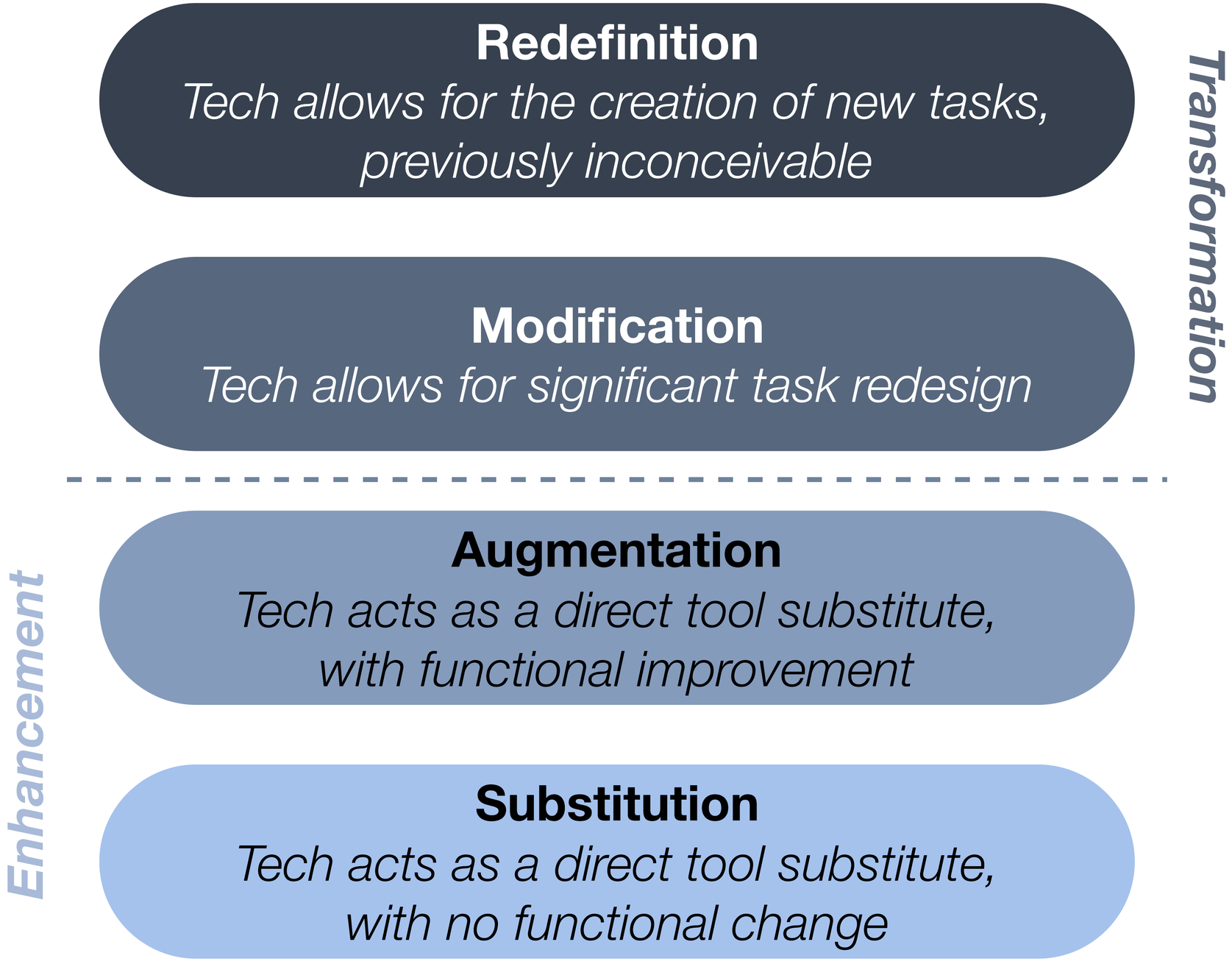
An Intro to SAMR: Building Ladders

Ruben R. Puentedura, Ph.D.



Ruben R. Puentedura, *As We May Teach: Educational Technology, From Theory Into Practice*. (2009)

Competency / Concept	Evaluate Historical Accounts	Interpret Primary Sources	Apply Chronological Reasoning	Contextualize	Construct Acceptable Historical Accounts
History as an Interpretive Account					
The Relationship of Past and Present					
Historical Evidence					
Complex Causality					
Significance					

Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

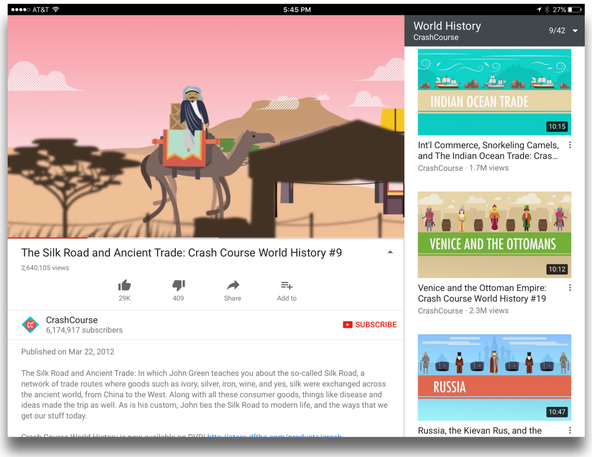
Tech allows for significant task redesign

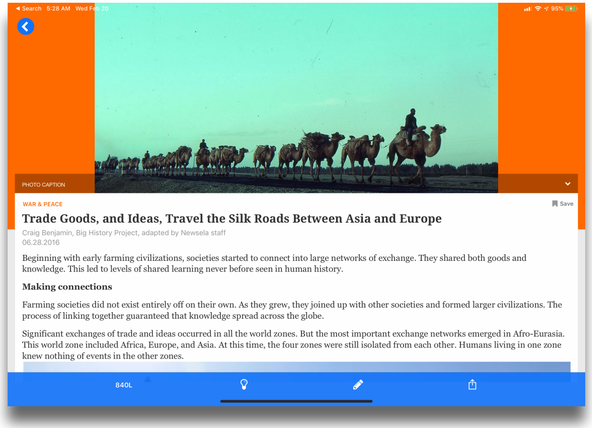
Augmentation

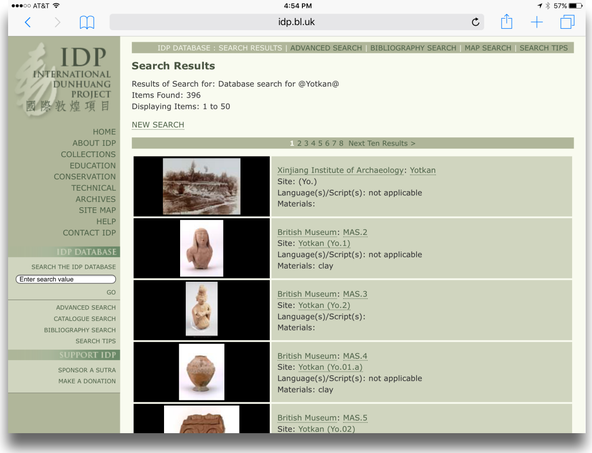
Tech acts as a direct tool substitute, with functional improvement

Substitution

Tech acts as a direct tool substitute, with no functional change







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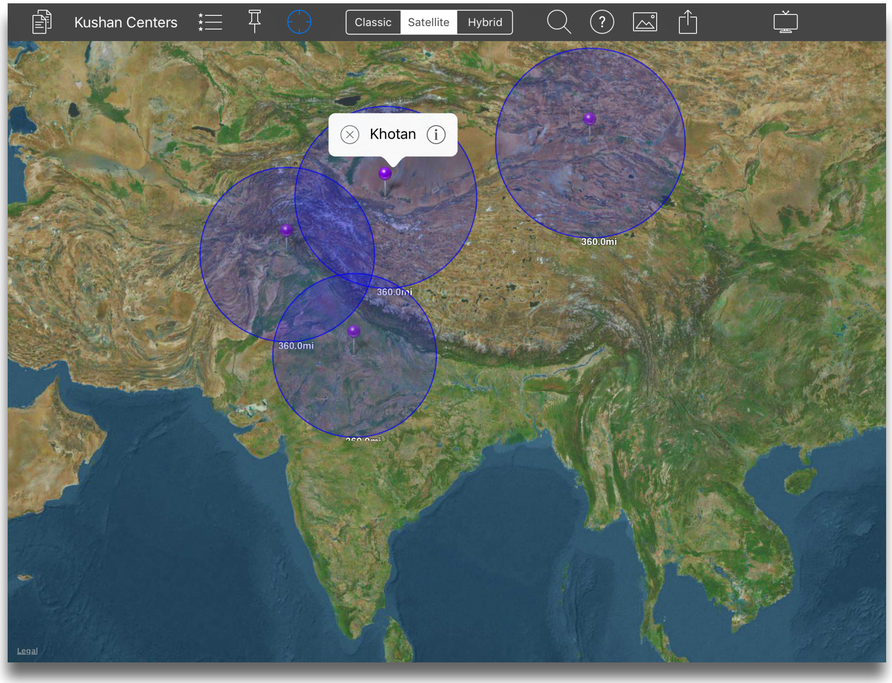

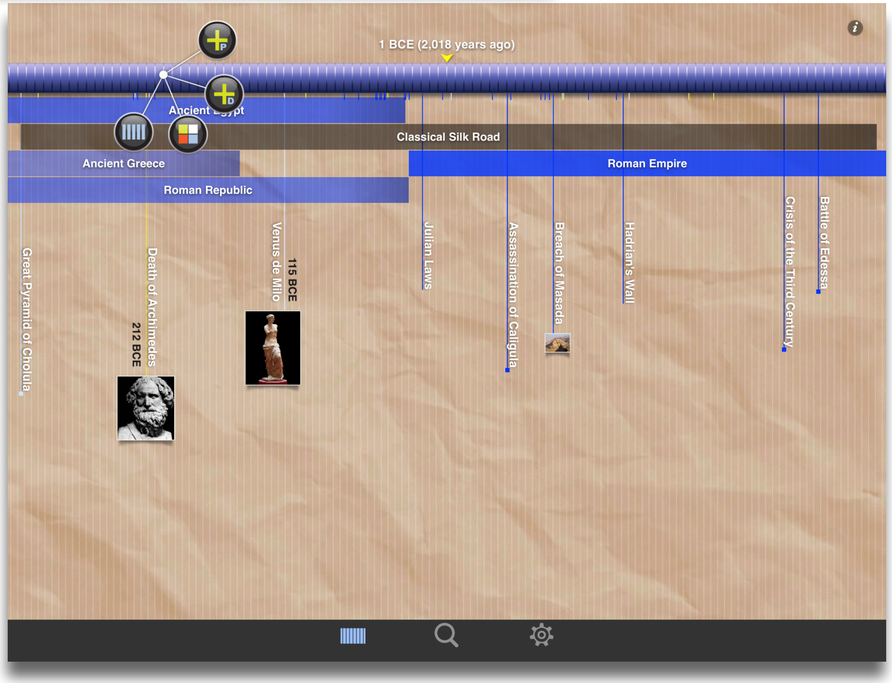

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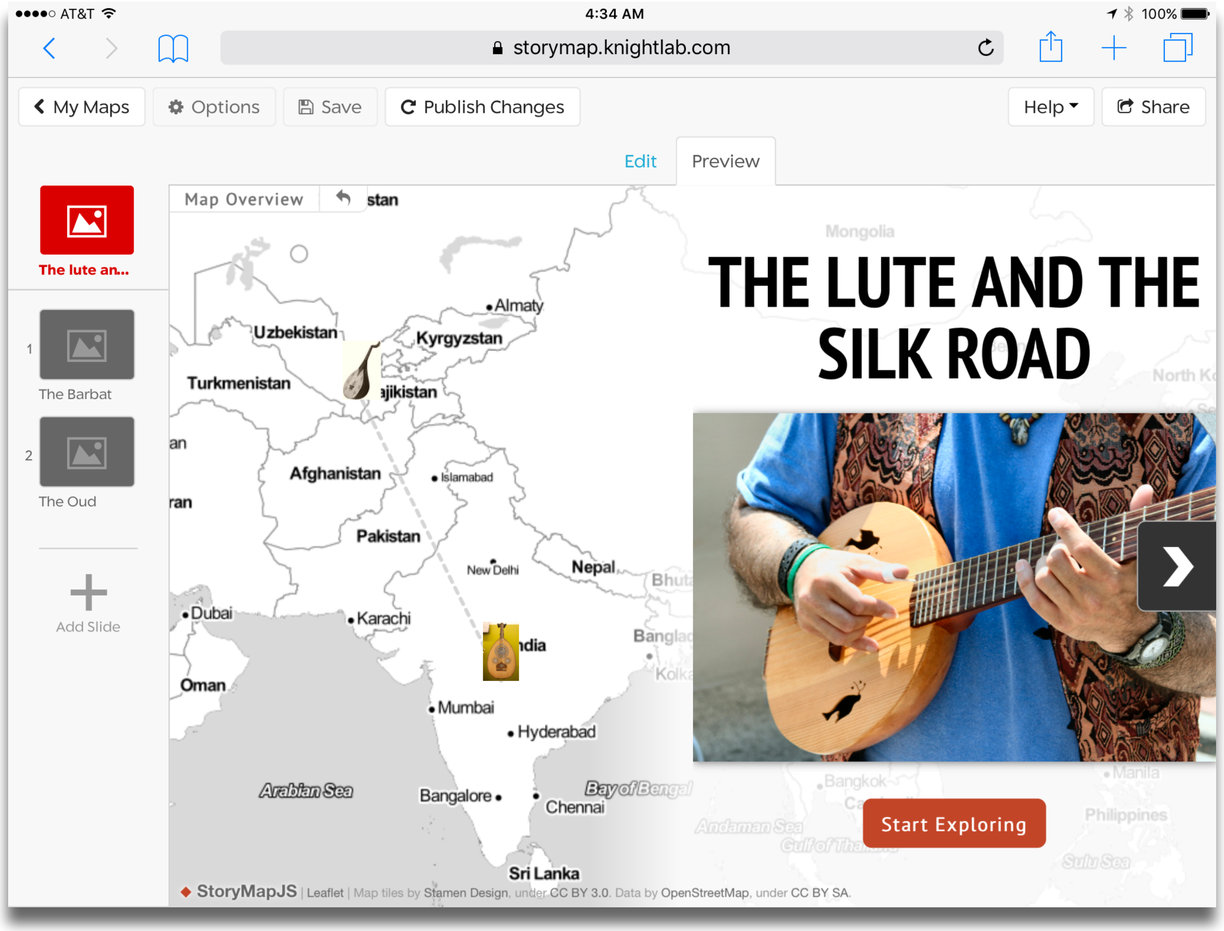

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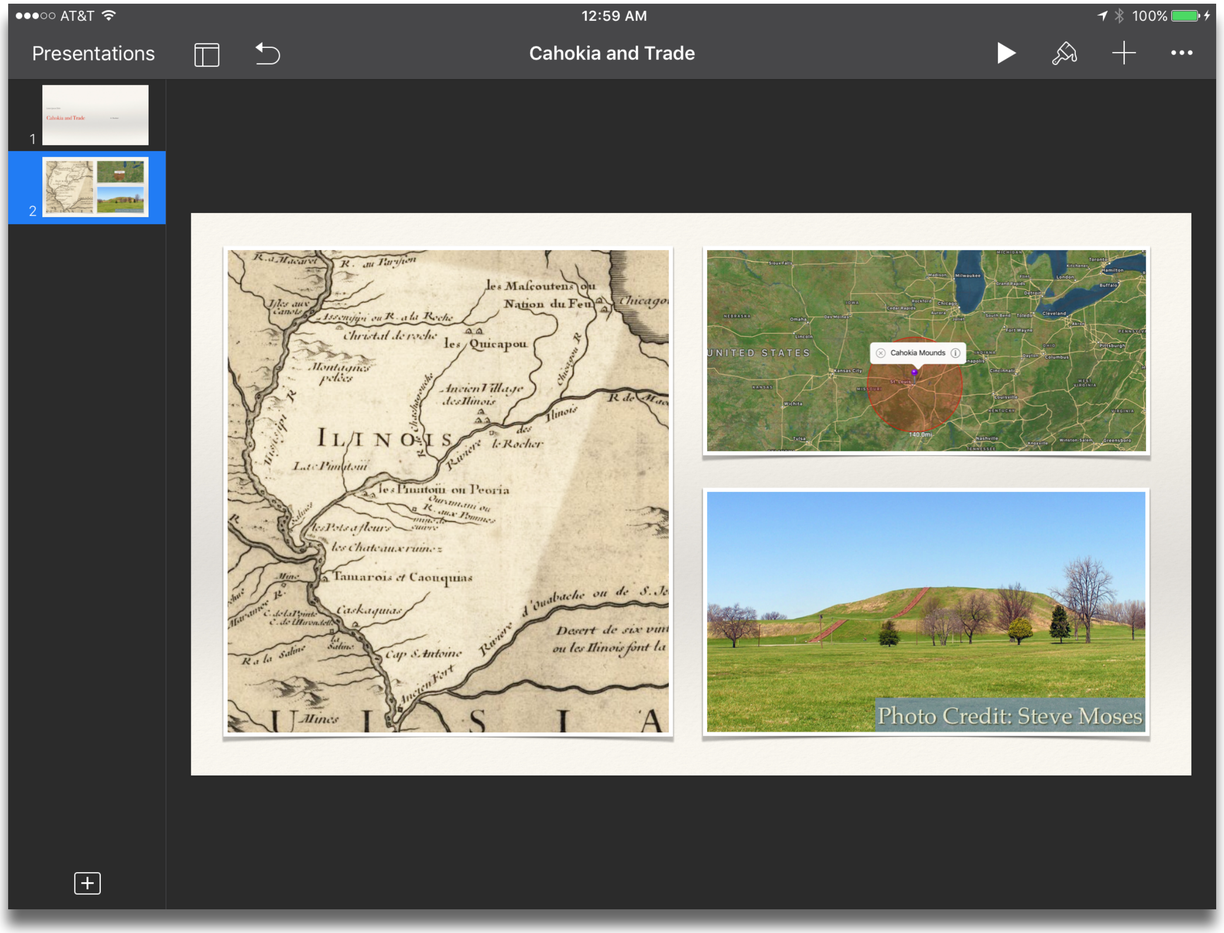

Redefinition *Tech allows for the creation of new tasks, previously inconceivable*	**Extended Thinking**
Modification *Tech allows for significant task redesign*	**Strategic Thinking**
Augmentation *Tech acts as a direct tool substitute, with functional improvement*	**Skills and Concepts**
Substitution *Tech acts as a direct tool substitute, with no functional change*	**Recall and Reproduction**

Webb, Norman L. *Depth-of-knowledge levels for four content areas*. (2002)

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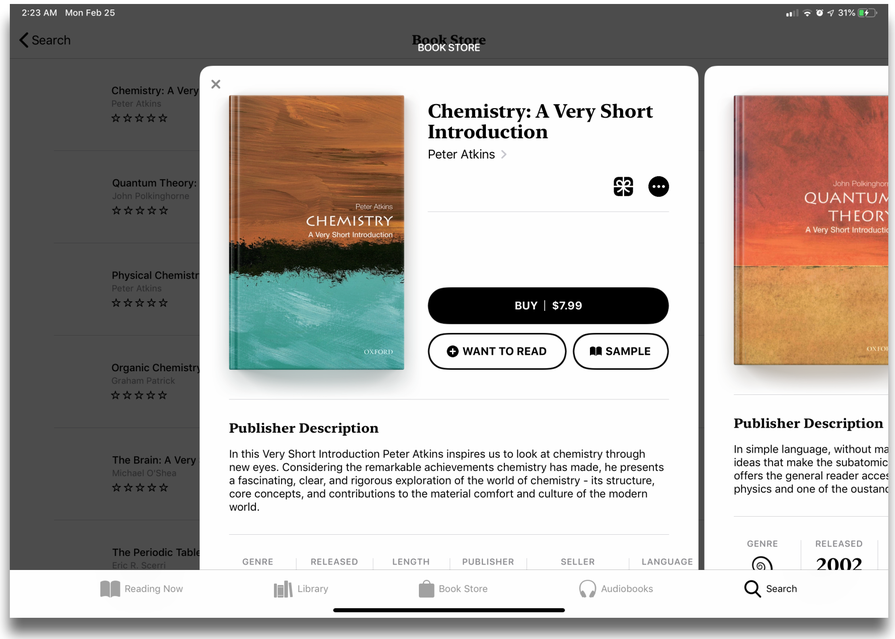

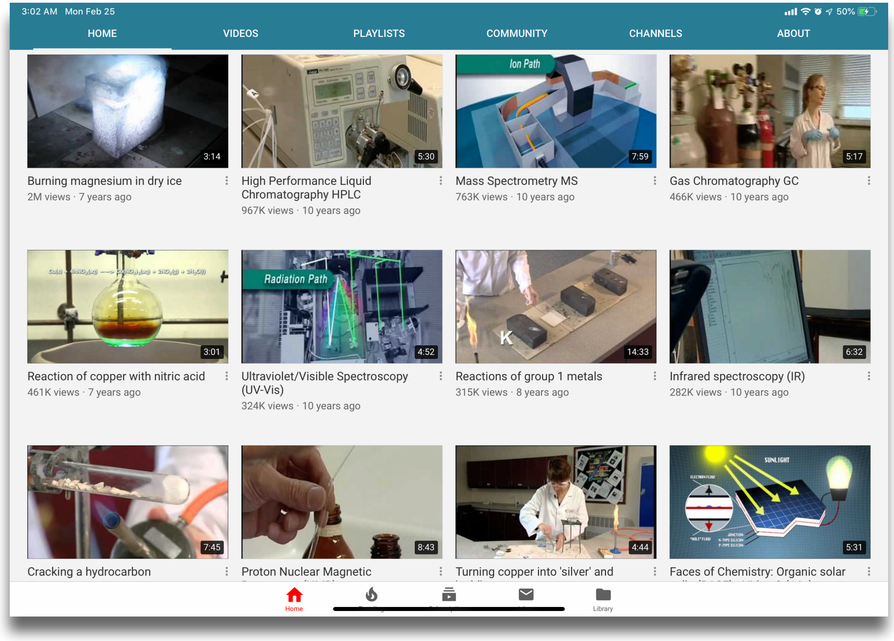

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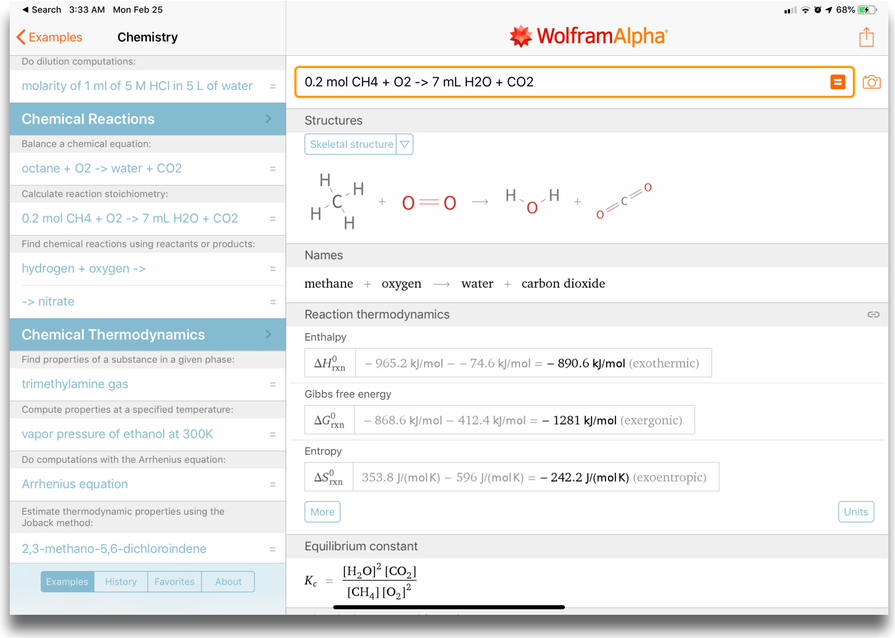
Skills and Concepts



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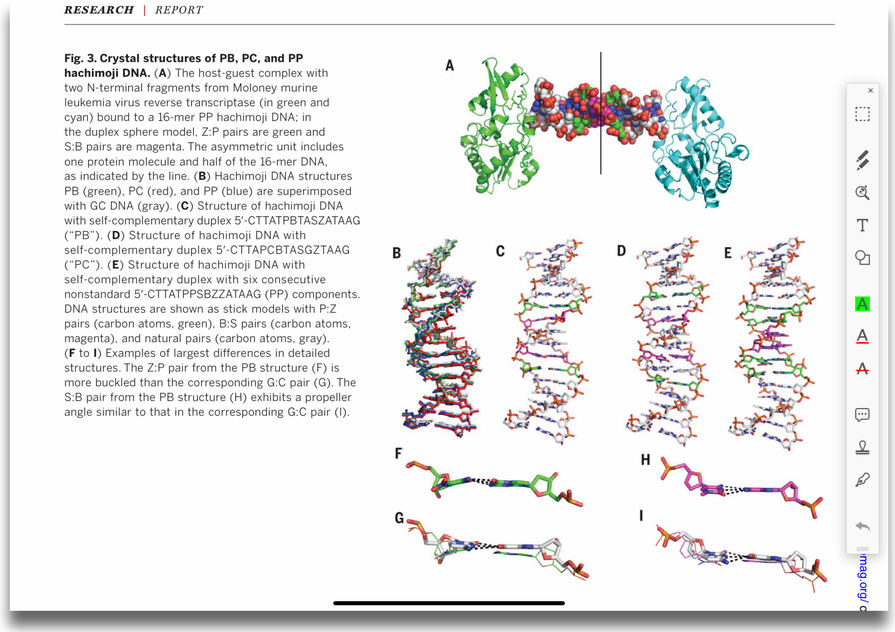

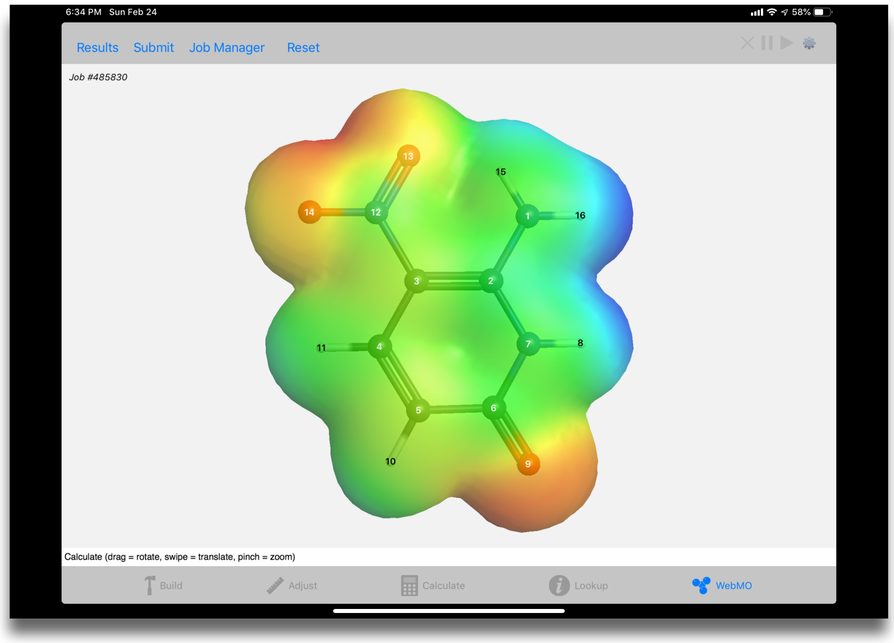

Hoshika, S., Leal, N. A., Kim, M.-J., Kim, M.-S., Karalkar, N. B., Kim, H.-J., … Benner, S. A. (2019). Hachimoji DNA and RNA: A genetic system with eight building blocks. *Science, 363(6429)*, 884

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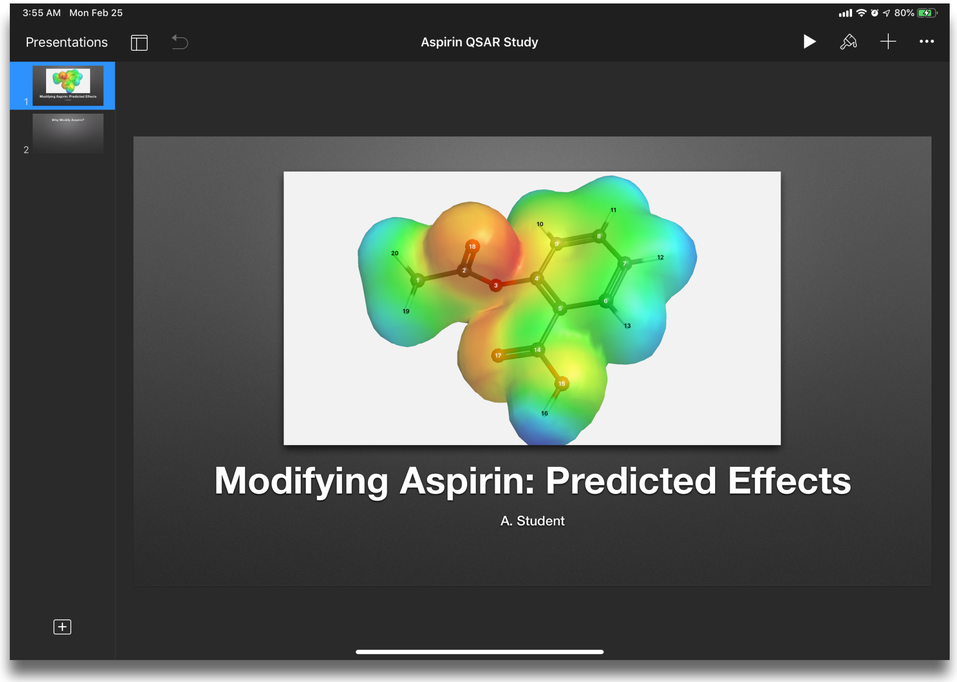
Extended Thinking



Social	Mobility	Visualization	Storytelling	Gaming
200,000 years	70,000 years	40,000 years	17,000 years	8,000 years

Ruben R. Puentedura, “Technology In Education: The First 200,000 Years” *The NMC Perspective Series: Ideas that Matter*. NMC Summer Conference, 2012.

Social

Bookmarks

RSS Feeds

Discussions

Microblogging

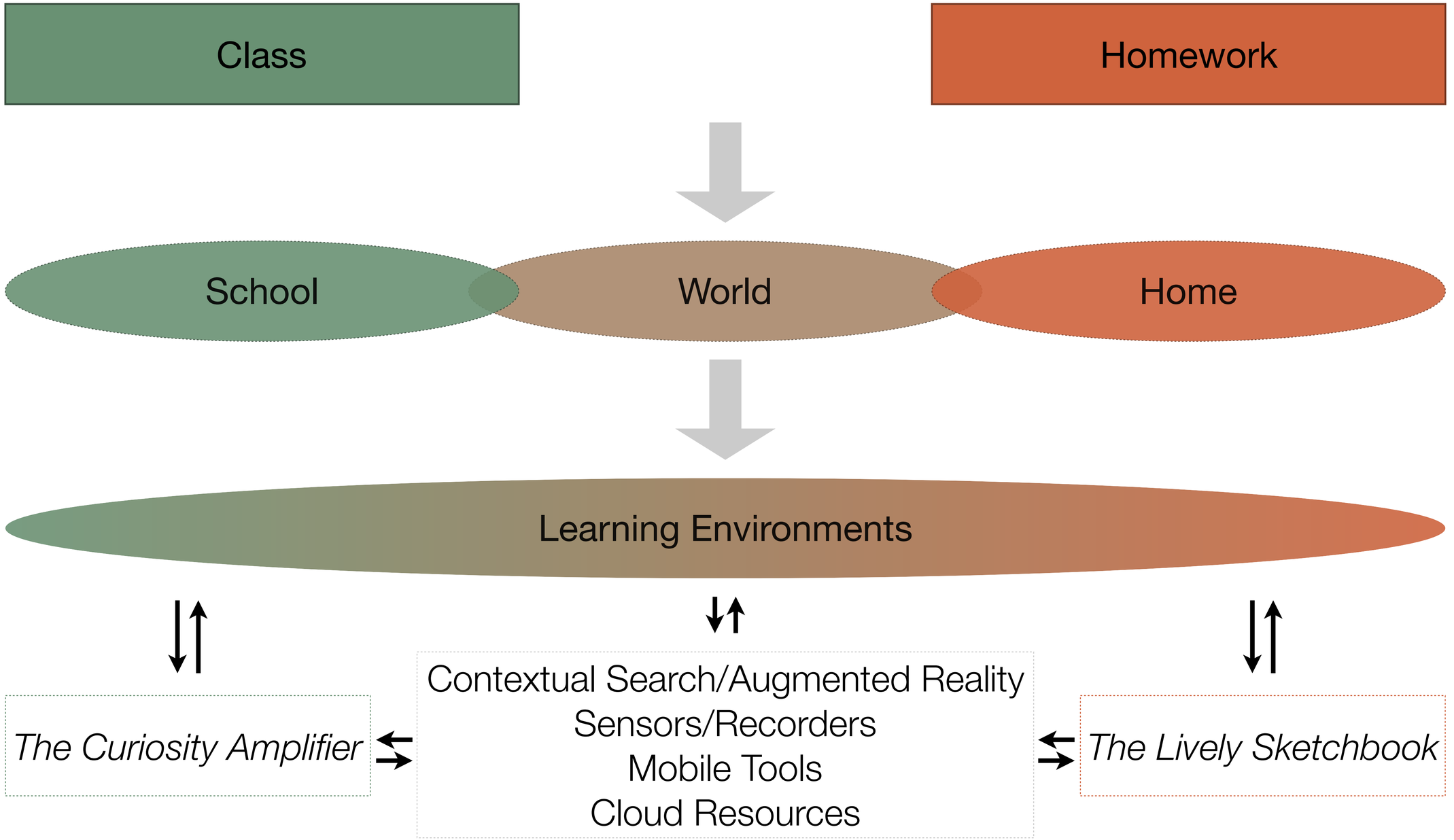
Blogging

Wikis

Telepresence

File Sharing

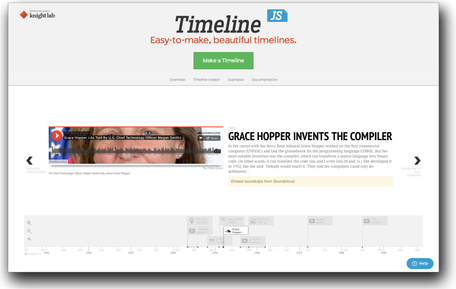
Mobility

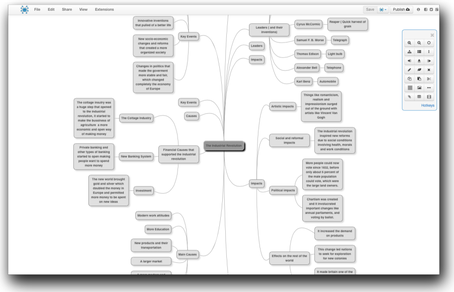


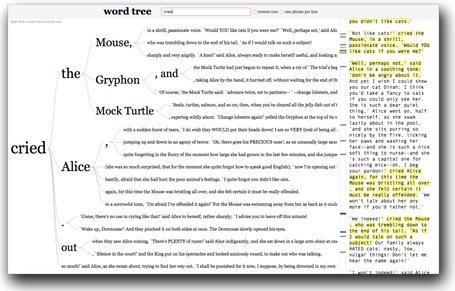
John Seely Brown. “A New Culture of Learning”. *NMC Summer Conference, Closing Keynote*. (2010)

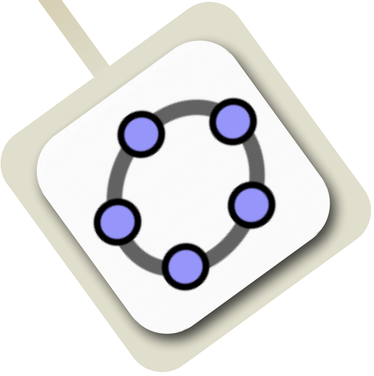
Ruben R. Puentedura, “The Lively Sketchbook”. *Hippasus Blog*. (2010)

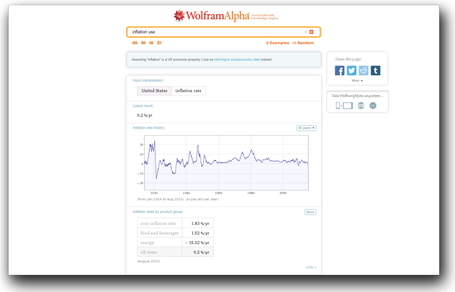
Visualization











Storytelling

Narrative sources;
Narrative constraints

Pictorial vocabulary;
Narrative transitions;
Text/image integration

CDS Seven Elements;
Montage structures

Narrative structures;
Narrative flows

Ludic elements

Image Assembly → Sequential Art → Moving Image → Interactive Media → Interactive Fiction

TIME

PLACE

Infinite Canvas

CONNECTION

SOCIAL

Formal Definition of **Game** (Salen & Zimmerman)

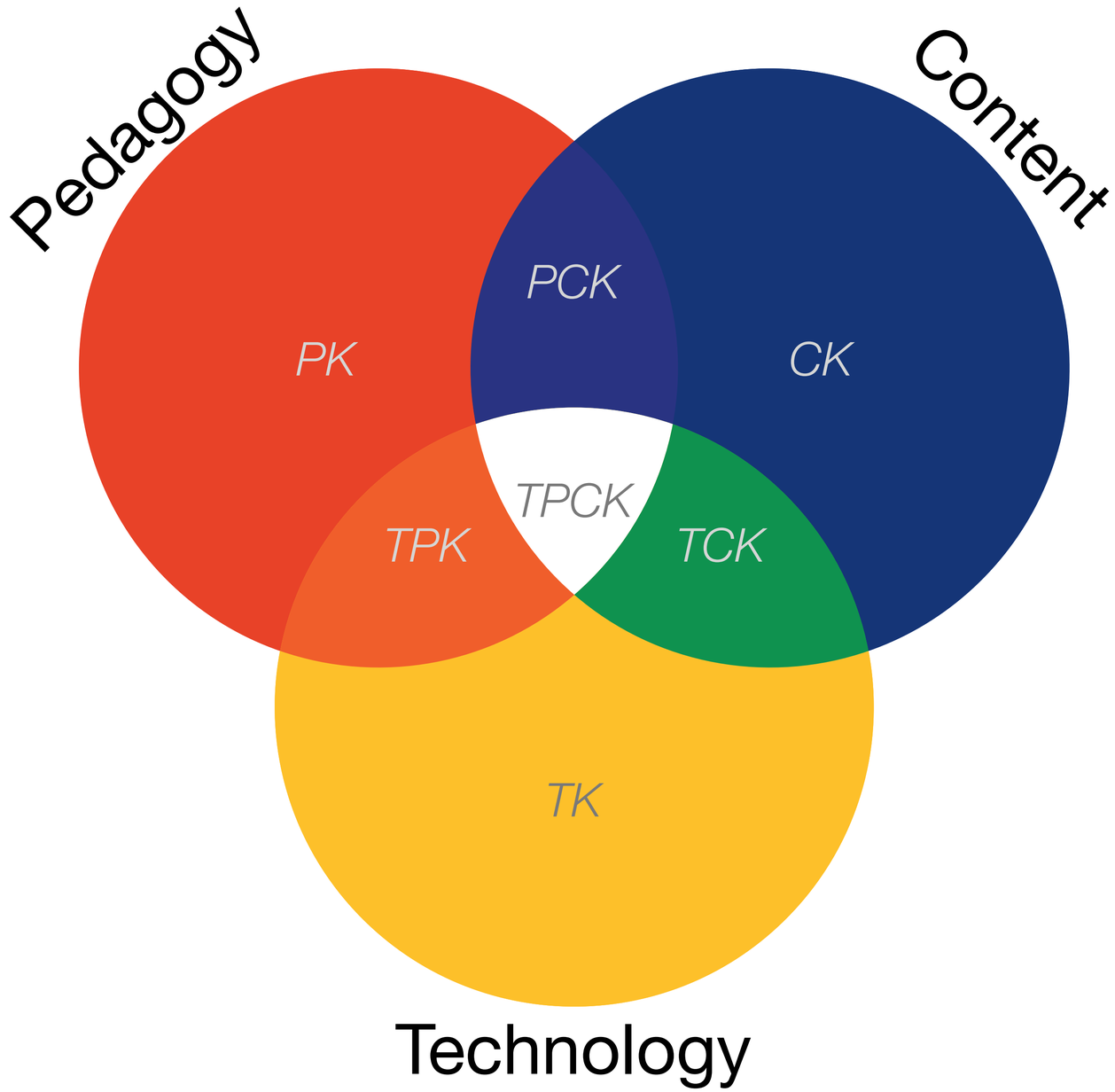
"A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome."

Katie Salen and Eric Zimmerman. *Rules of Play: Game Design Fundamentals*. The MIT Press, 2003.

The EdTech Quintet – Associated Practices	
Social	Communication, Collaboration, Sharing
Mobility	Anytime, Anyplace Learning and Creation
Visualization	Making Abstract Concepts Tangible
Storytelling	Knowledge Integration and Transmission
Gaming	Feedback Loops and Formative Assessment

S to A: The Value of Shared Practices

- Augmented Note Taking and Annotation
- Visualization Methods:
  - 5 Primary Domains: Space, Time, Networks, Text, Number
- Simple Blogging
- Simple Digital Storytelling Video
- Flipped Classroom:
  - Materials Creation
  - Peer Discussion/Instruction Methods
- Simple Interactive Fiction
- LMS Practices



Punya Mishra & Matthew J. Koehler, “Technological pedagogical content knowledge: A framework for teacher knowledge”. *Teachers College Record, 108*(6). (2006)

Building a SAMR Ladder

- Four steps:
  - Select a unit of instruction
  - Redesign the intro to the unit (basic knowledge, materials) at the S level
  - Redesign the development of the unit at the A, M levels
  - Redesign/create a student culminating experience for the unit at the R level

Why Build a Ladder?

- Only one of many possible approaches to redesigning a unit of instruction using SAMR
- Particularly well-suited to “first efforts” in technology-based curricular redesign
- Some advantages in this context:
  - Proximity to existing practice
  - Sustainability of effort
  - Option for gradual implementation

Three Questions (and Followups)

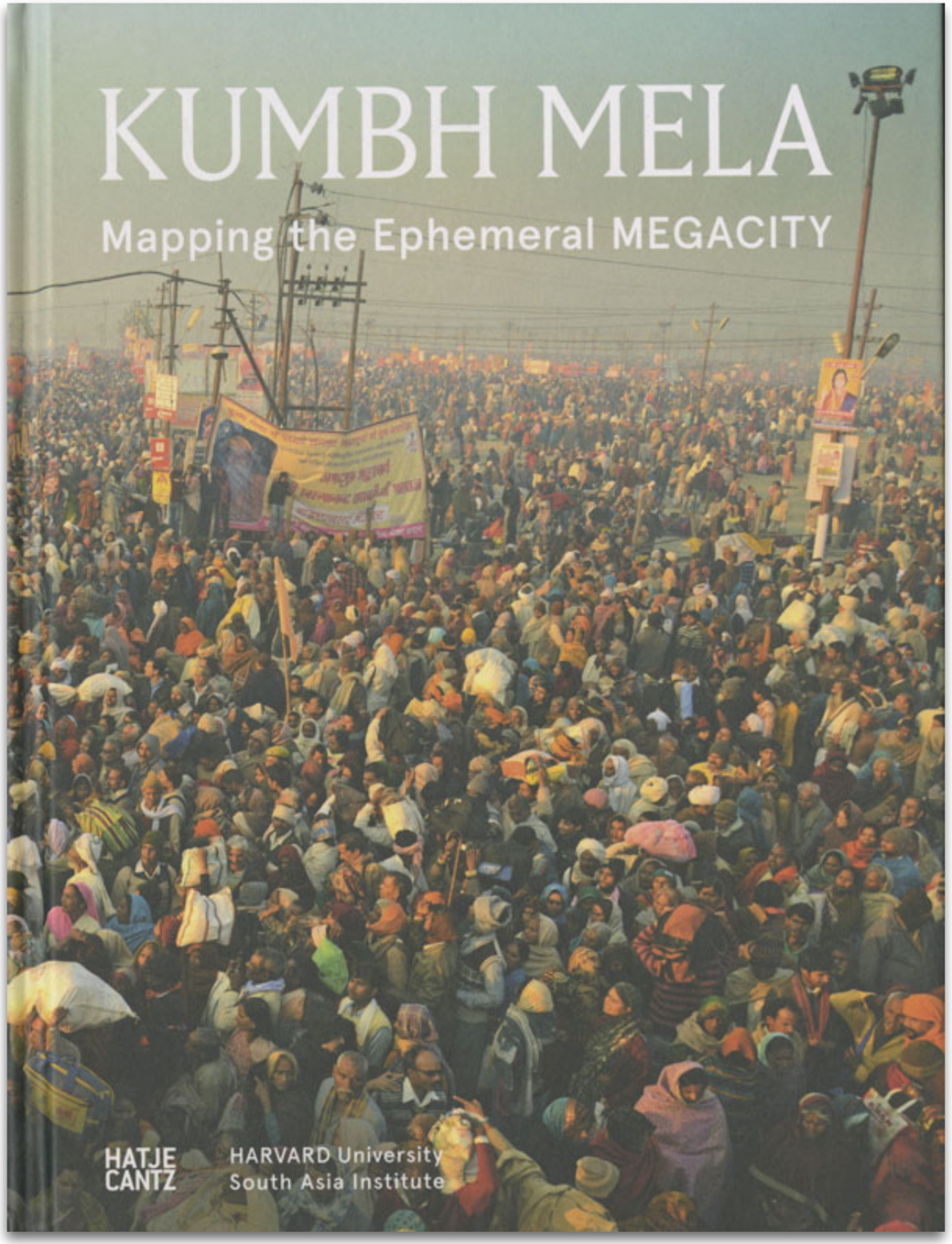
- Which unit of instruction would you like to redesign?
  - Why?
- What did you do before in this unit that worked?
  - Why did you do it?
- What would you like to change or replace?
  - Why?

The Two-Pass Ladder – Pass 1

- Redesign at the S/A levels, using **one** of Technology, Pedagogy, or Content as your driver:
  - S: Go for low-hanging fruit, e.g.
    - access to resources
    - coordination of social environments
    - basic approaches to information management
  - A: Go for enhancing what you chose in S, e.g.
    - curation of resources
    - organization of peer discussion/instruction experiences
    - information analysis and visualization

The Two-Pass Ladder – Pass 2

- Now, redesign at the M/R levels for a **different** driver (from Technology, Pedagogy, or Content), but **in light of** the first pass driver:
  - M: Go for defining extended experiences in student exploration/creation that leverage the choices made for A
  - R: Go for student agency, allowing them to build their own exploration/creation using the experiences developed at M


KUMBH MELA
Mapping the Ephemeral MEGACITY
HATJE CANTZ
HARVARD University
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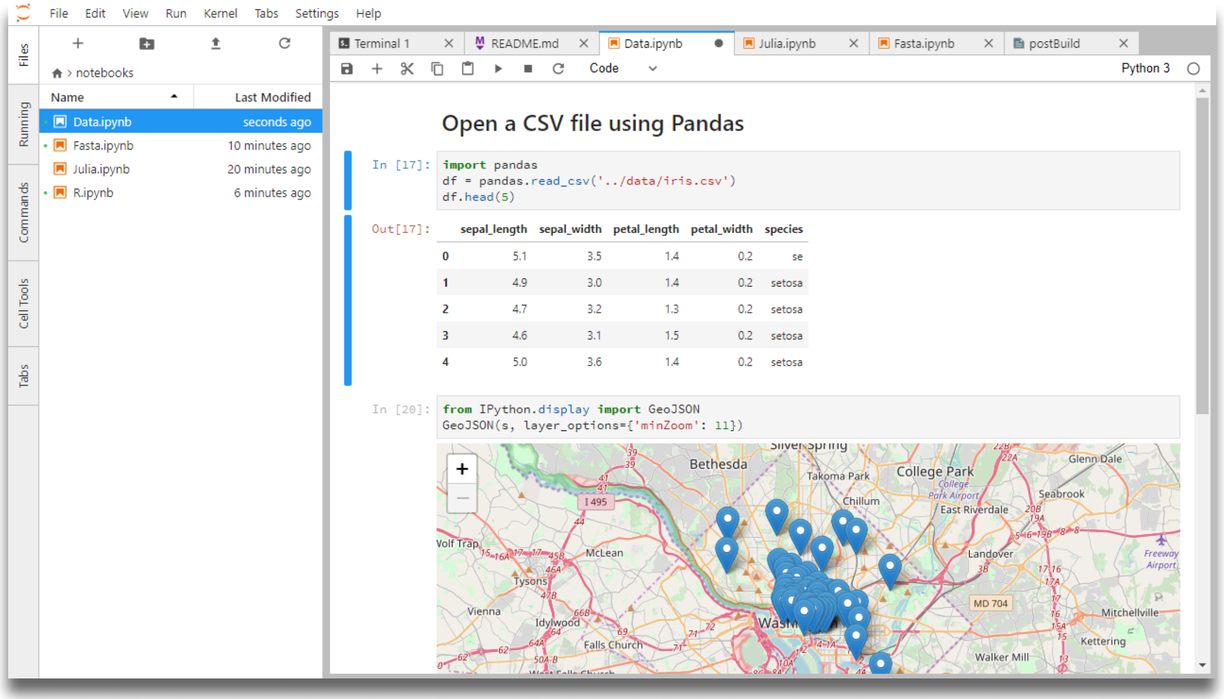

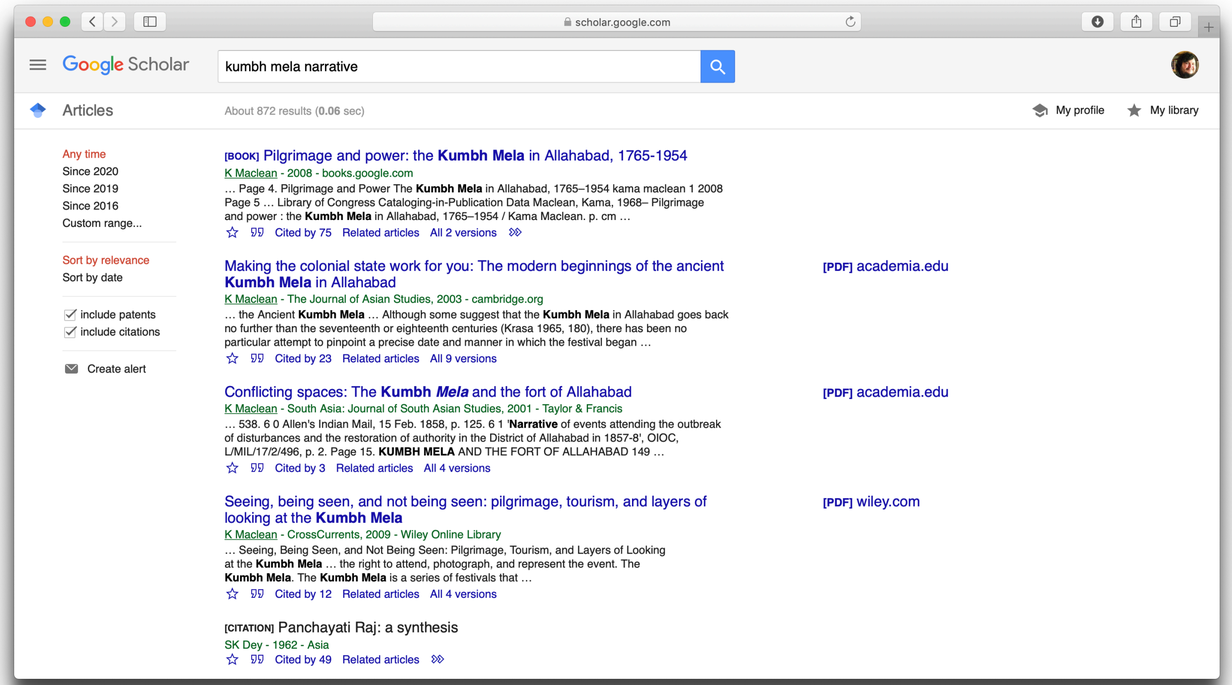

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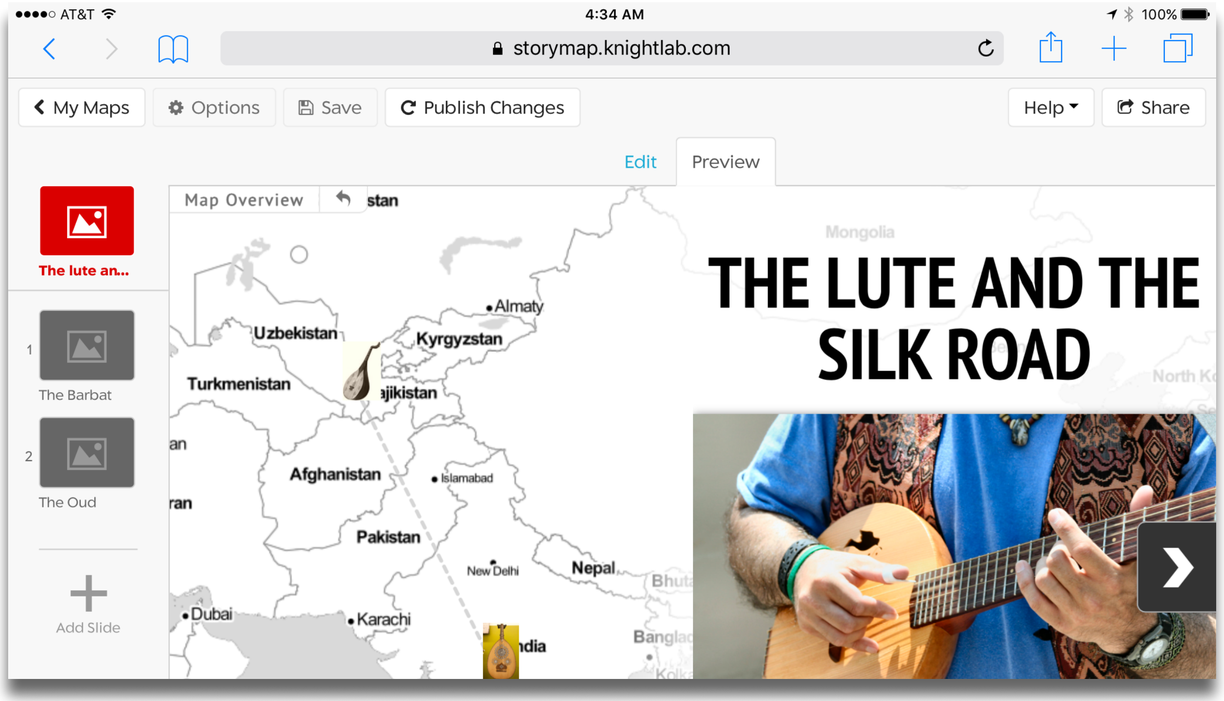
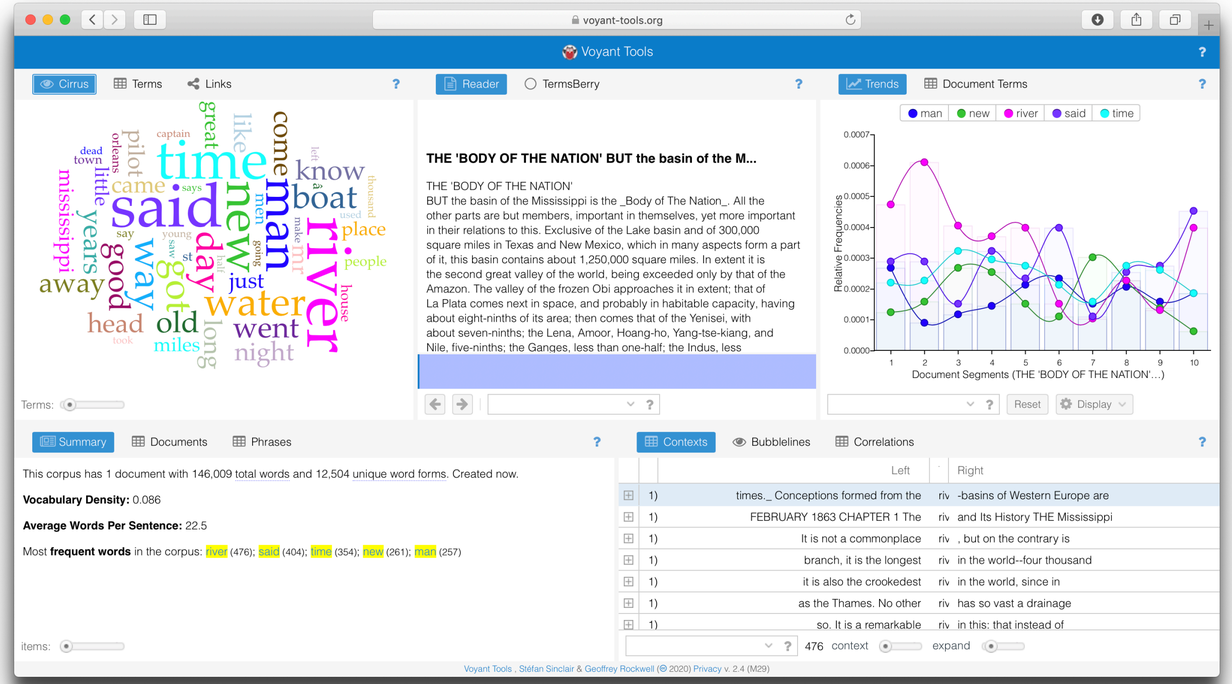
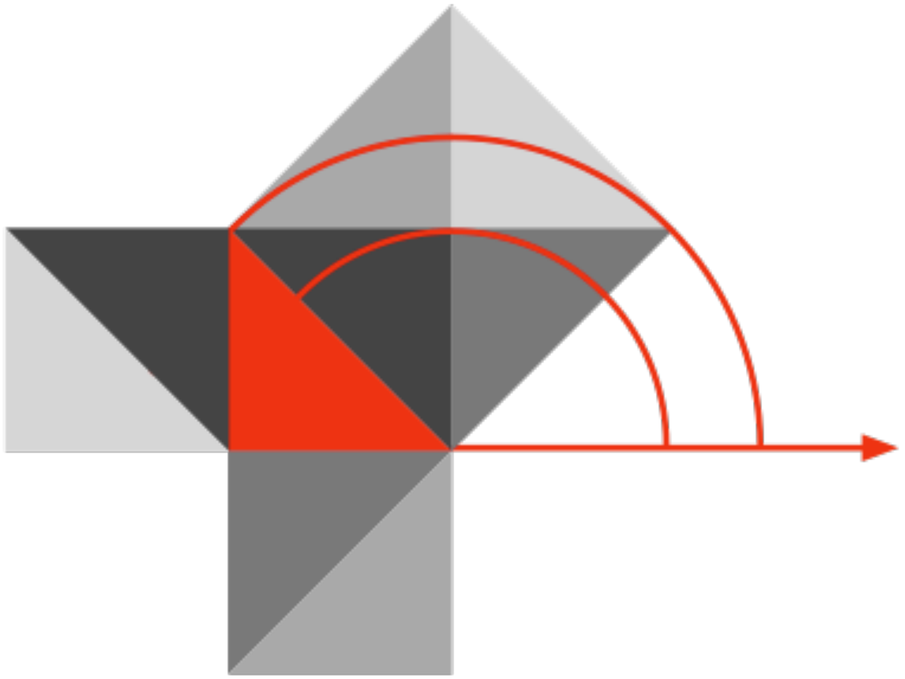




Choosing the First SAMR Ladder Project: Three Options

- **Your Passion:**
  - If you had to pick one topic from your class that best exemplifies why you became fascinated with the subject you teach, what would it be?
- **Barriers to Your Students' Progress:**
  - Is there a topic in your class that a significant number of students get stuck on, and fail to progress beyond?
- **What Students Will Do In the Future:**
  - Which topic from your class would, if deeply understood, best serve the interests of your students in future studies or in their lives outside school?

Hippasus



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