser Plugin for Google Search

The screenshot shows a Google search interface. At the top left is the Google logo. To its right is a search bar containing the text "surface area site:shodor.org". To the right of the search bar are icons for voice search, a close button, and a "Search" button. Below the search bar, it indicates "About 515 results (0.08 seconds)" and a link to "Advanced search". On the left side, there is a vertical menu with categories: "Everything", "Images", "Videos", "News", "Shopping", and "More". Below this menu, it shows the location "Pittsburgh, PA" and a "Change location" link, followed by a "Show search tools" link. The main search results area contains three entries, each with a blue link, a magnifying glass icon, a snippet of text, and a breadcrumb trail. The first entry is "Interactivate: Surface Area and Volume" with a snippet about manipulating dimensions of polyhedra. The second is "Interactivate: Surface Area of a Rectangular Prism" with a snippet about introducing students to the concept of surface area. The third is "Interactivate: Surface Area and Volume" with a snippet about abstract lessons on surface area and volume. The fourth is "Interactivate: Understanding Surface Area and Volume" with a snippet about the terms "volume" and "surface area".



surface area site:shodor.org

Search

About 515 results (0.08 seconds)

Advanced search

Everything

Images

Videos

News

Shopping

More

Pittsburgh, PA

Change location

Show search tools

Interactivate: Surface Area and Volume
Surface Area and Volume: Manipulate different polyhedra, and watch how the surface area changes. Parameters: Type of polyhedron.
www.shodor.org > [Interactivate](#) > [Activities](#)

Interactivate: Surface Area of a Prism

This lesson is designed to introduce students to surface area and how to find the surface area of prisms. ...
www.shodor.org > [Interactivate](#) > [Lessons](#)

Interactivate: Surface Area and Volume

Abstract. This lesson is designed to introduce students to surface area and volume. ... have been introduced to the notion of surface area and volume. ...
www.shodor.org > [Interactivate](#) > [Lessons](#)

Interactivate: Understanding Surface Area and Volume

There's actually no such thing as finding the surface area of a three-dimensional object. Instead, we have the terms "volume" and "surface area" and talk about volume first. ...
www.shodor.org > [Interactivate](#) > [Discussions](#)
Cached - Similar

Interactivate: Finding the Surface Area of a Triangular Prism

Student 1: Surface area is the number of square units needed to cover the ... Student 2: Surface area is the number of square units you see of a three-dimensional object. ...
www.shodor.org > [Interactivate](#) > [Discussions](#)
Cached - Similar

Interactivate: Finding the Surface Area of a Rectangular Prism

Student 1: Surface area is the number of square units needed to cover the ... Student 2: Surface area is just what you see of a three-dimensional object. ...

Interactivate: Surface Area and Volume

Abstract
This lesson is designed to introduce students to surface area and volume. Objectives ... have been introduced to the notion of surface area and volume.

Objectives
Upon completion of this lesson, students will:

- Identify the surface area of a polyhedron.

Student Prerequisites

- Students must be able to:
 - perform integer and rational arithmetic
 - perform basic three-dimensional work as prism, cube and cylinder
 - use a browser for representing with the activities

Teacher Preparation

- Access to a browser
- Printed and glued
- Copy of supplemental materials for the activities
- Worksheet for students: [Surface Area and Volume Lesson](#)

Key Terms

surface area	A measure of the number of square units needed to cover the outside of a figure.
volume	A measure of the number of cubic units needed to fill the space inside an object.

Lesson Outline

- Find and Review**
Assign students to what they learned in previous lessons that will be pertinent to this lesson and to have them begin to think about the words and ideas of this lesson.
 - Ask students if they recall how to find the area of a two-dimensional shape, such as a square.
 - Exercises = [Surface Area and Volume of Three-Dimensional Figures](#).
- Objectives**
Let the students know what they will be doing and learning today. Say something like this:
 - Today, class, we will be talking about the surface area and volume of three-dimensional figures.
 - We are going to use the computer to learn about surface area and volume, but please do not have your computers on or go to this page until I ask you to. I want to show you a little about the program first.
- Teacher Input**
 - Open your browser to www.shodor.org/interactivate/activities/surfaceareaandvolume in order to demonstrate this activity to the students.
 - Show the students how to choose between a triangular prism and a rectangular prism. You may need to briefly discuss what these figures are.
 - Show students how to use the mouse to adjust the length, width, and height of the prism.
 - Show students how to adjust the view of the figure using the three buttons at the top of the screen. Talk about what each view is showing. Be sure to show the students how clicking on the figure and rotating it will allow them to view it from any angle they desire.
 - Point out to students the place where the surface area and volume of the figure is displayed.
- Student Practice**
 - Once you have realized that there are no questions regarding the use of the applet, pass out the [Worksheet for Students: "Surface Area and Volume"](#).
 - Walk the students together through question 1 on the worksheet -- walk with them until they understand the ideas here for calculating area.
- Independent Practice**
 - Allow the students to work independently on as much practice as the time of the worksheet or you monitor the room for questions.
 - Have the students report the answers for the triangular prism, connecting to how finding area changes as the shape changes from a rectangle to the triangle.

Browser Plugin for Google Search



surface area site:shodor.org



Search

About 515 results (0.17 seconds)

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▶ [Interactivate: Surface Area and Volume](#) 🔍

Surface Area and Volume: Manipulate dimensions of polyhedra, and watch how the **surface area** and volume change. Parameters: Type of polyhedron, length, ...

[www.shodor.org](#) > [Interactivate](#) > [Activities](#) - [Cached](#) - [Similar](#)

Educational details

identifier :

<http://www.shodor.org/interactivate/activities/SurfaceAreaAndVolume/>
title : Surface Area and Volume

description : This Java applet enables students to form and rotate three-dimensional rectangular and triangular prisms and observe how changing the height, width, and depth affects volume and surface area. Functionality includes color selection, slide bars for dimensions, and check boxes for imposing or making the back faces visible. The applet has two modes - Explore and Compute. From the Explore mode, students can view the model and manipulate its size to see the changes those manipulations make in the volume and surface area of the prism. The Compute mode allows students to perform their own calculations to find the volume and surface area of a series of prisms and check their answers.

subject : Measurement

subject : Measurement

subject : Area

subject : Measurement

subject : Area

subject : Surface area

subject : Measurement

subject : Volume

dct:conformsTo : <http://purl.org/ASN/resources/S11436A3>

dct:conformsTo : <http://purl.org/ASN/resources/S11434E2>

dct:conformsTo : <http://purl.org/ASN/resources/S11434E3>

dct:conformsTo : <http://purl.org/ASN/resources/S1143518>

publisher : Shodor Education Foundation, Inc.

rights : Copyright 1994-2010 Shodor

date : 2004

identifier : hdl:2200/20061215154133780T

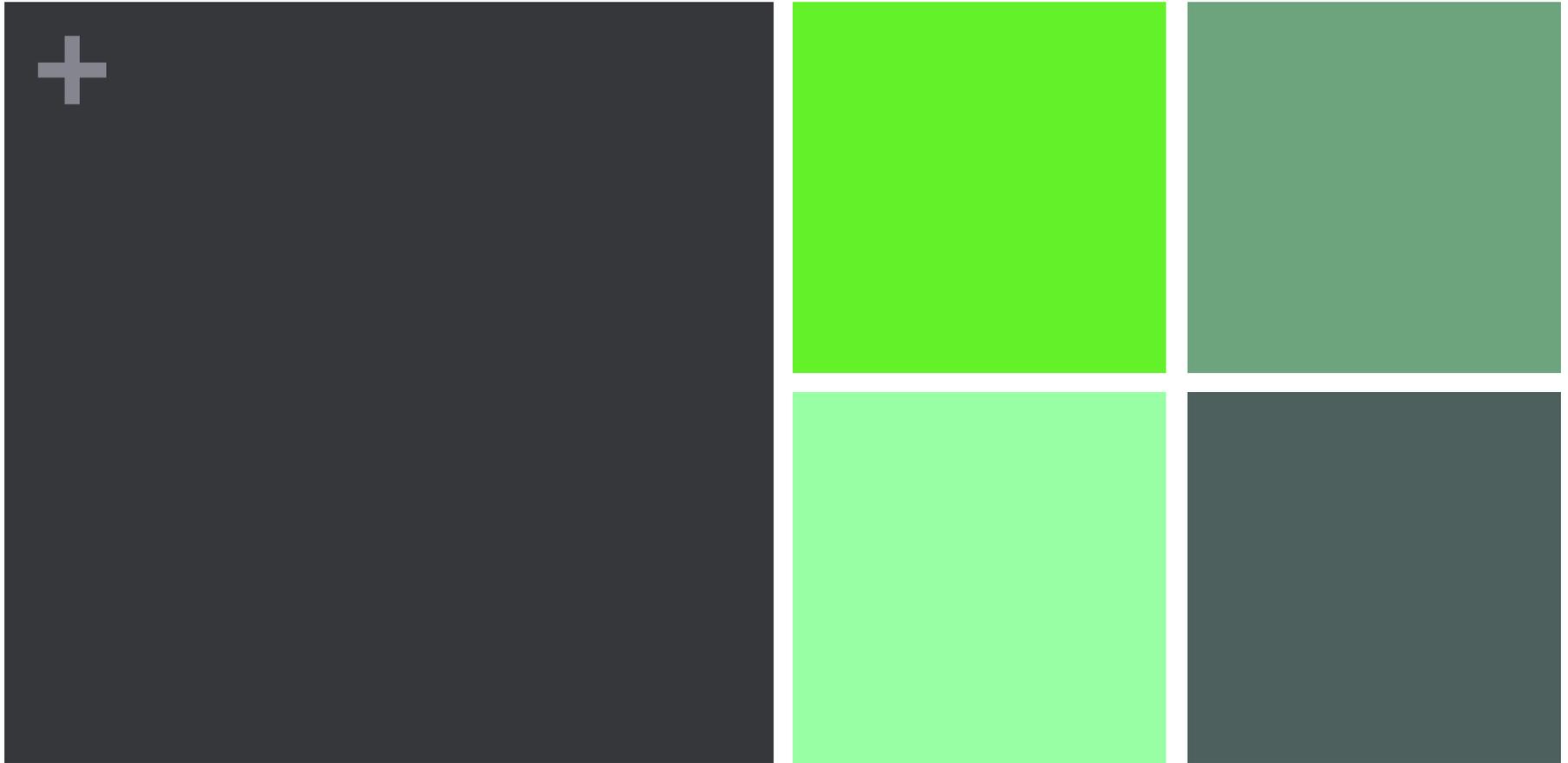
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dct:educationLevel : Upper Elementary

dct:educationLevel : Grade 5

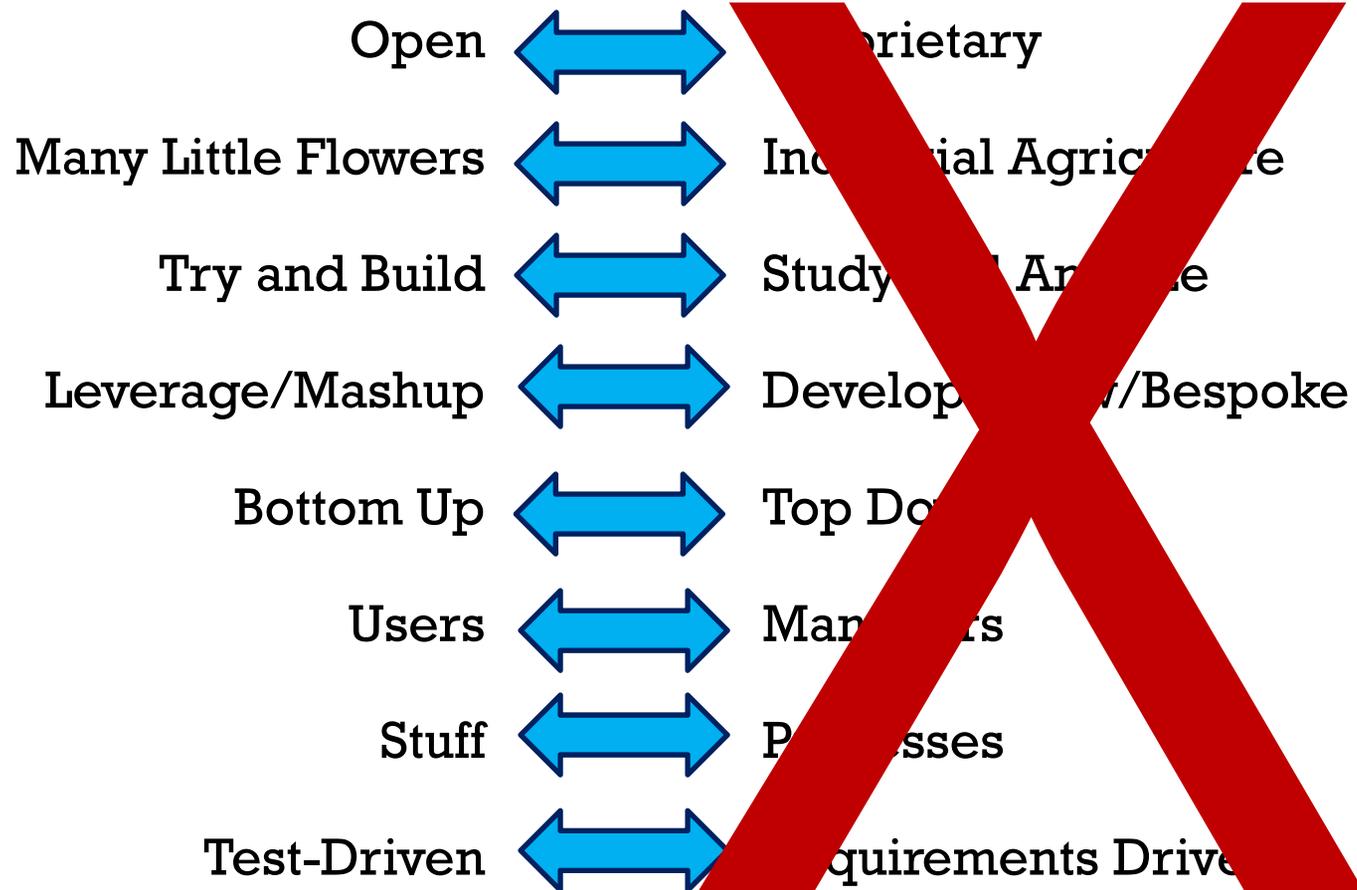


Brower Plugin for Google Search



Our Process

+ Design Principles





*Open processes,
open data,
+ open products,
open standards.*

Openness.

+ Participation



- Be Part of the Community
 - Be a provider (learning resources, metadata, paradata, analytic data)
 - Be a consumer
 - Help amplify
 - Operate a node
 - Build value-added services
- Help Build the Model and Network
 - Discuss on open fora
 - Build and test tools, APIs, specifications

+ Project Timeline



- Started June 2010
- 6 Week Agile development sprints from October 1, 2010
- Production 0.5 Version September 30, 2011
- Formal partner integration process from October 1, 2011
- Learning Registry Plugfest 2, Dec 12-15, Boulder CO USA



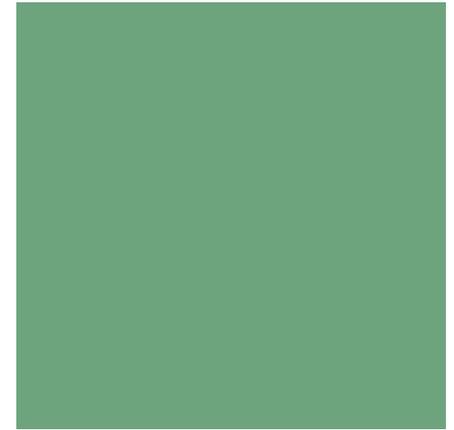
***We'll welcome anyone who
wants to make a difference.***

+

A Do-ocracy: Just Do It.



Community +



Thank You

info@learningregistry.org

[@learningreg](https://twitter.com/learningreg)

learningregistry.org