

Defining Goals for Change: SAMR, Learning, and the Road Ahead

Ruben R. Puentedura, Ph.D.

Substitution

Augmentation

Modification

Redefinition

EdTech Quintet

Shared Practices



TPCK



21C Learning Framework

Refraction

Conversational Framework

Communities of Practice

Personal Learning Networks

Dynamic Learning Structures

Transformation

Redefinition

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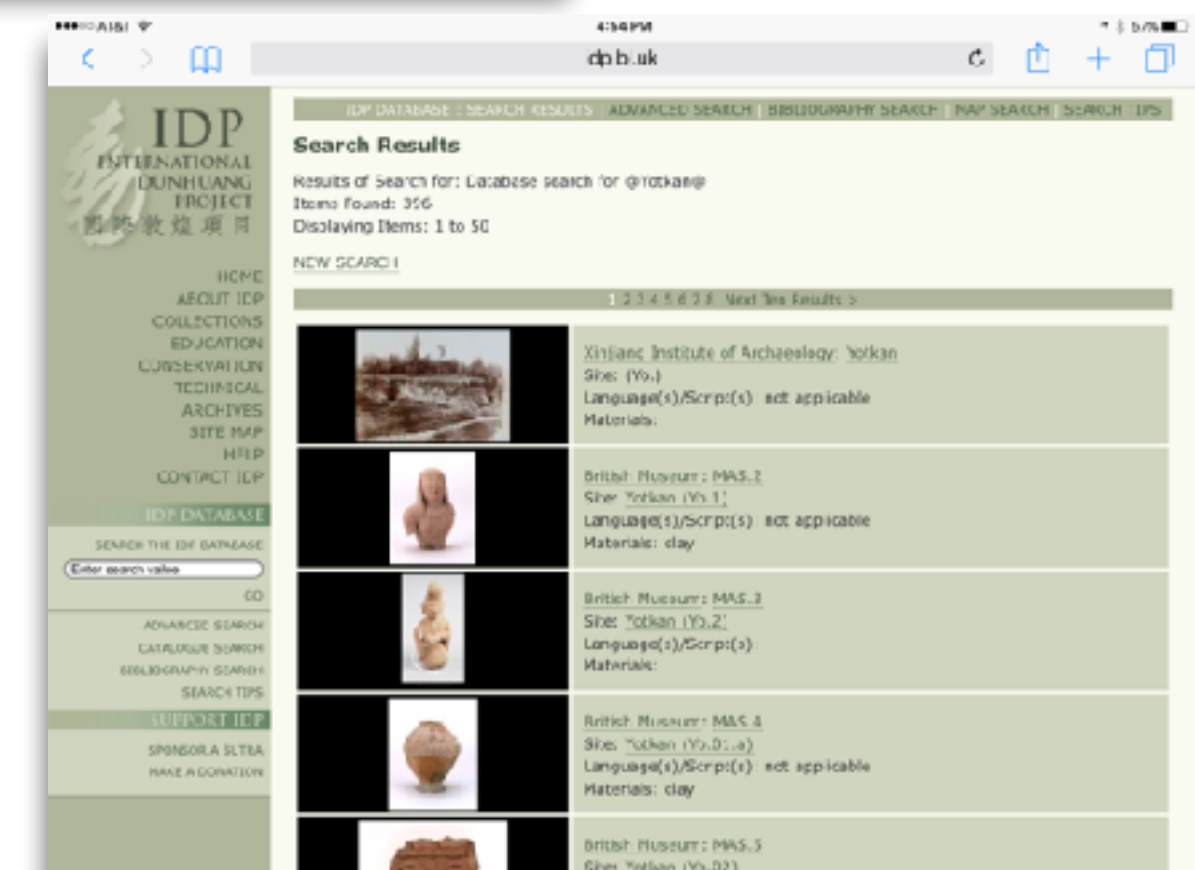
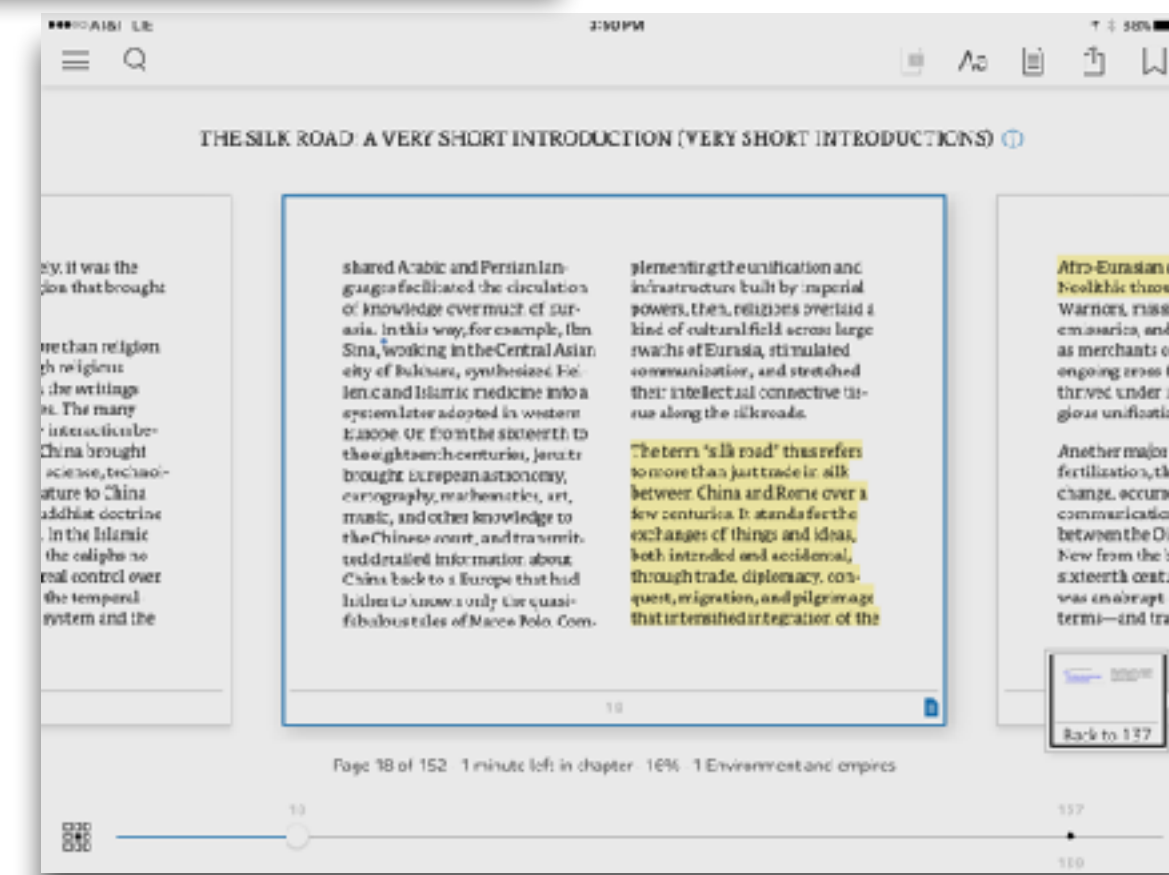
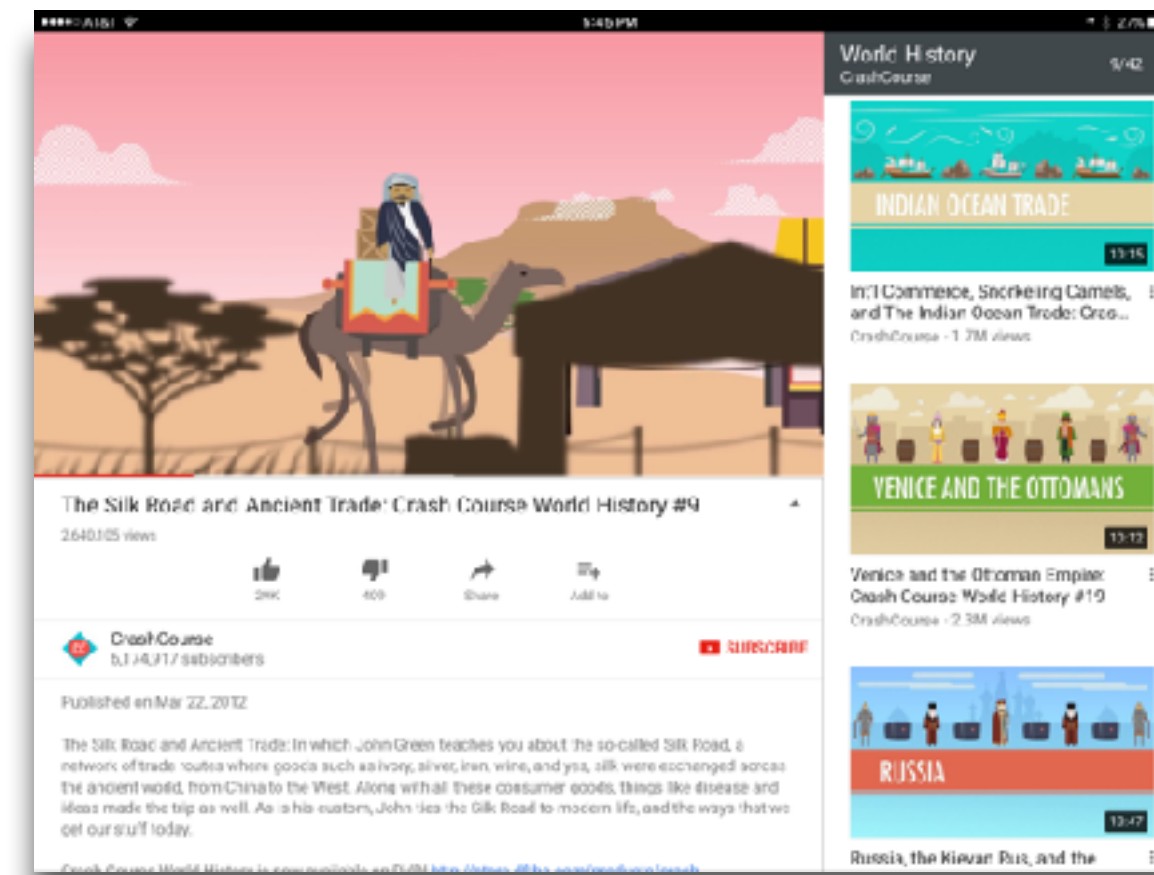
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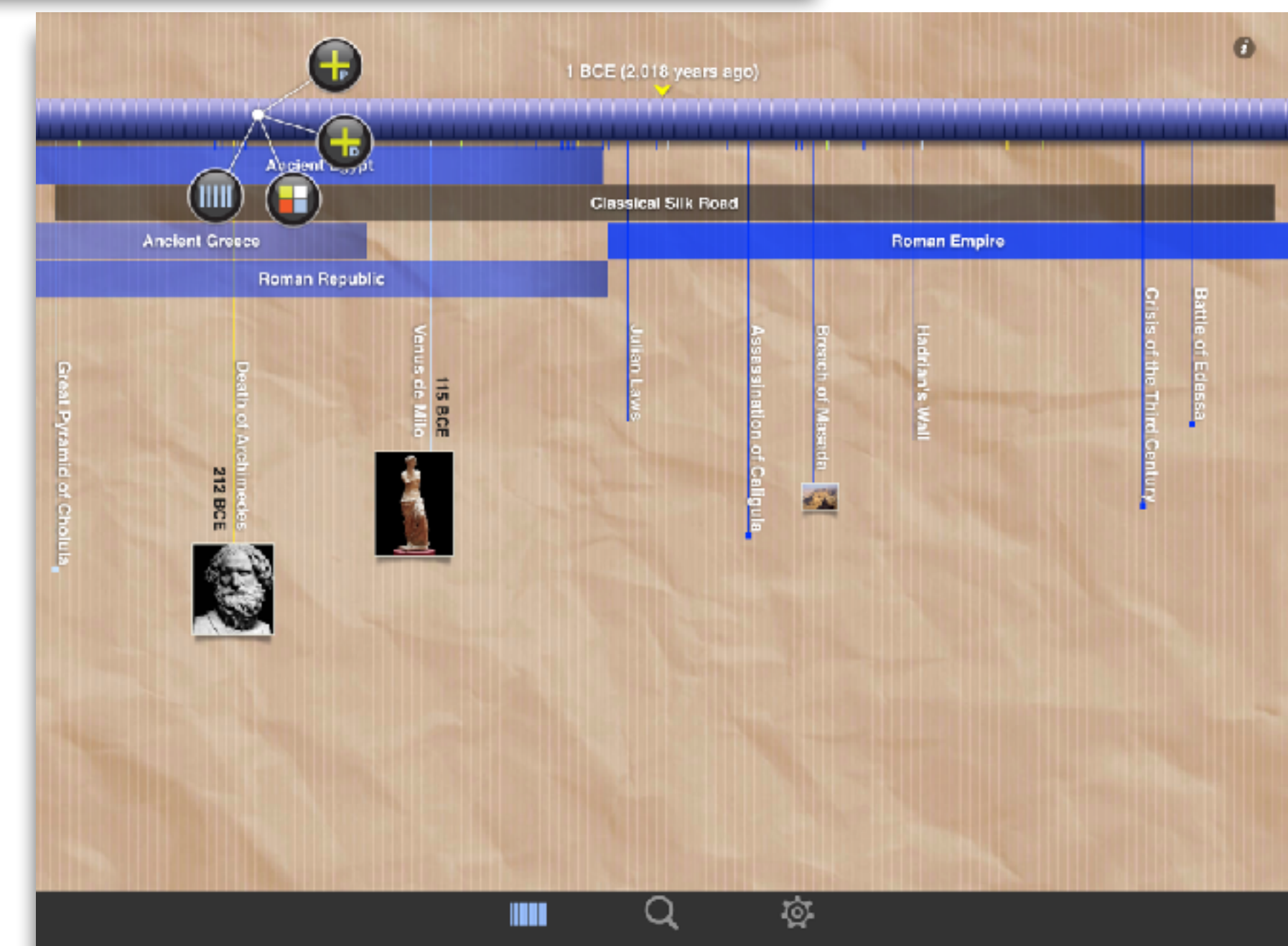
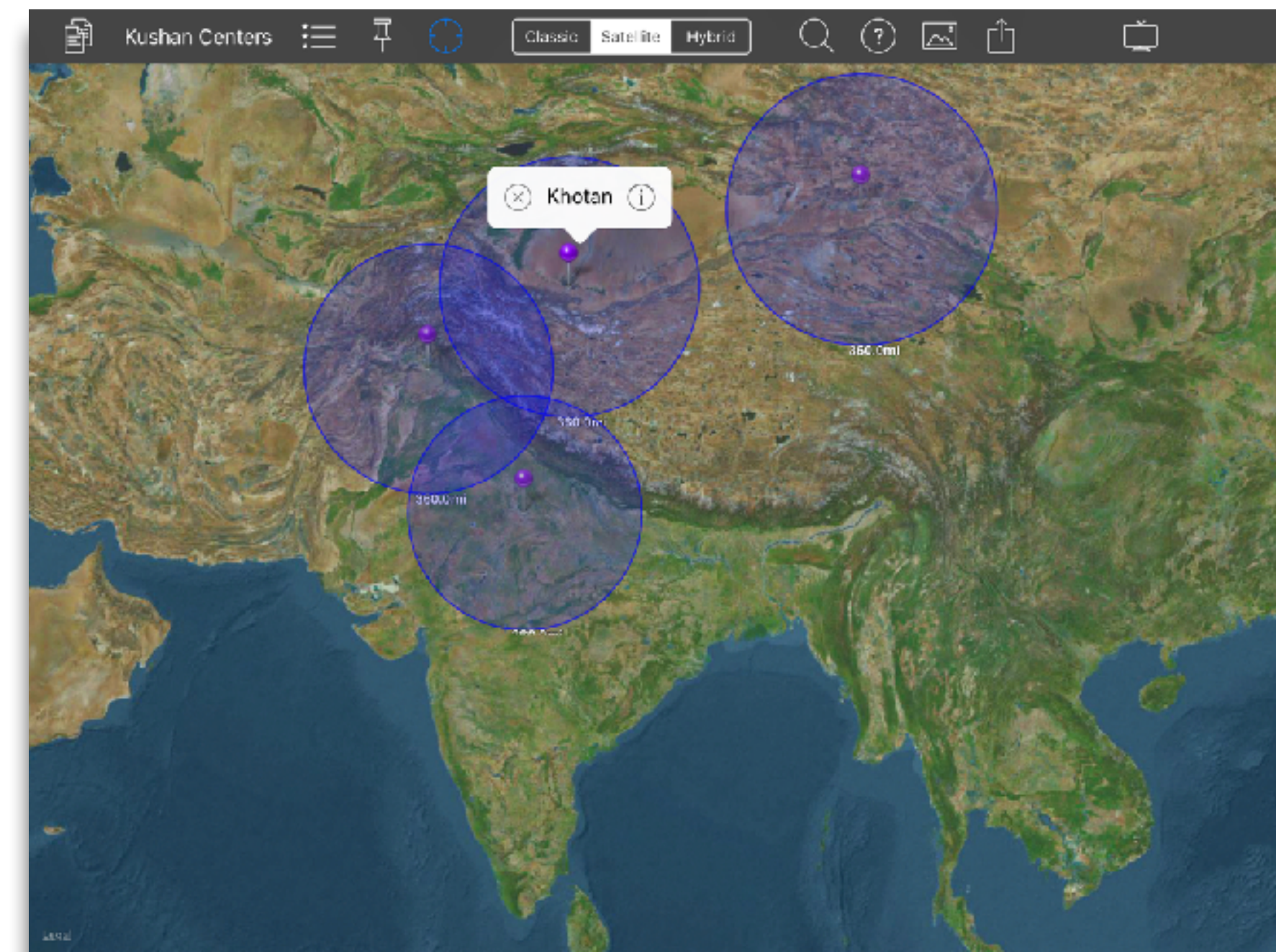
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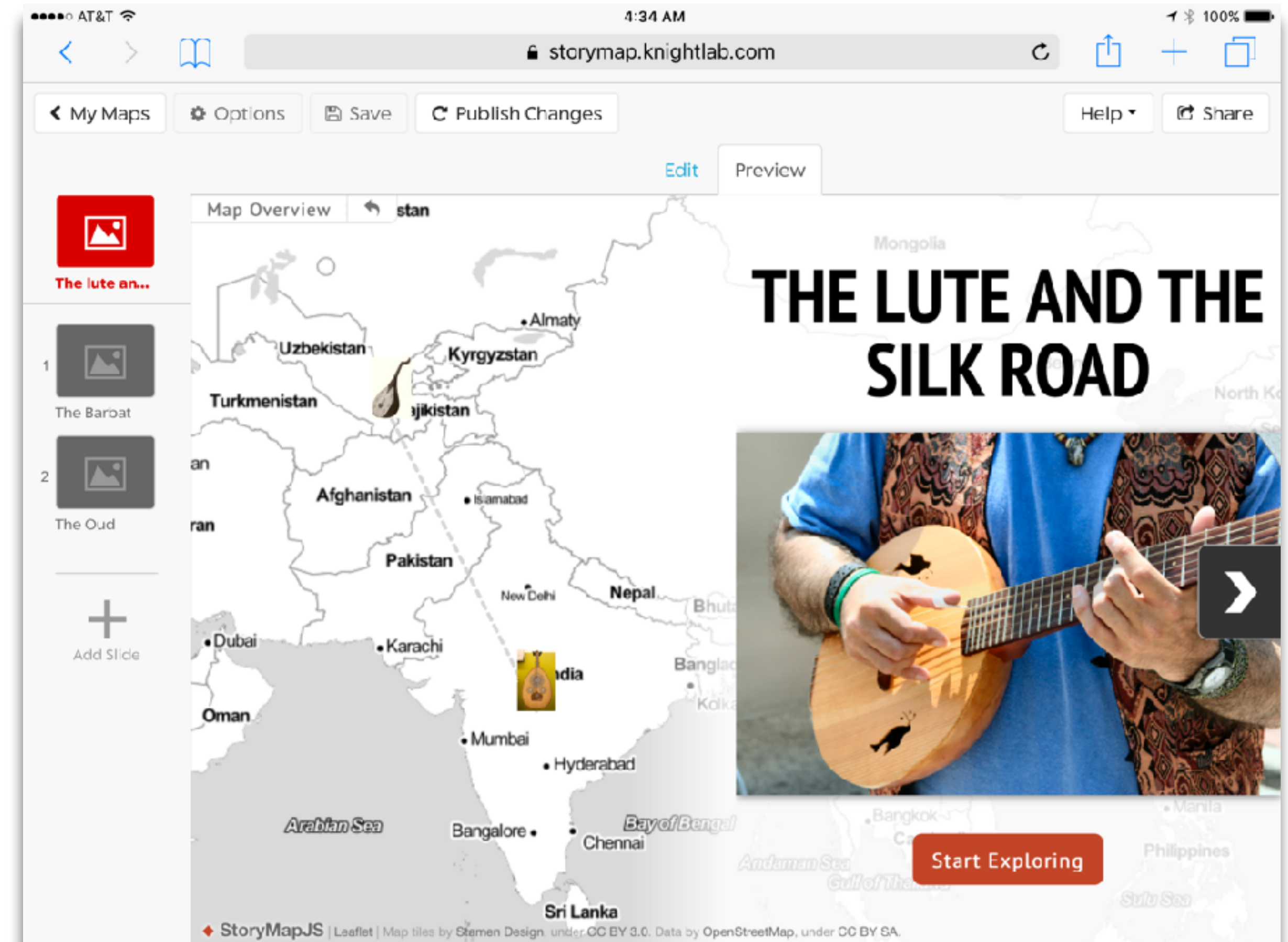
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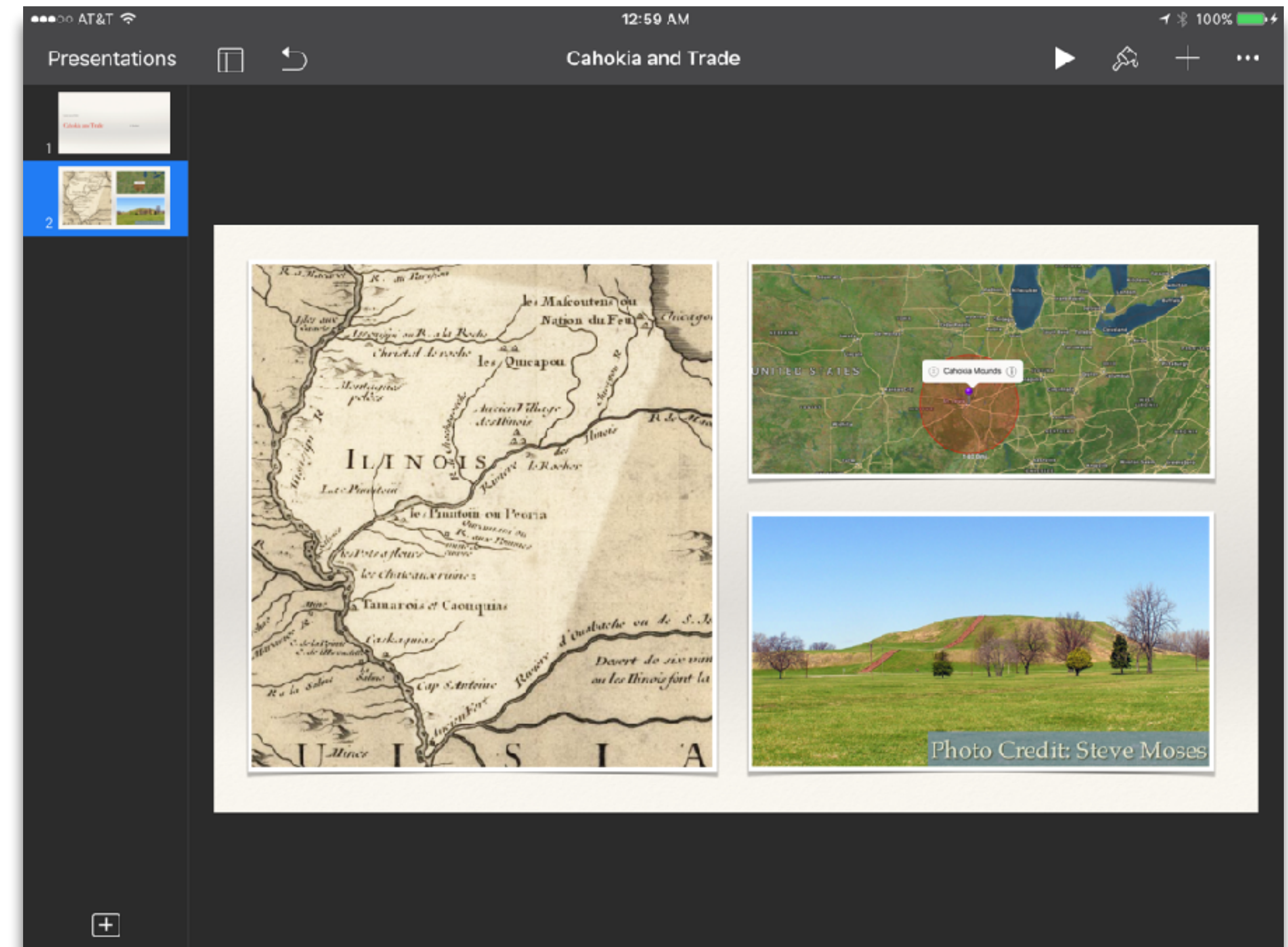
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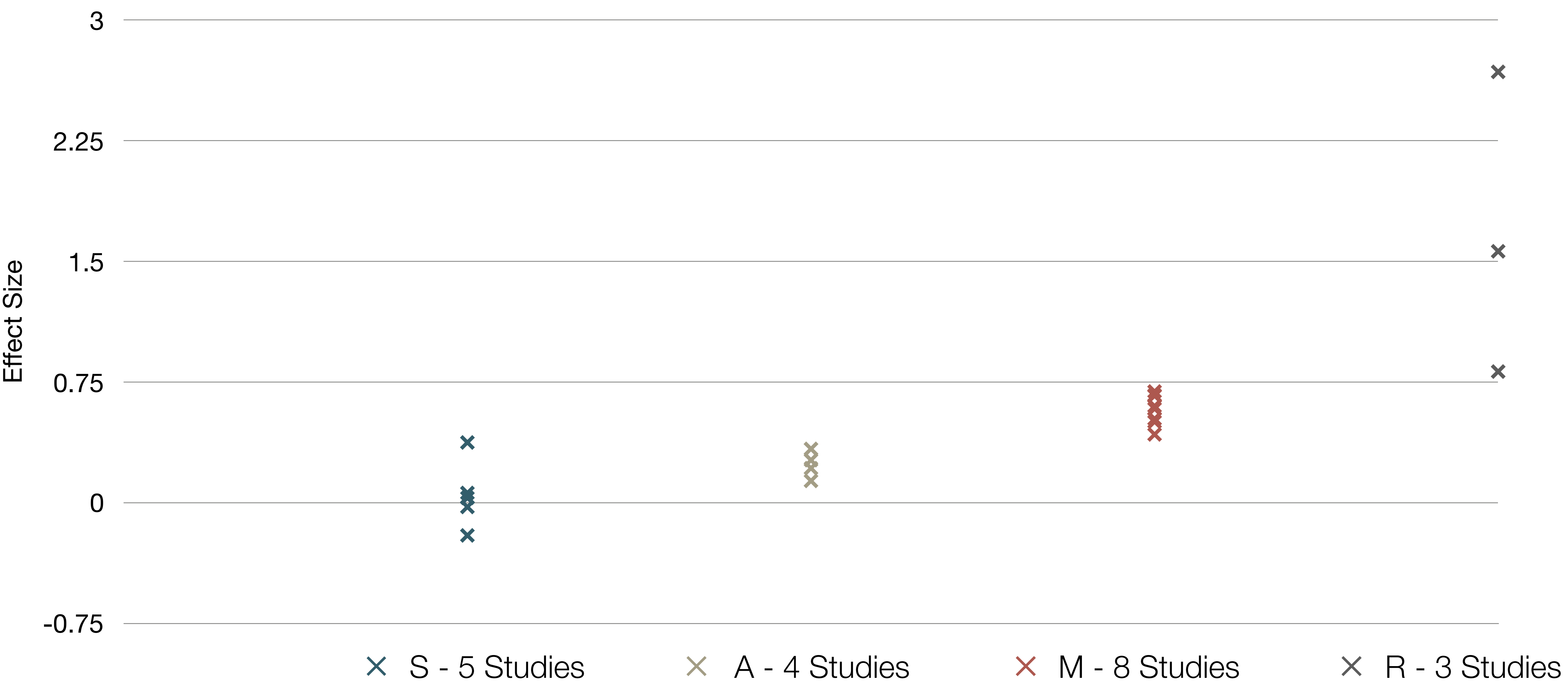


Meta-analysis	Number of studies	<i>ES</i> type	Mean <i>ES</i>	<i>SE</i>
Bangert-Drowns (1993)	19	Missing	0.27	0.11
Bayraktar (2000)	42	Cohen's <i>d</i>	0.27	0.05
Blok, Oostdam, Otter, and Overmaat (2002)	25	Hedges's <i>g</i>	0.25	0.06
Christmann and Badgett (2000)	16	Missing	0.13	0.05
Fletcher-Flinn and Gravatt (1995)	120	Glass's Δ	0.24	0.05
Goldberg, Russell, and Cook (2003)	15	Hedges's <i>g</i>	0.41	0.07
Hsu (2003)	25	Hedges's <i>g</i>	0.43	0.03
Koufogiannakis and Wiebe (2006)	8	Hedges's <i>g</i>	-0.09	0.19
Kuchler (1998)	65	Hedges's <i>g</i>	0.44	0.05
Kulik and Kulik (1991)	239	Glass's Δ	0.30	0.03
Y. C. Liao (1998)	31	Glass's Δ	0.48	0.05
Y.-I. Liao and Chen (2005)	21	Glass's Δ	0.52	0.05
Y. K. C. Liao (2007)	52	Glass's Δ	0.55	0.05

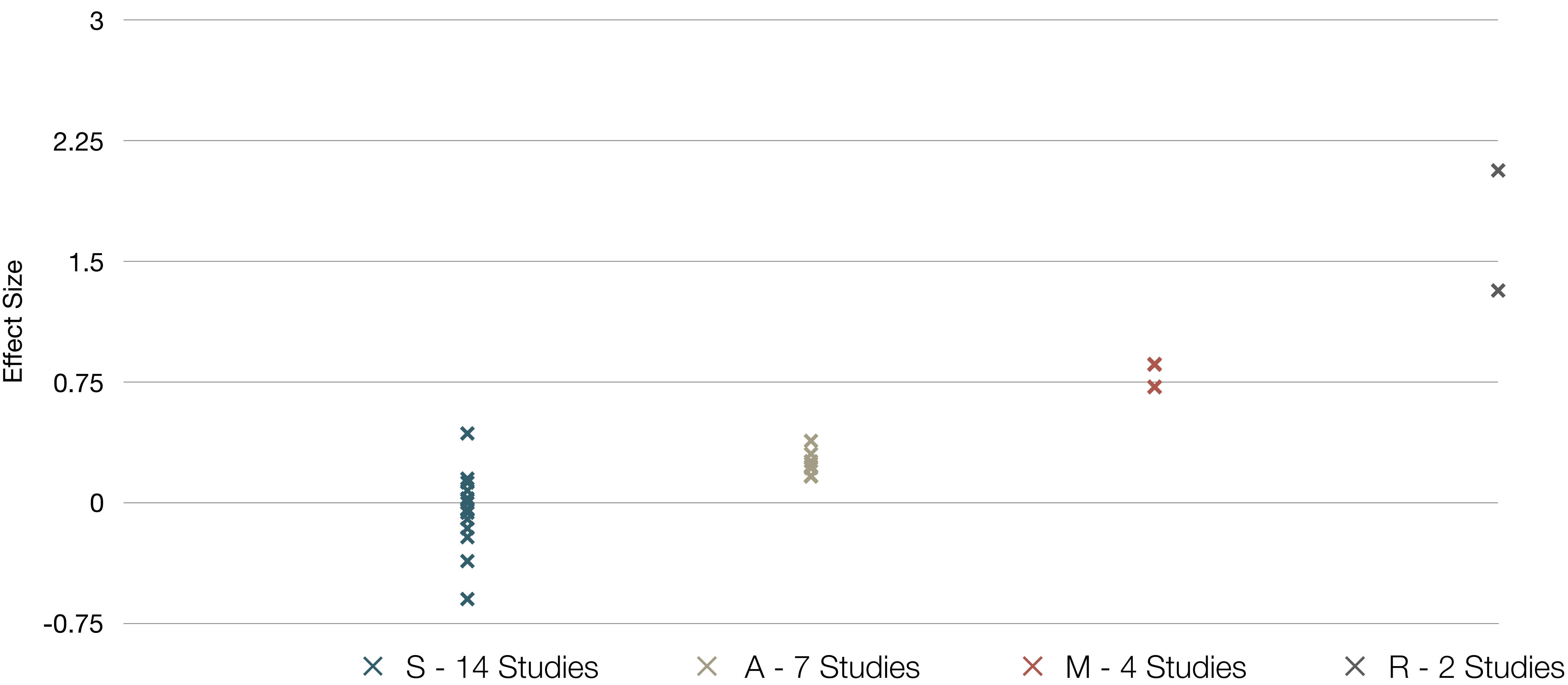
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Michko (2007)	45	Hedges's <i>g</i>	0.43	0.07
Onuoha (2007)	35	Cohen's <i>d</i>	0.26	0.04
Pearson, Ferdig, Blomeyer, and Moran (2005)	20	Hedges's <i>g</i>	0.49 ^a	0.11
Roblyer, Castine, and King (1988)	35	Hedges's <i>g</i>	0.31	0.05
Rosen and Salomon (2007)	31	Hedges's <i>g</i>	0.46	0.05
Schenker (2007)	46	Cohen's <i>d</i>	0.24	0.02
Soe, Koki, and Chang (2000)	17	Hedges's <i>g</i> and Pearson's <i>r</i> ^a	0.26 ^a	0.05
Timmerman and Kruepke (2006)	114	Pearson's <i>r</i> ^a	0.24	0.03
Torgerson and Elbourne (2002)	5	Cohen's <i>d</i>	0.37	0.16
Waxman, Lin, and Michko (2003)	42	Glass's Δ	0.45	0.14
Yaakub (1998)	20	Glass's Δ and <i>g</i>	0.35	0.05
Zhao (2003)	9	Hedges's <i>g</i>	1.12	0.26

a. Converted to Cohen's *d*.

SAMR and the Use of Technology to Enhance Reading Performance in Middle School



SAMR and the Use of Tablets in Education



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?

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

Bookmarks



RSS Feeds

Discussions



Microblogging

Blogging

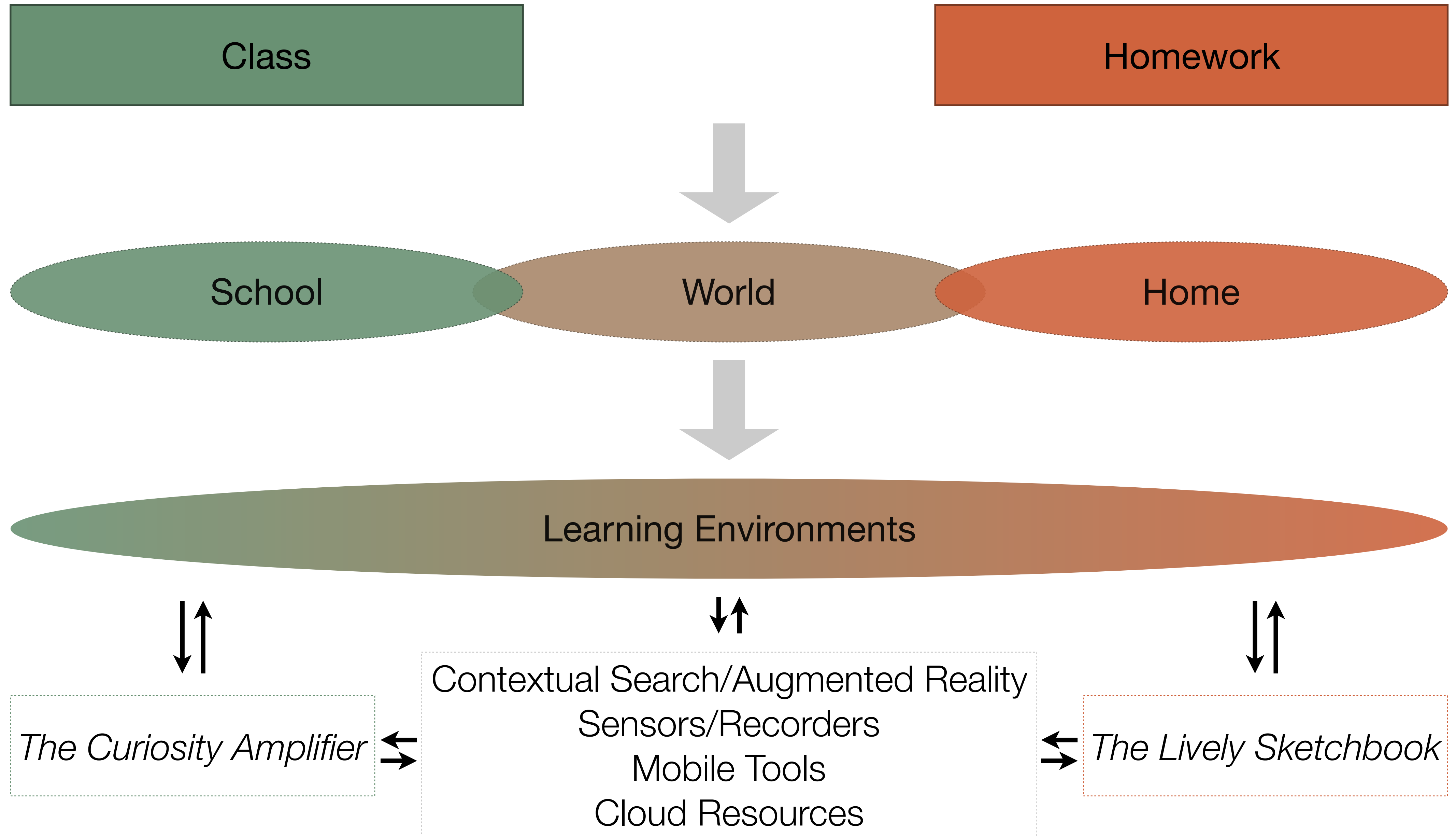


Wikis

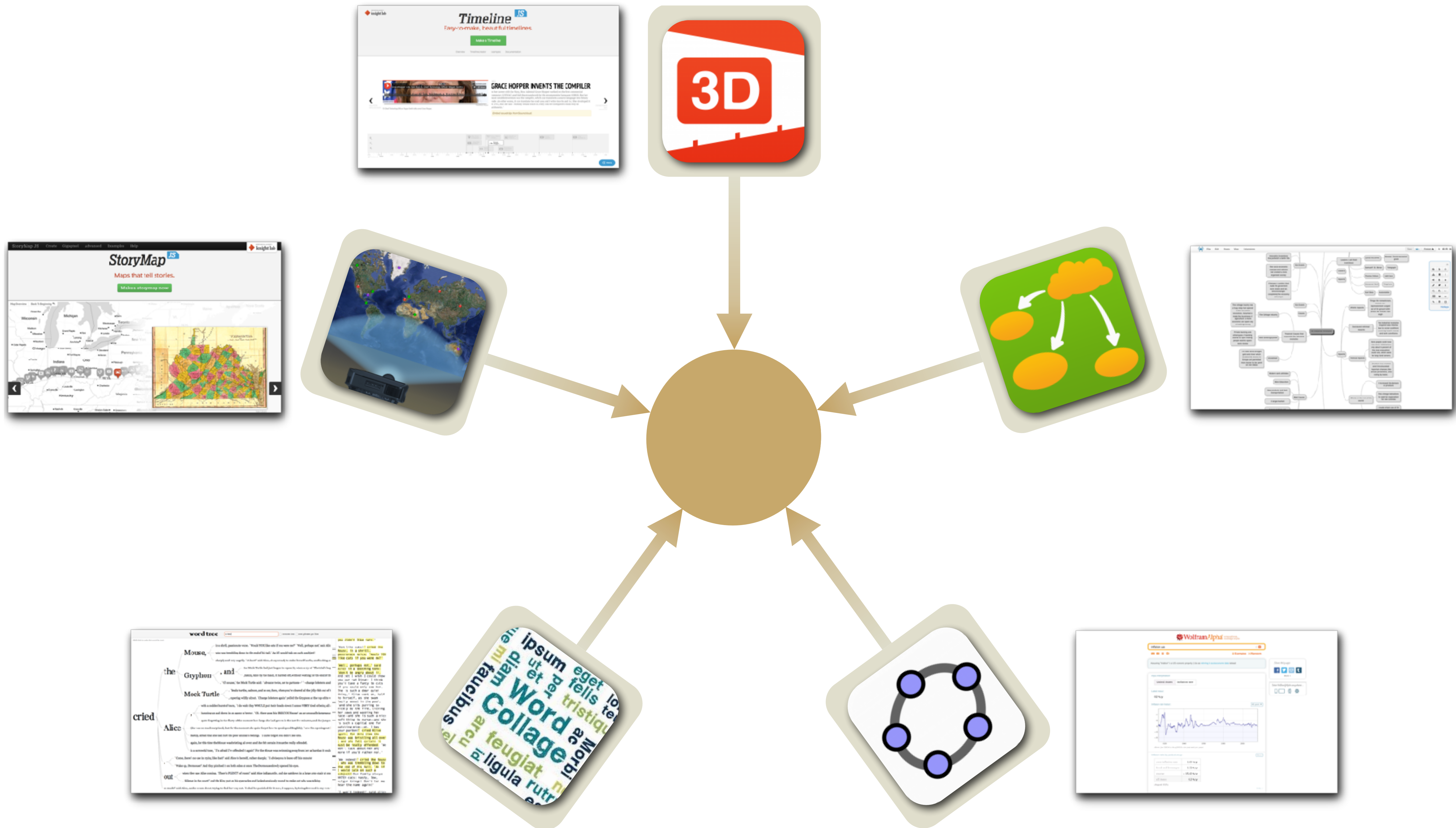
Telepresence



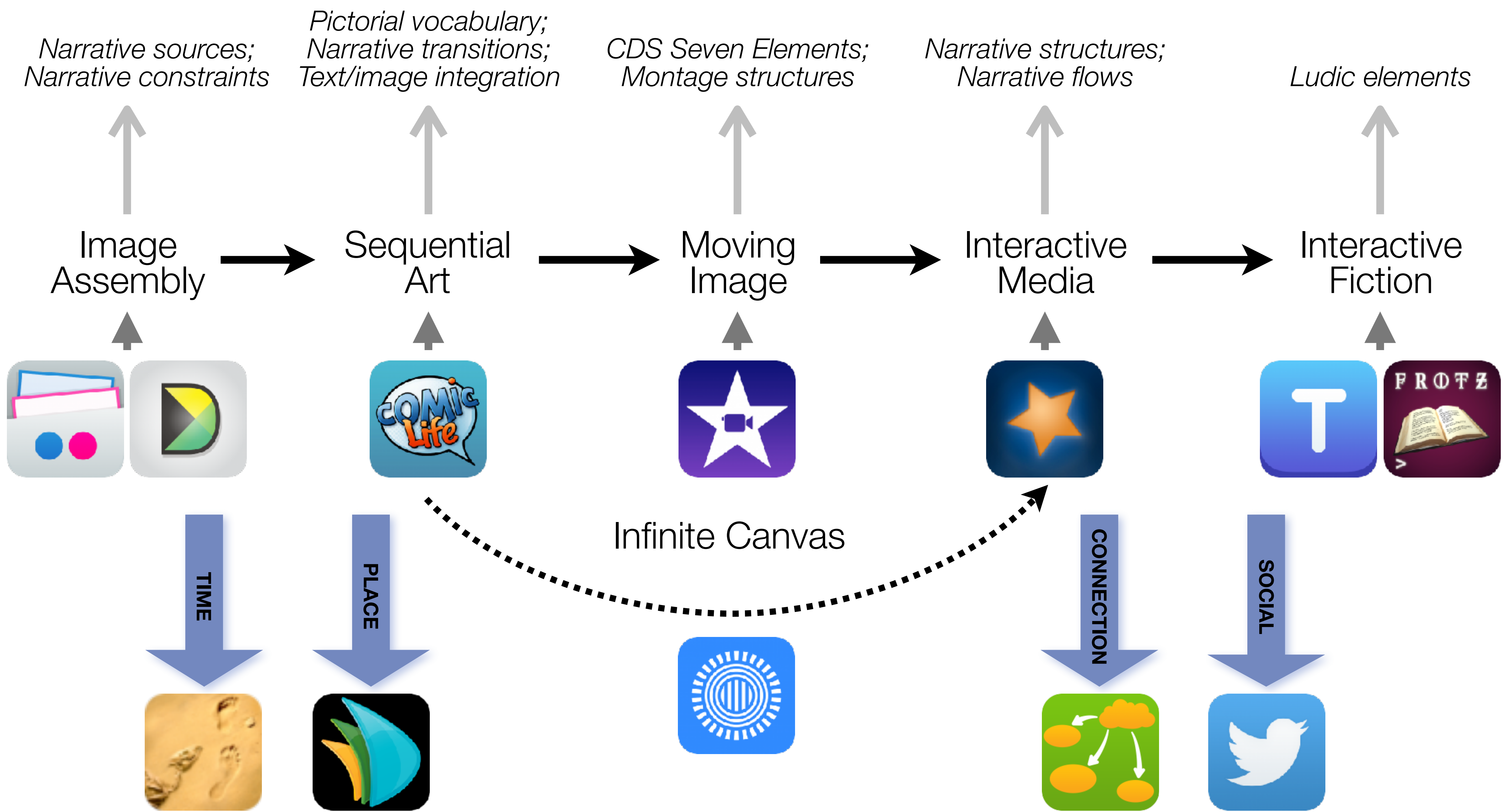
File Sharing



Visualization



Storytelling



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.”

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

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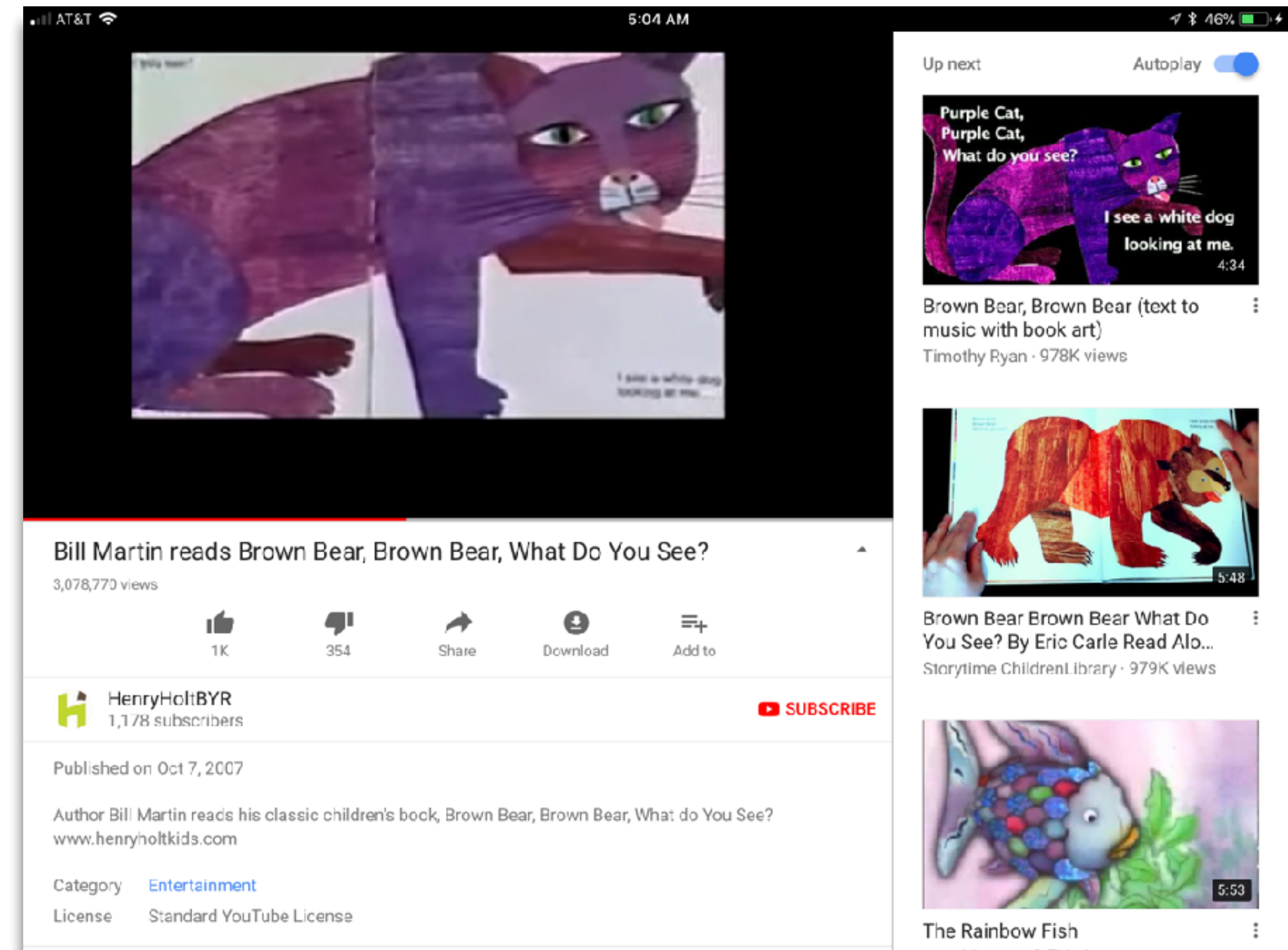
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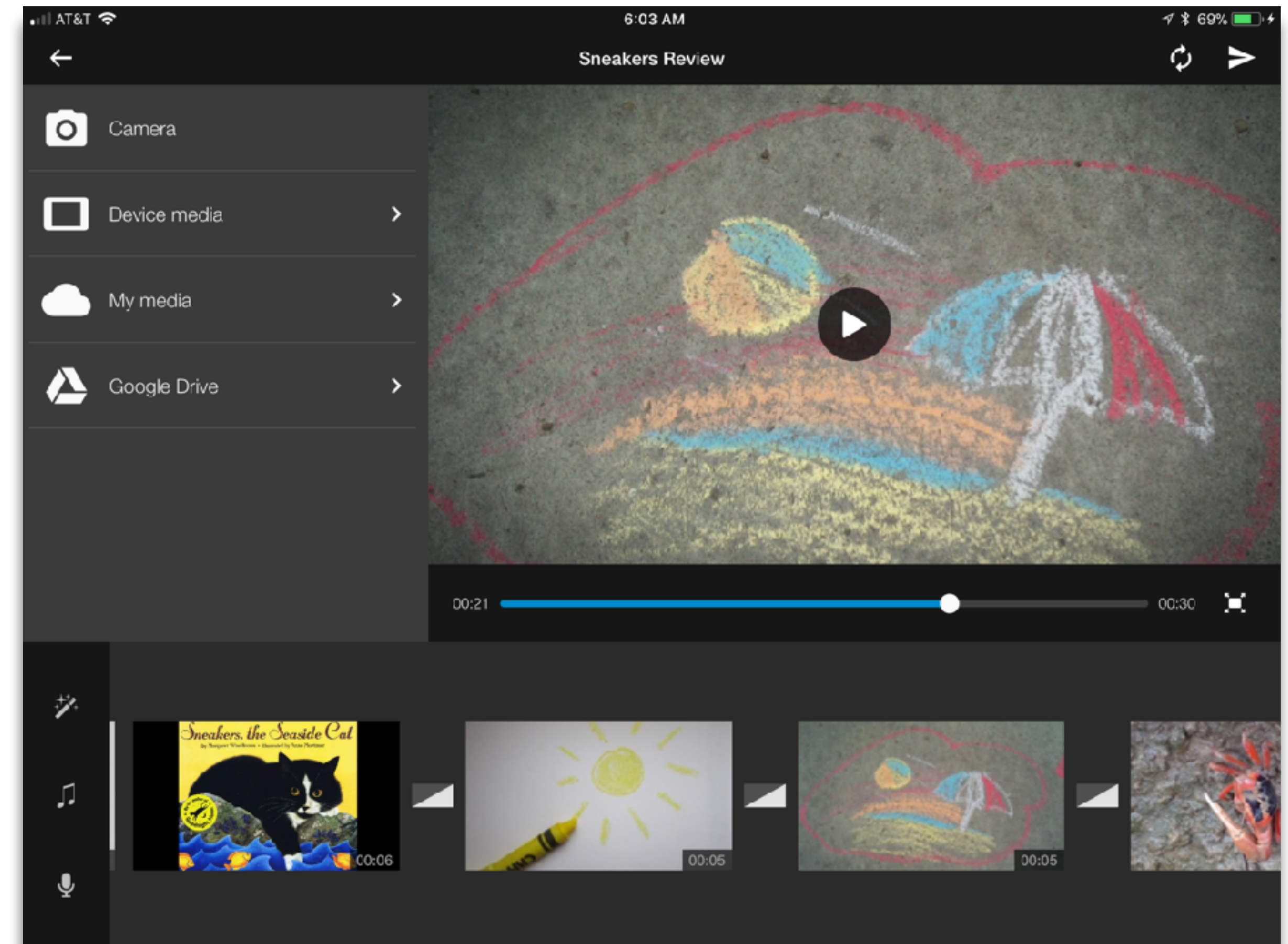
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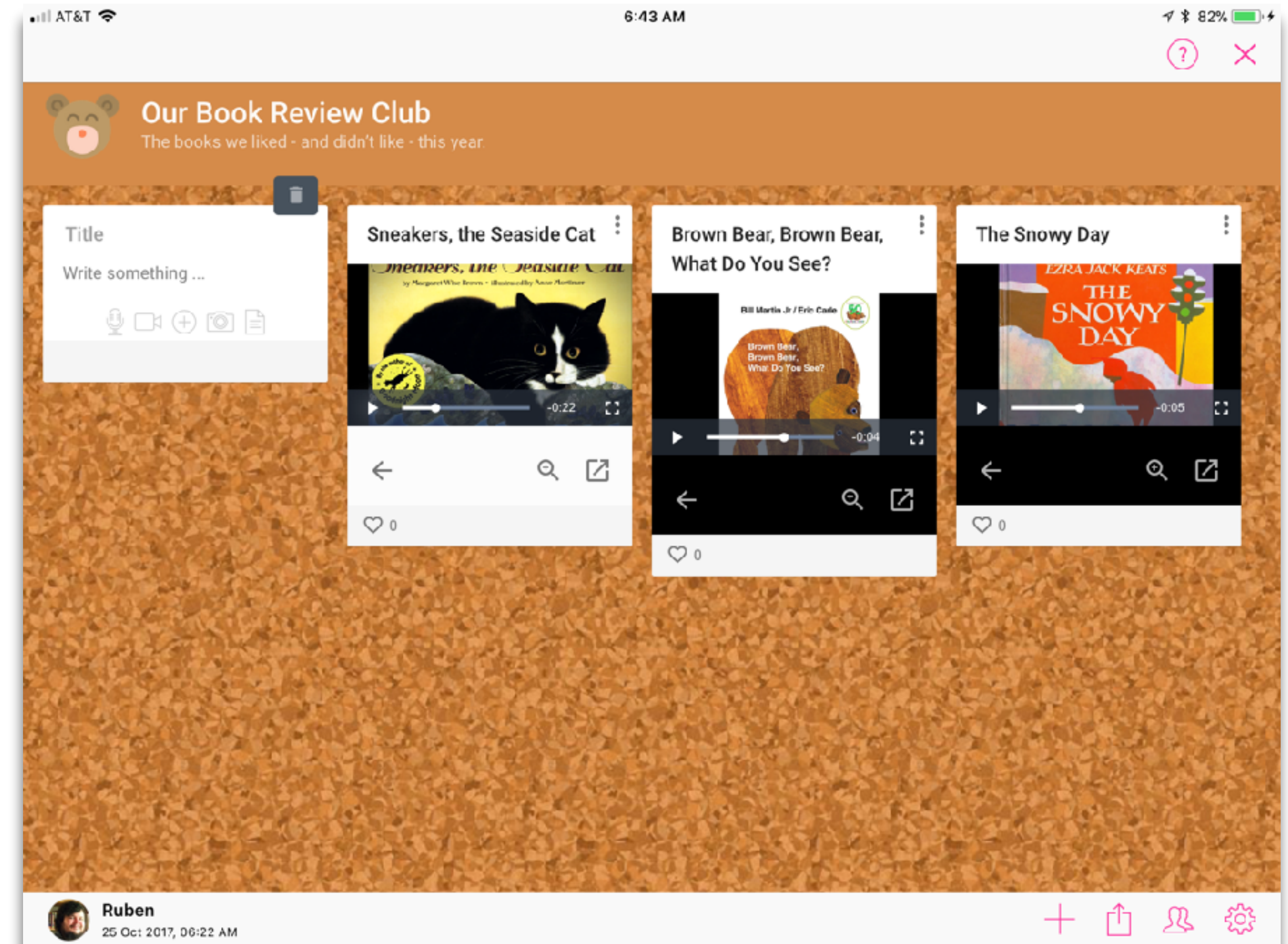
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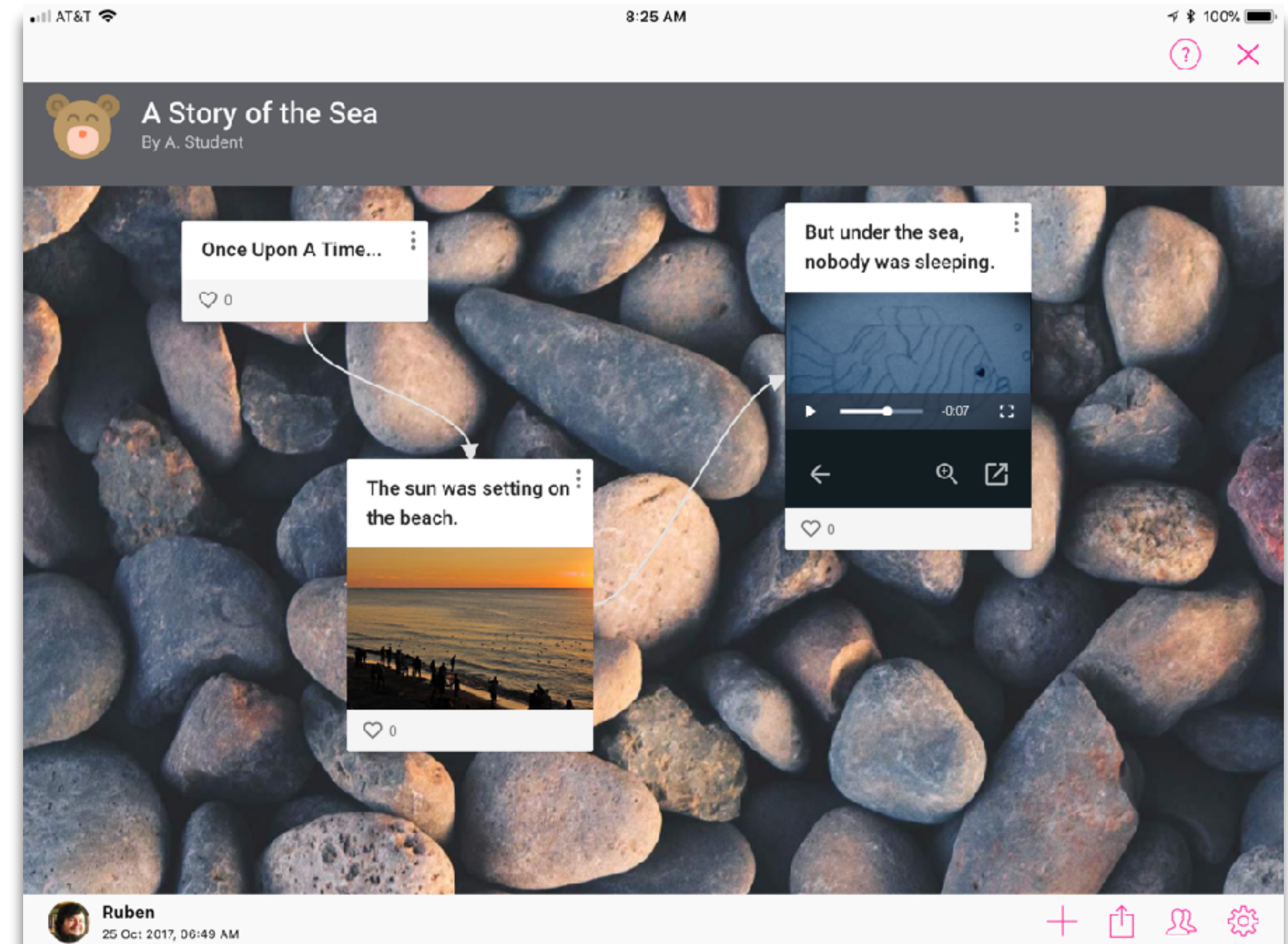
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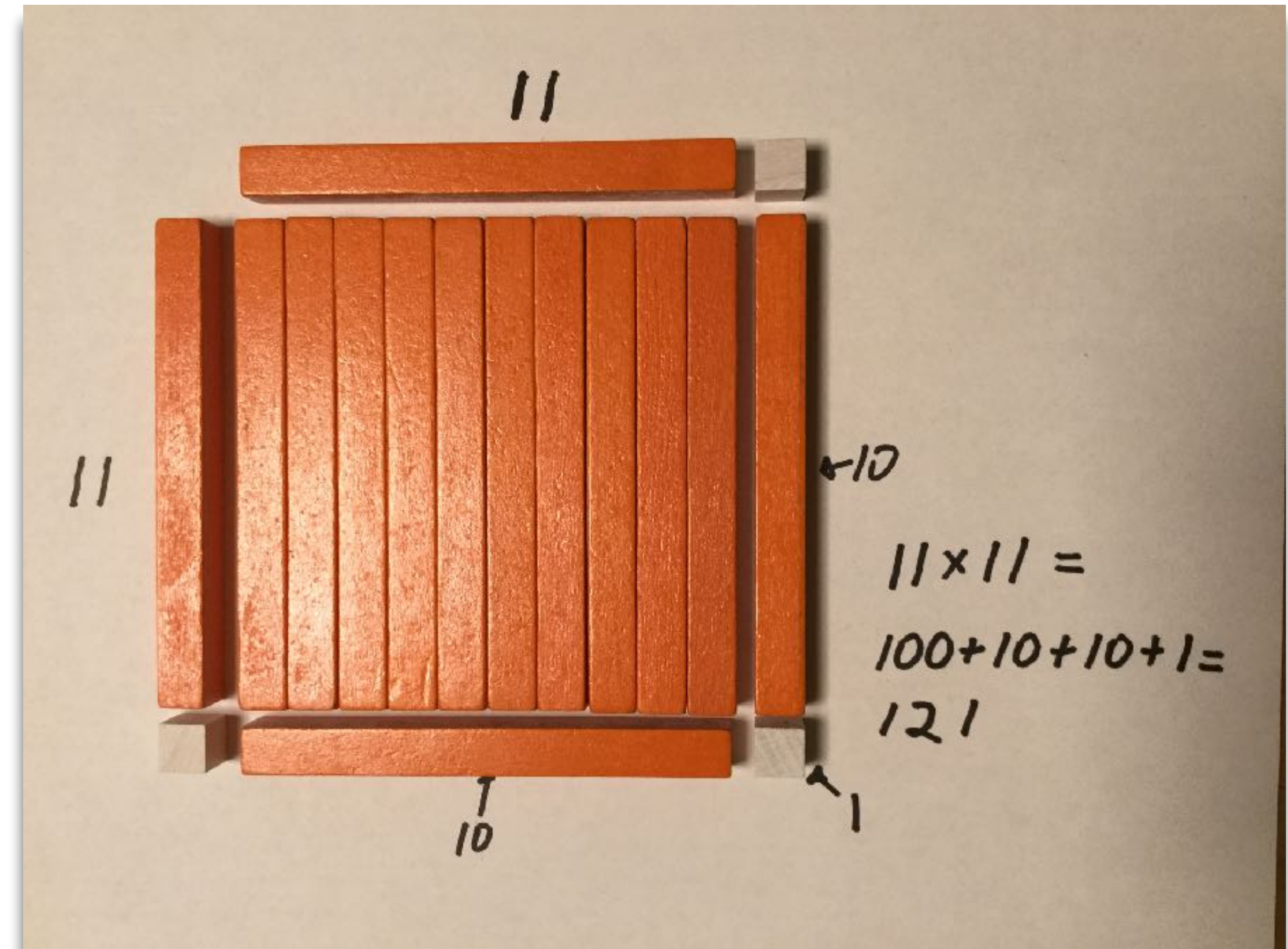
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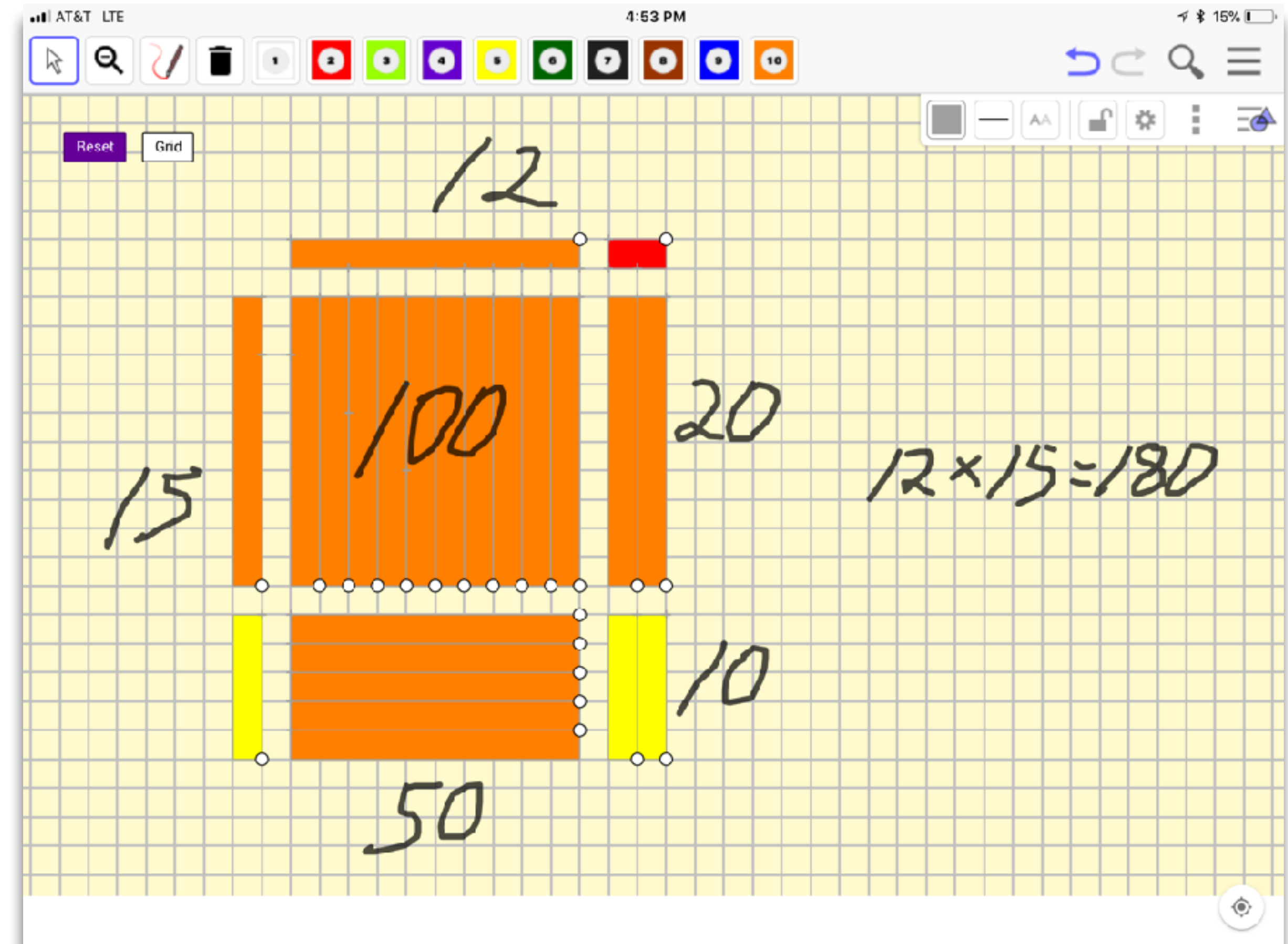
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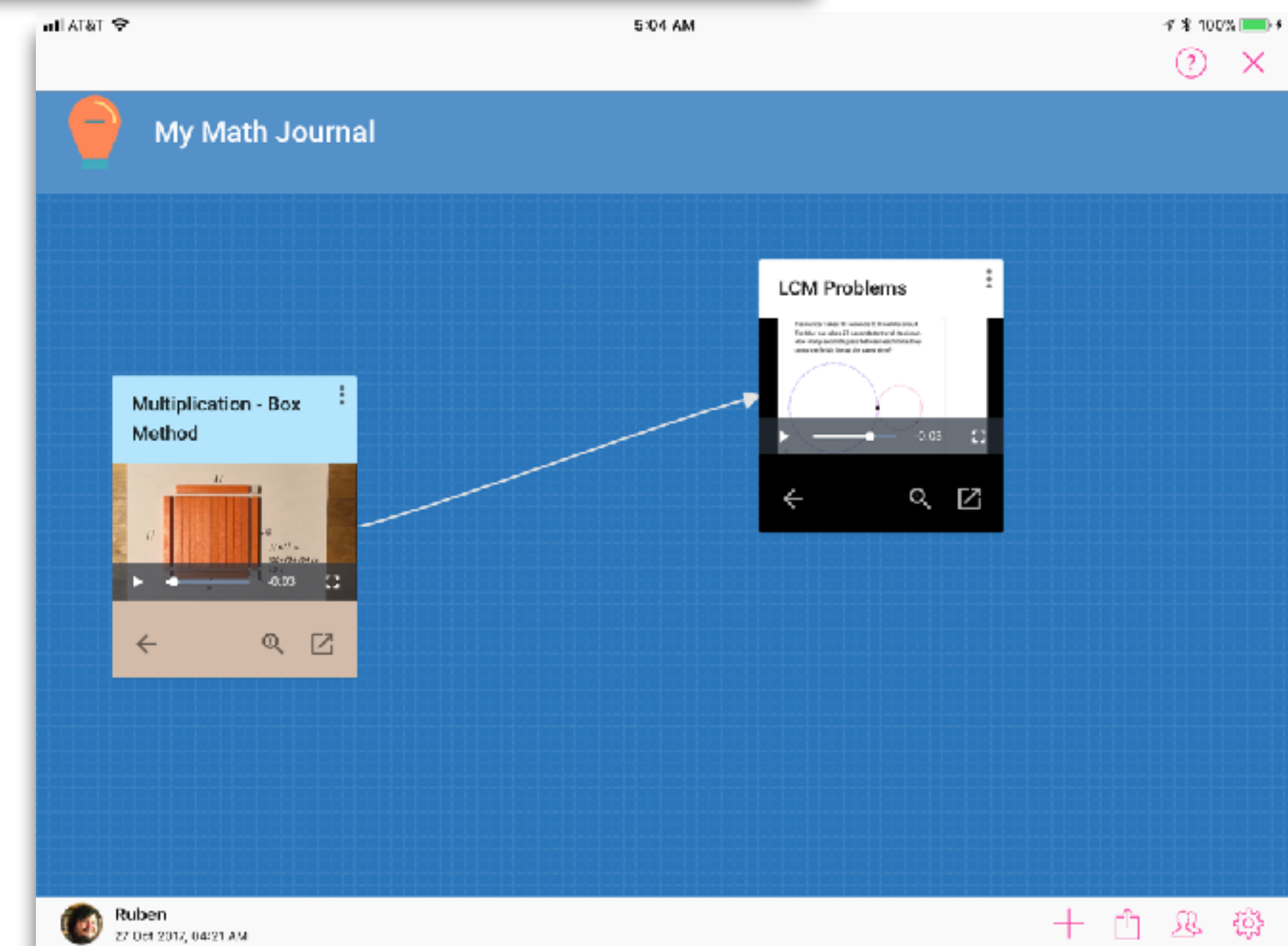
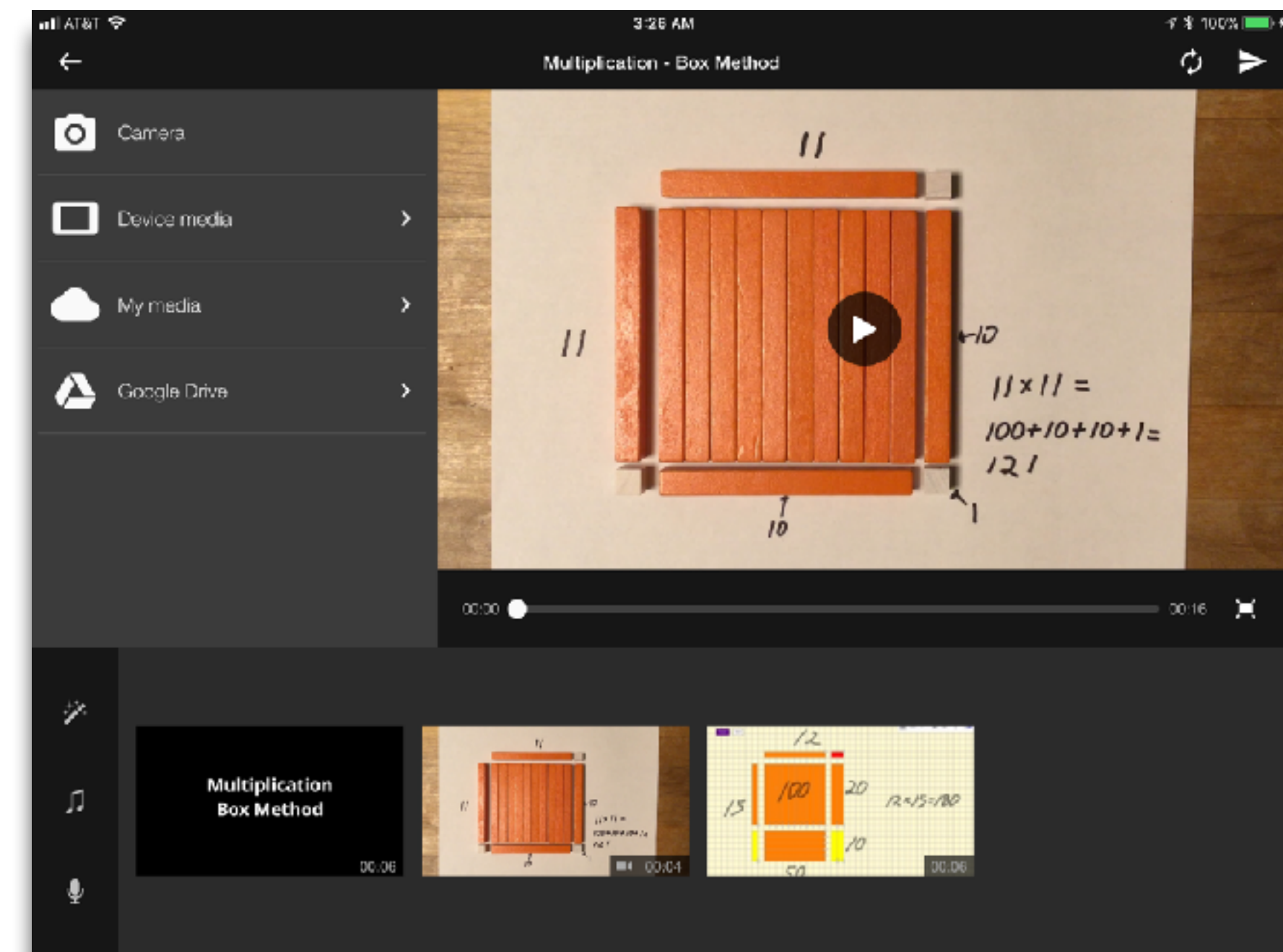
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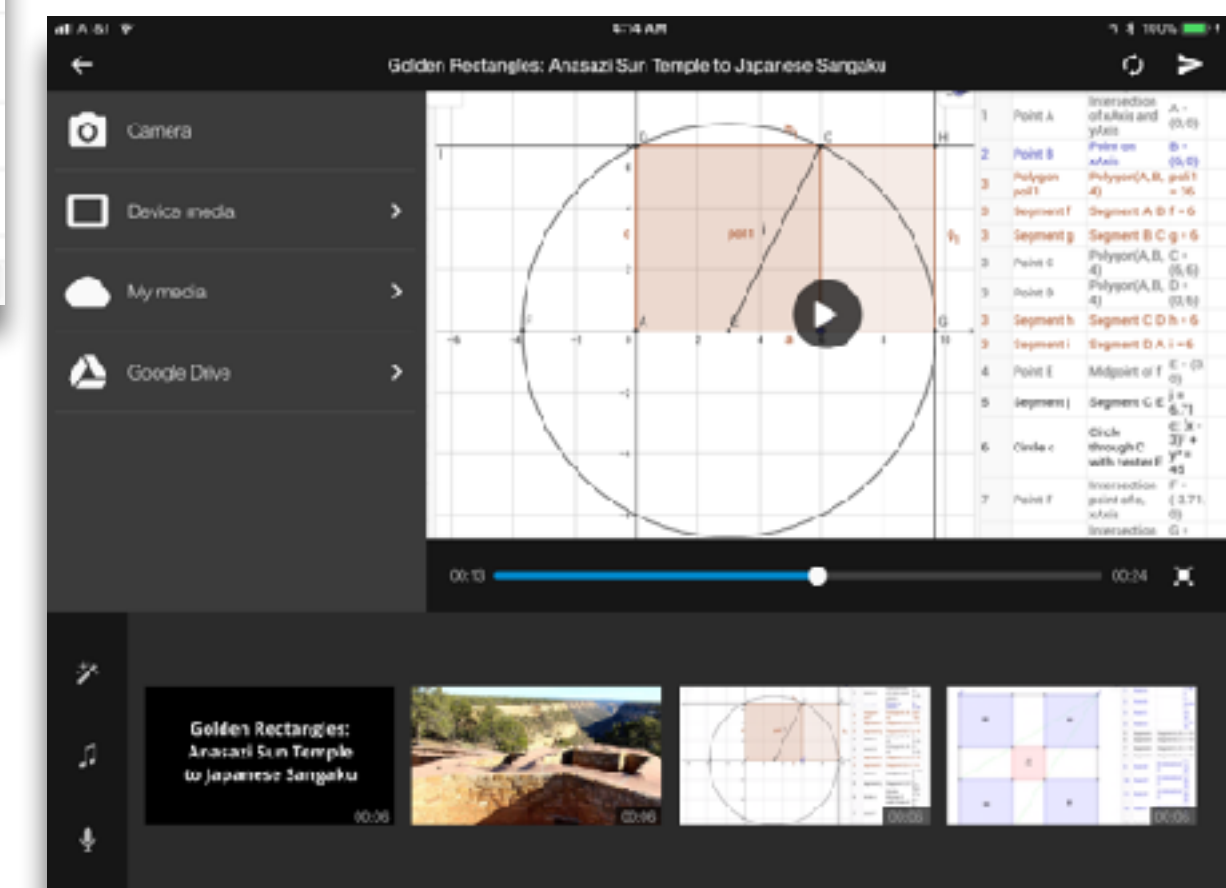
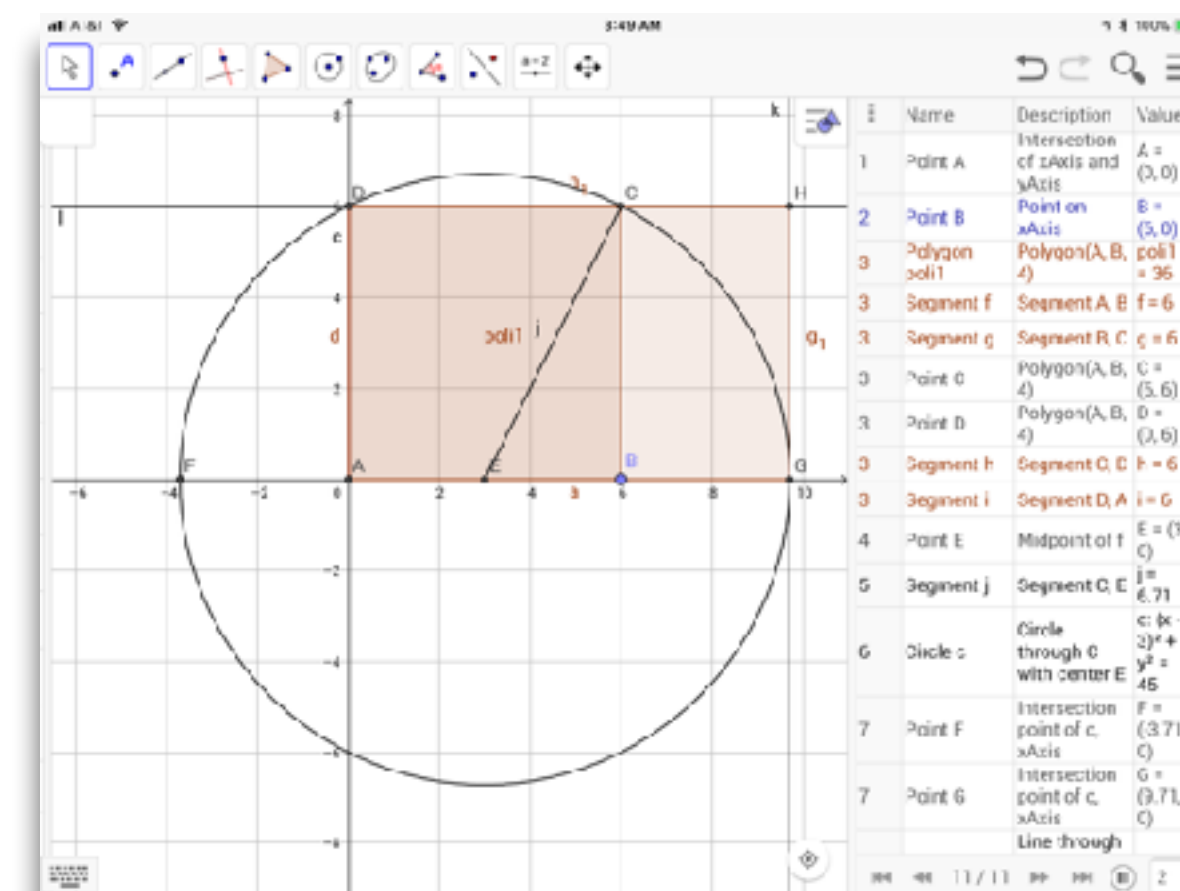
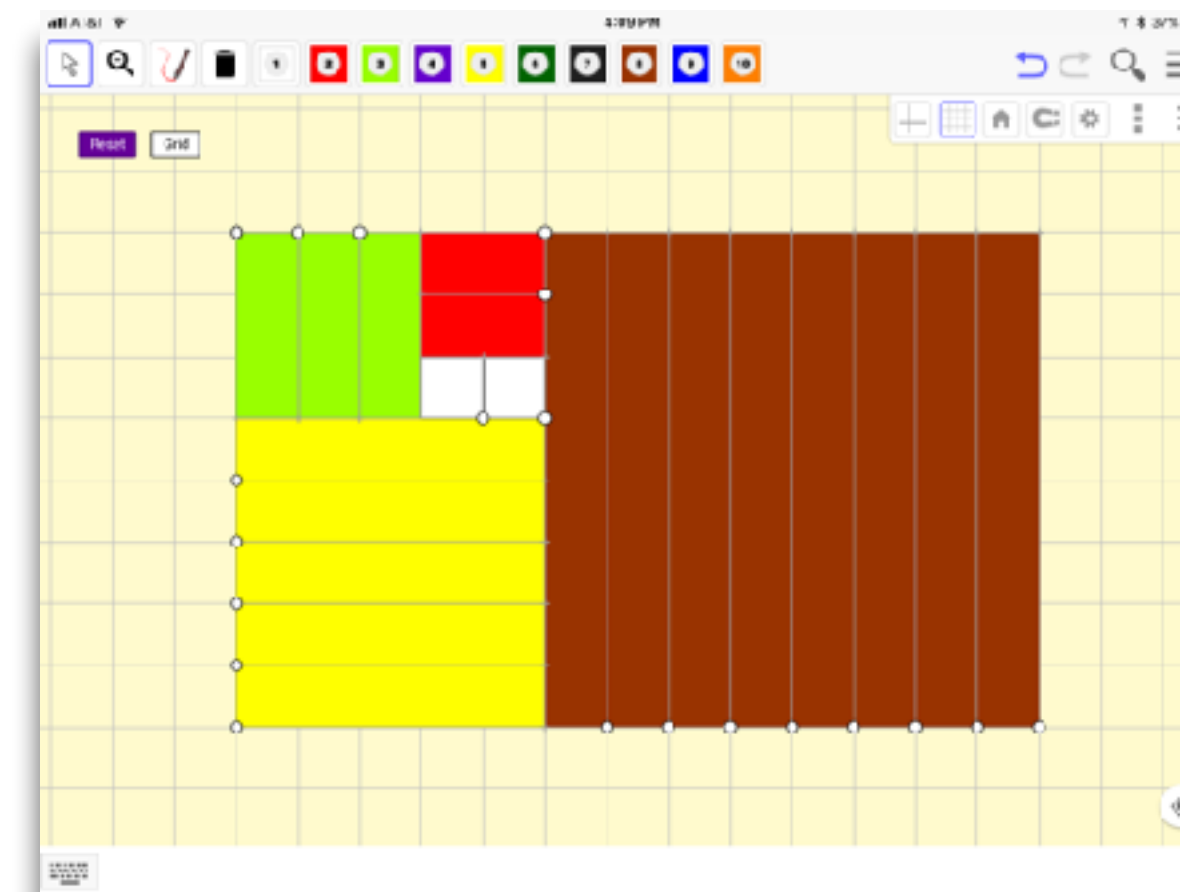
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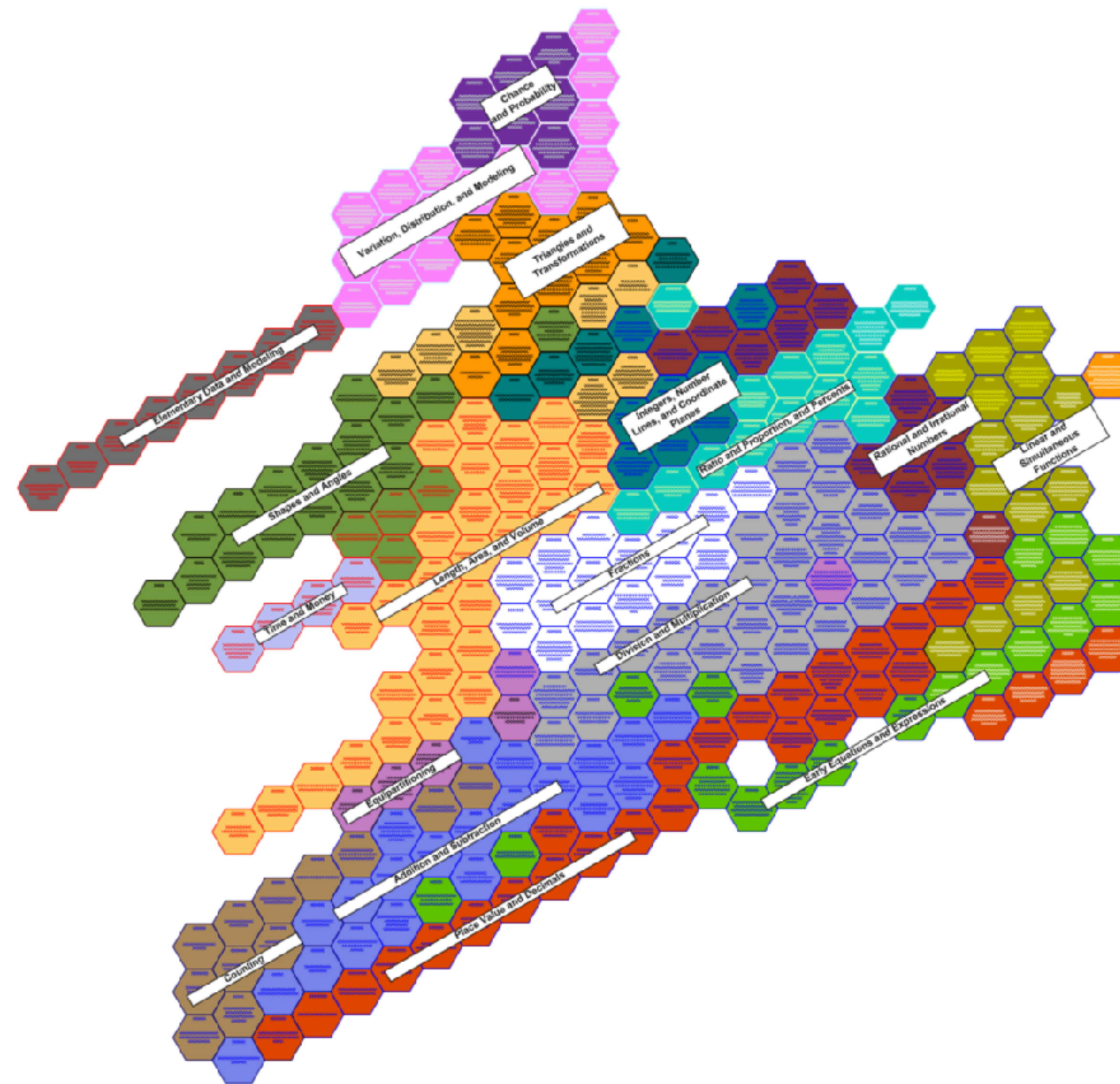
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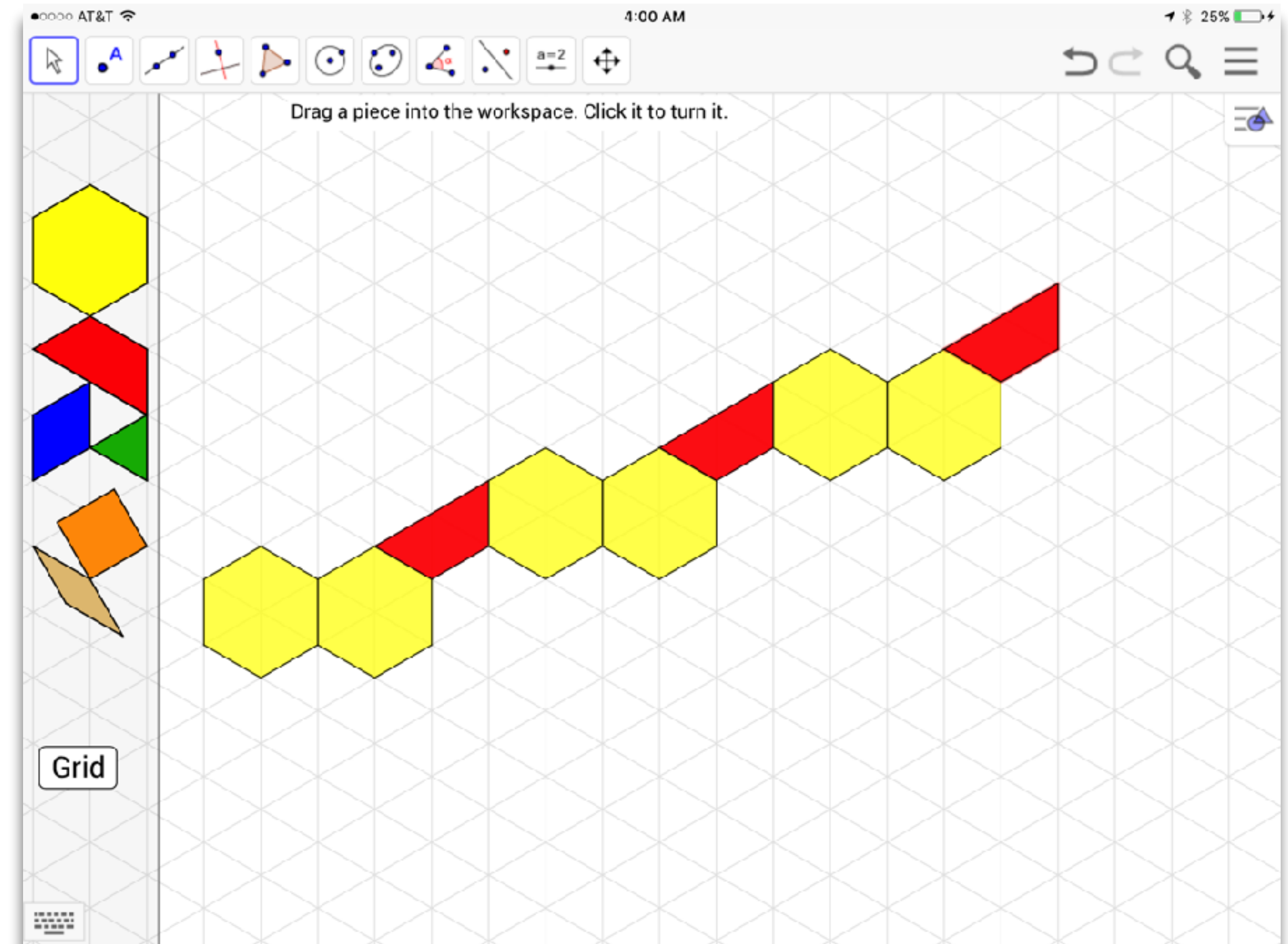
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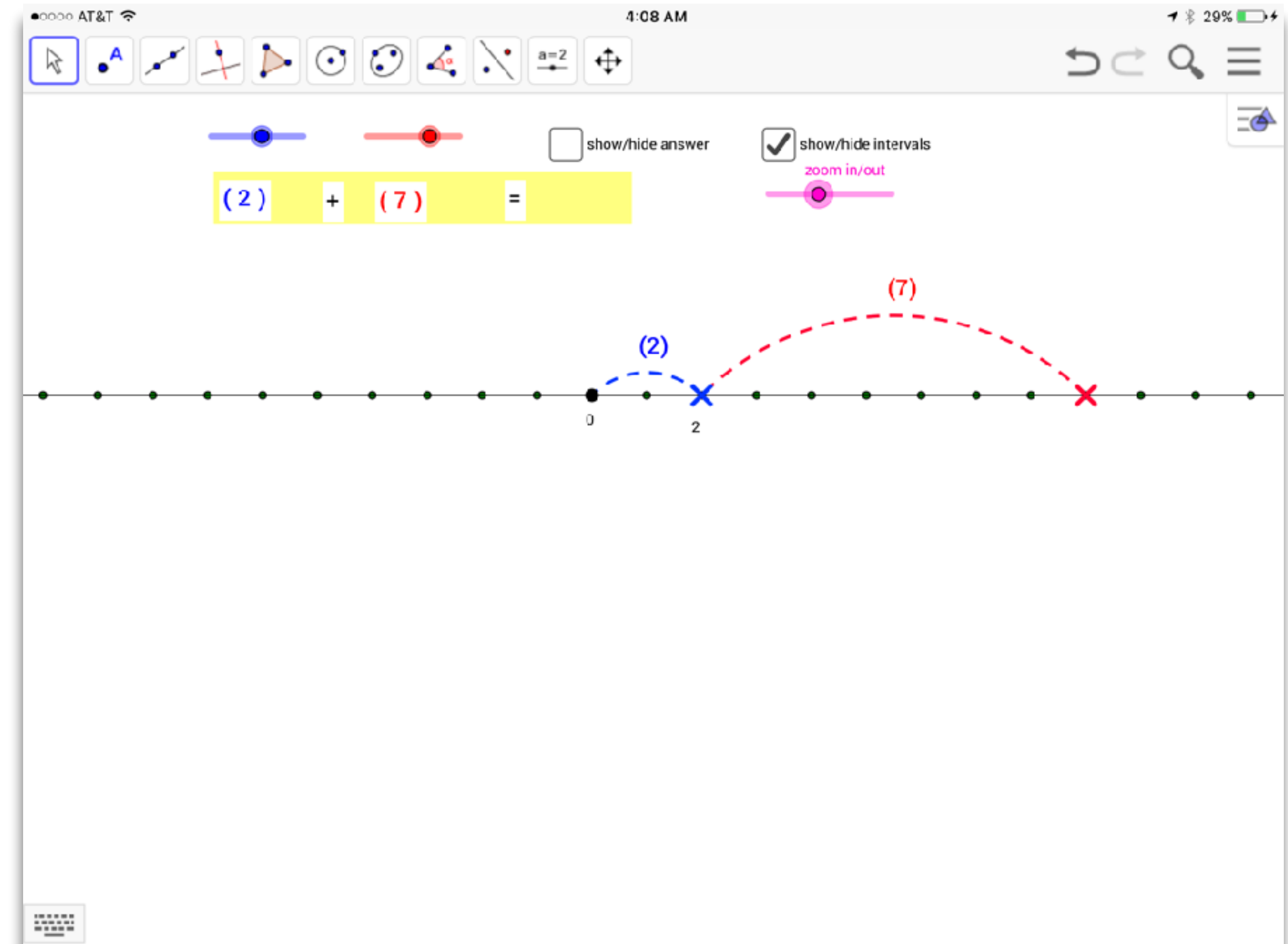
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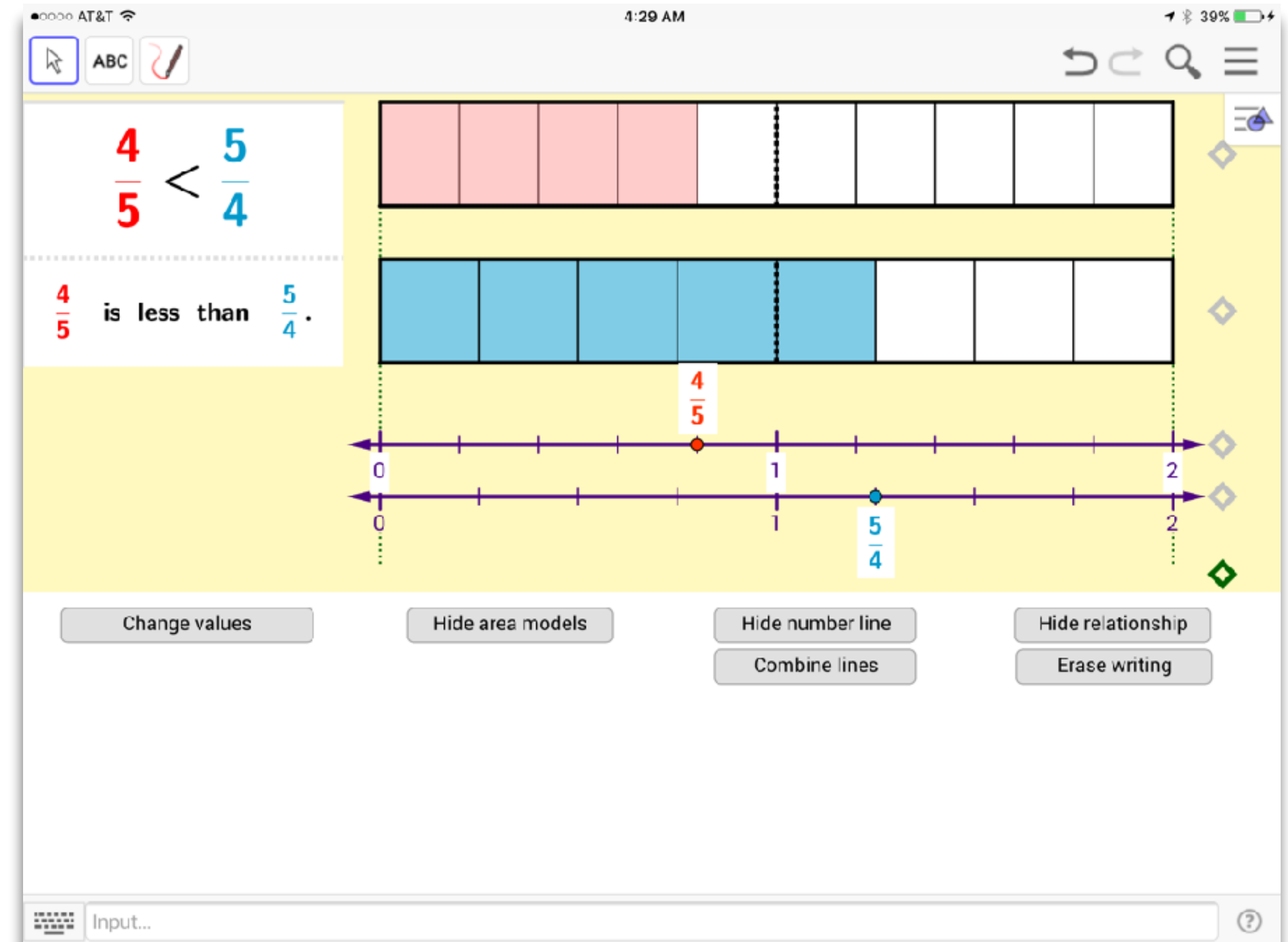
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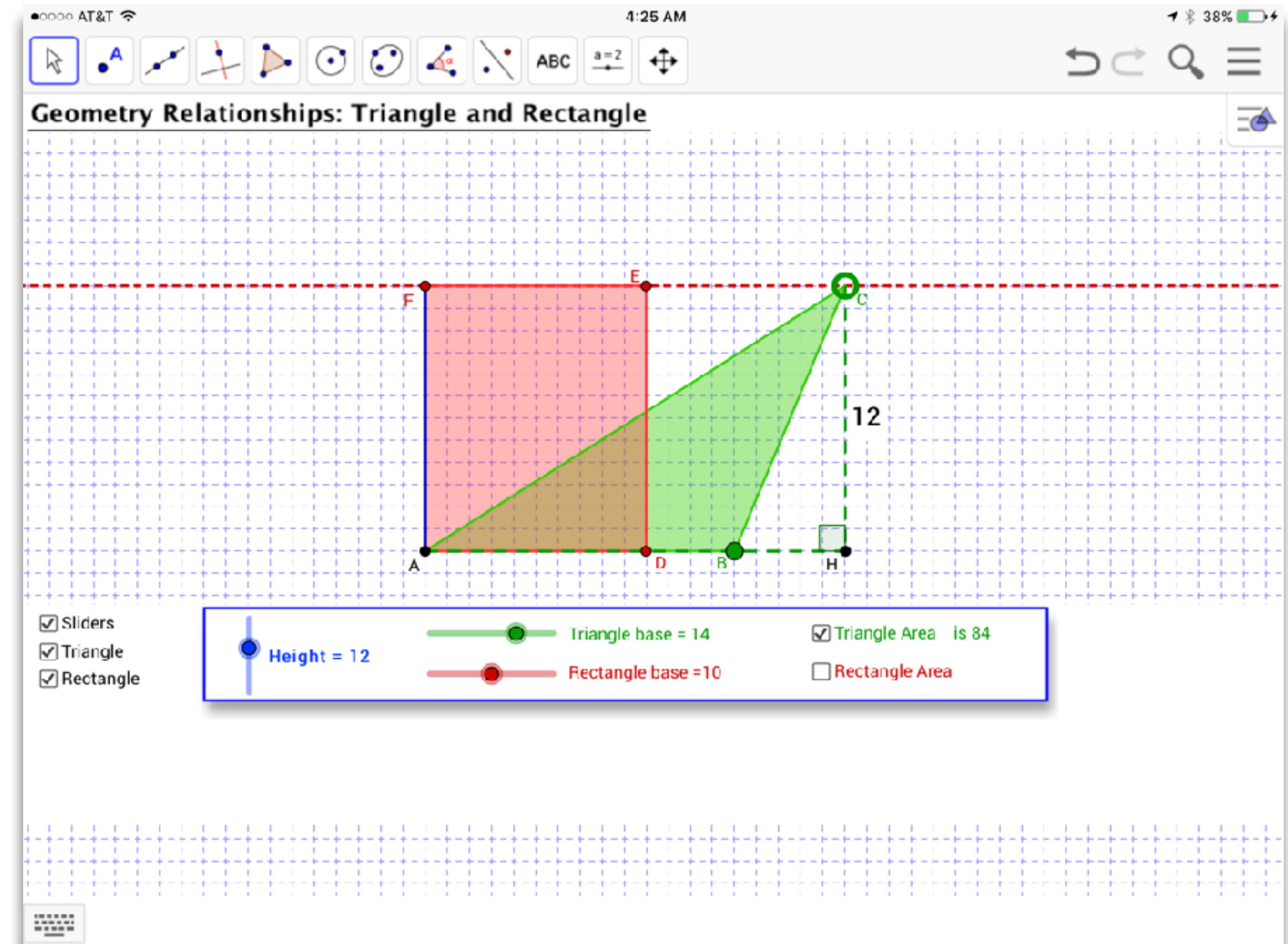
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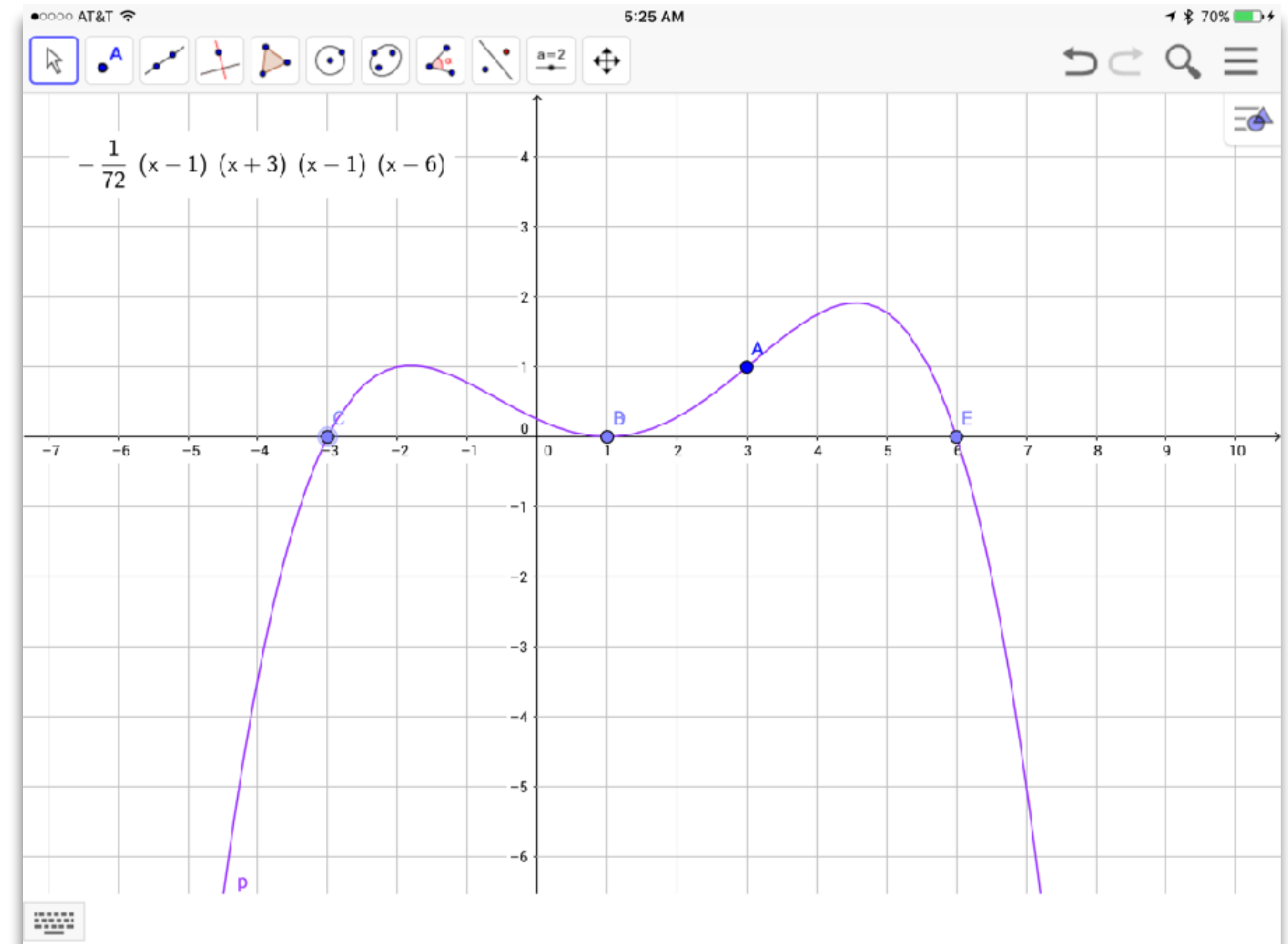
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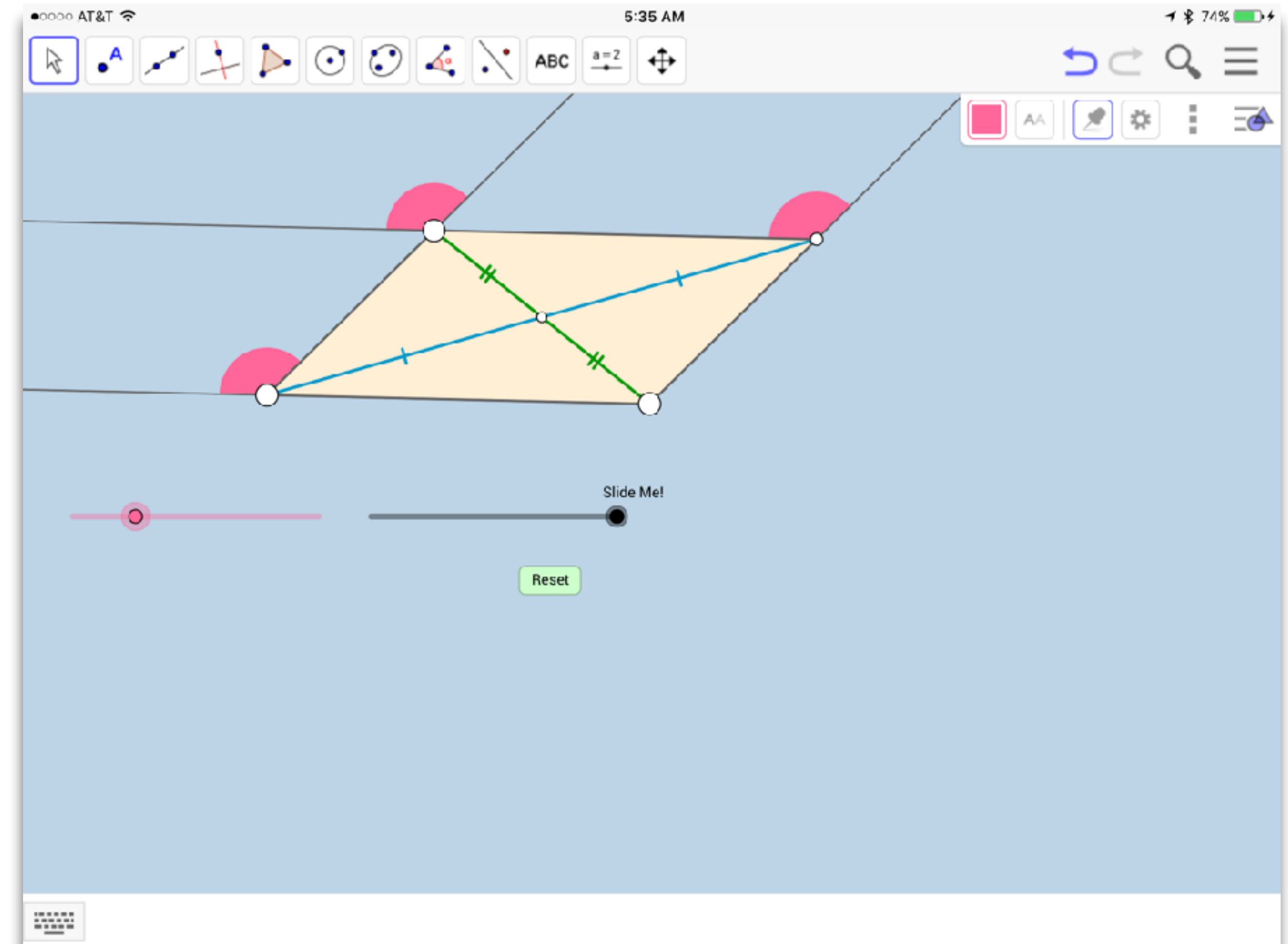
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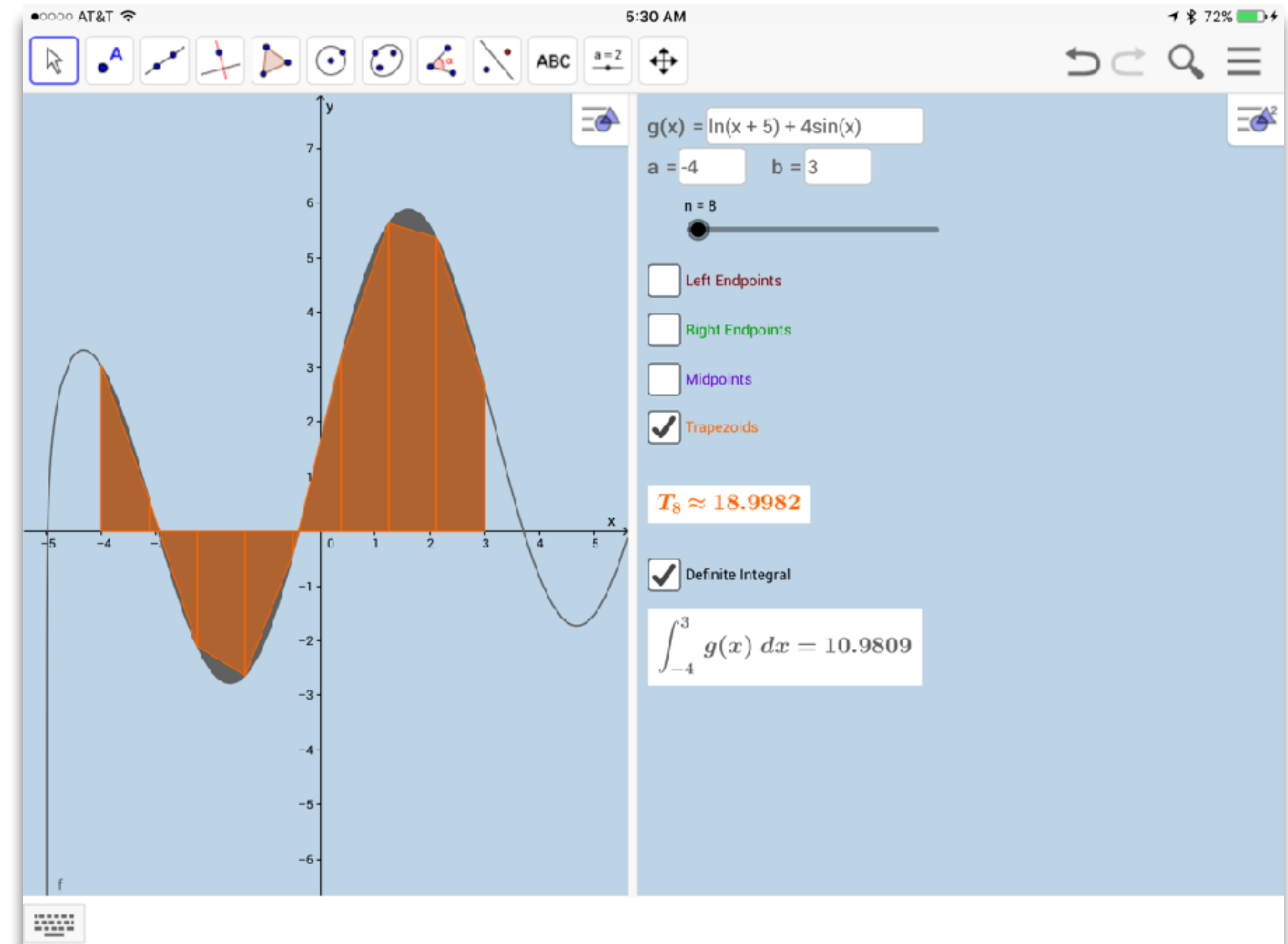
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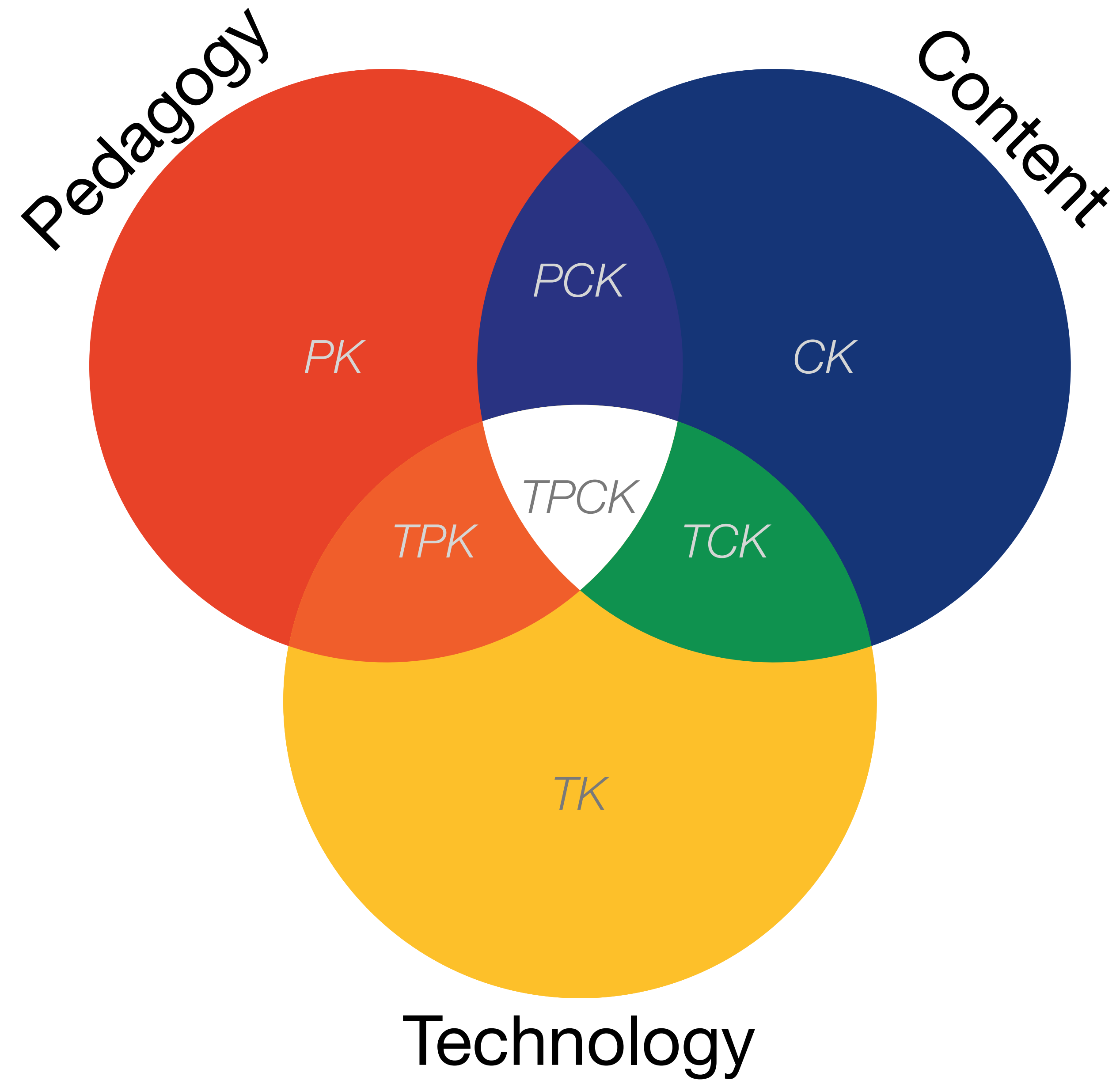
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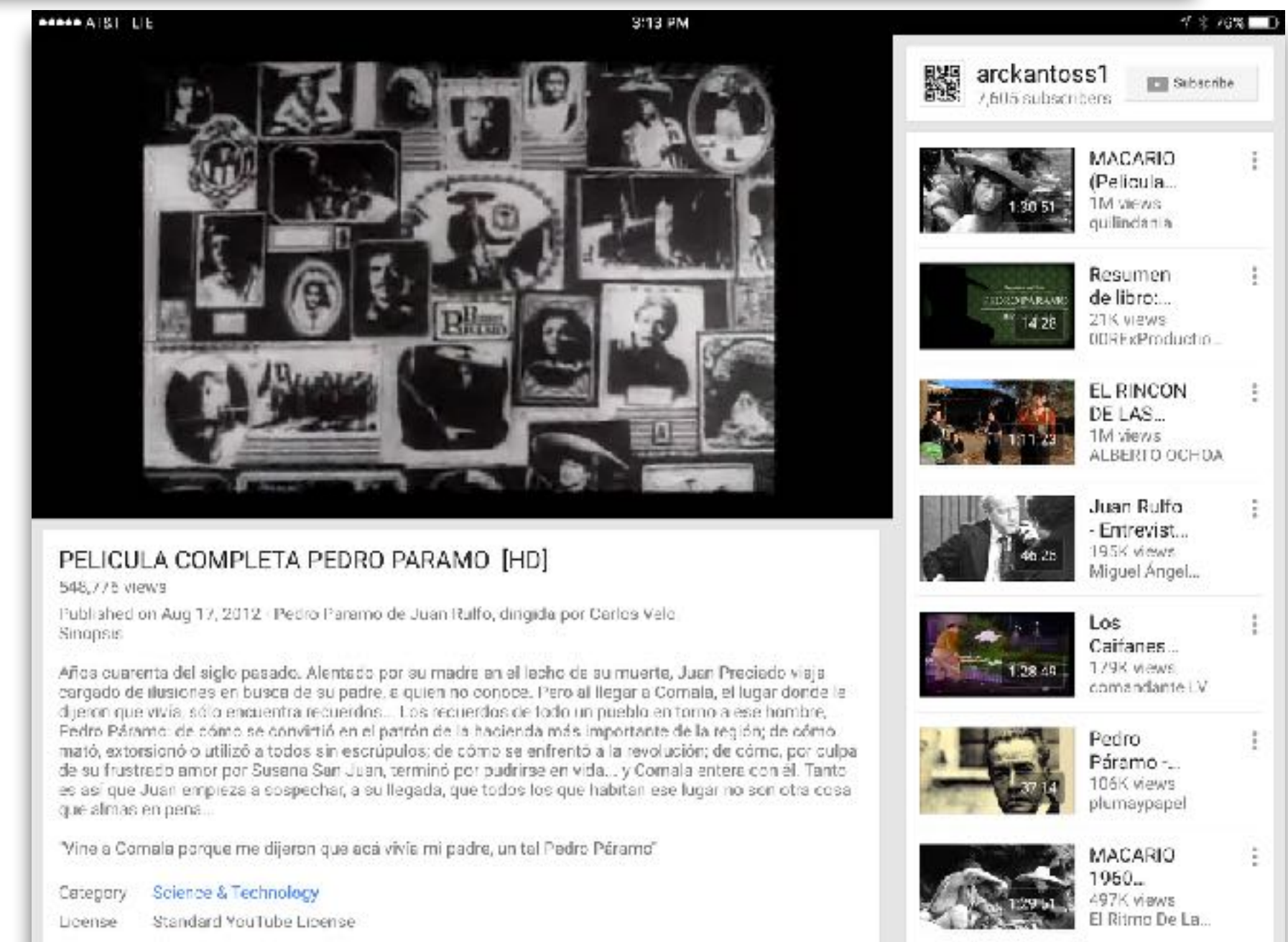
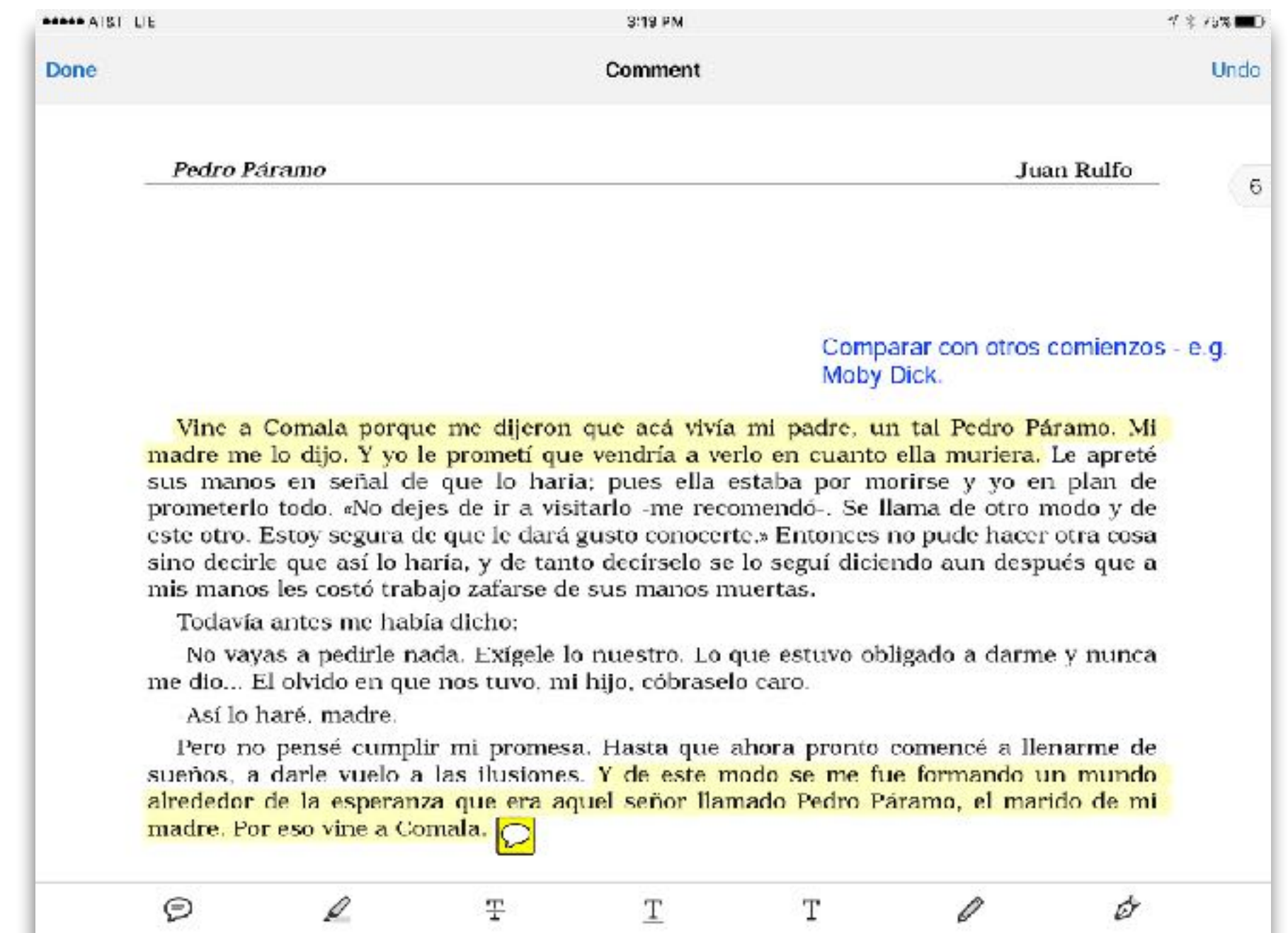
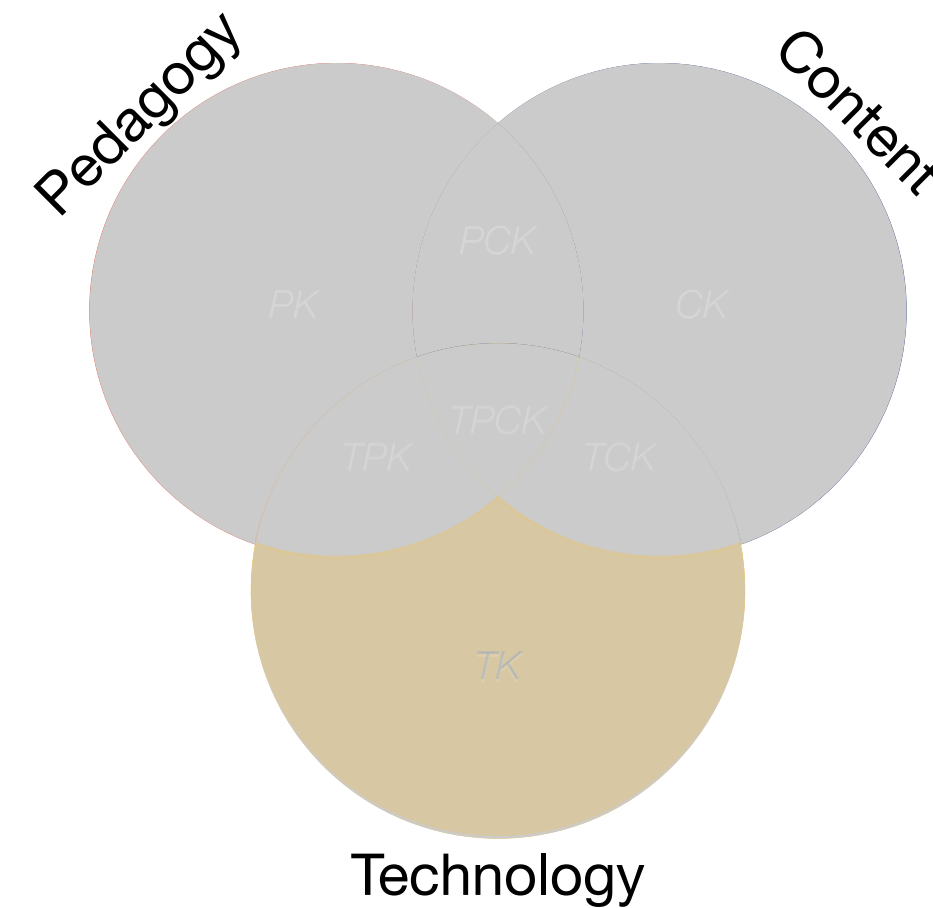
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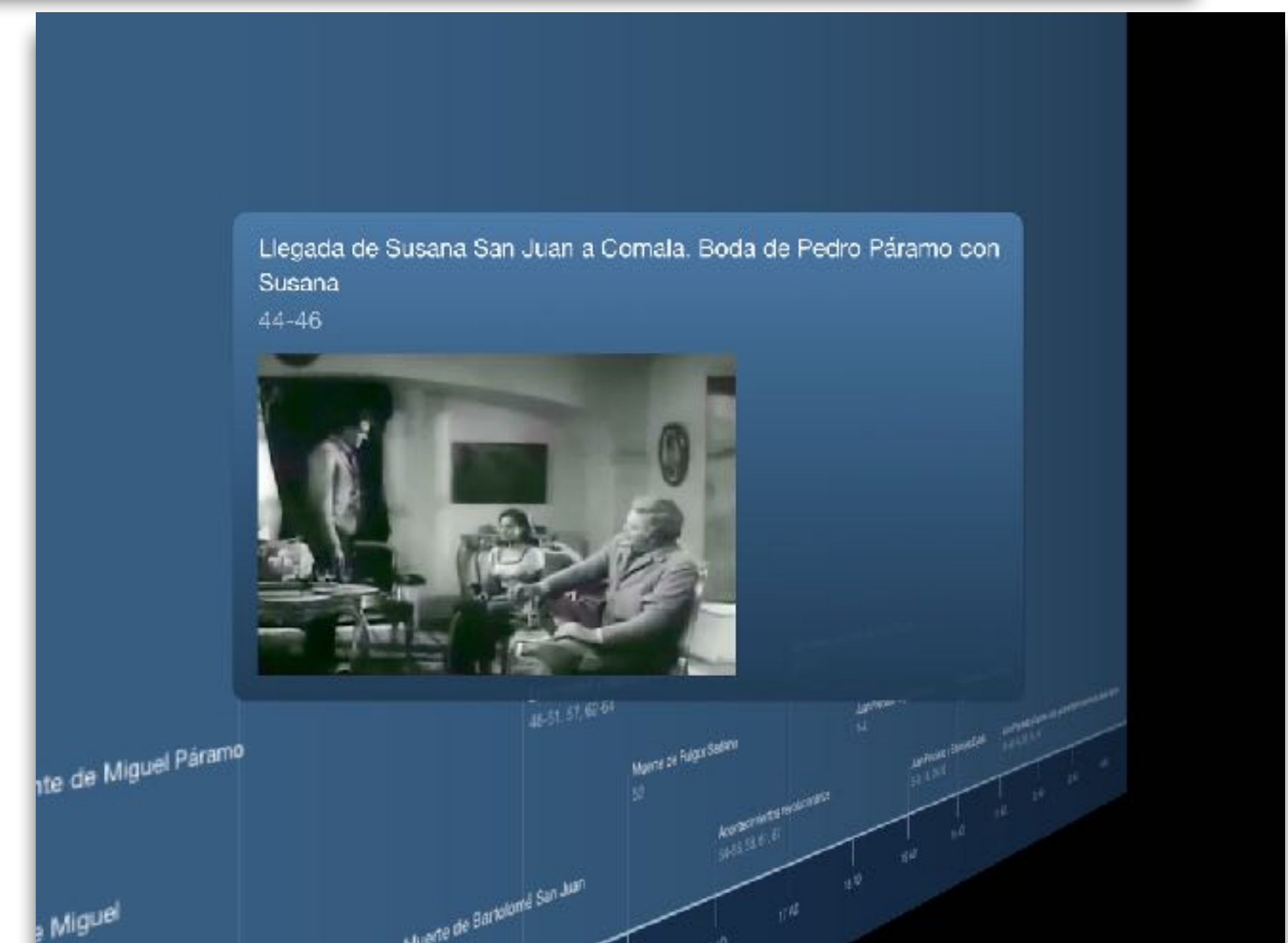
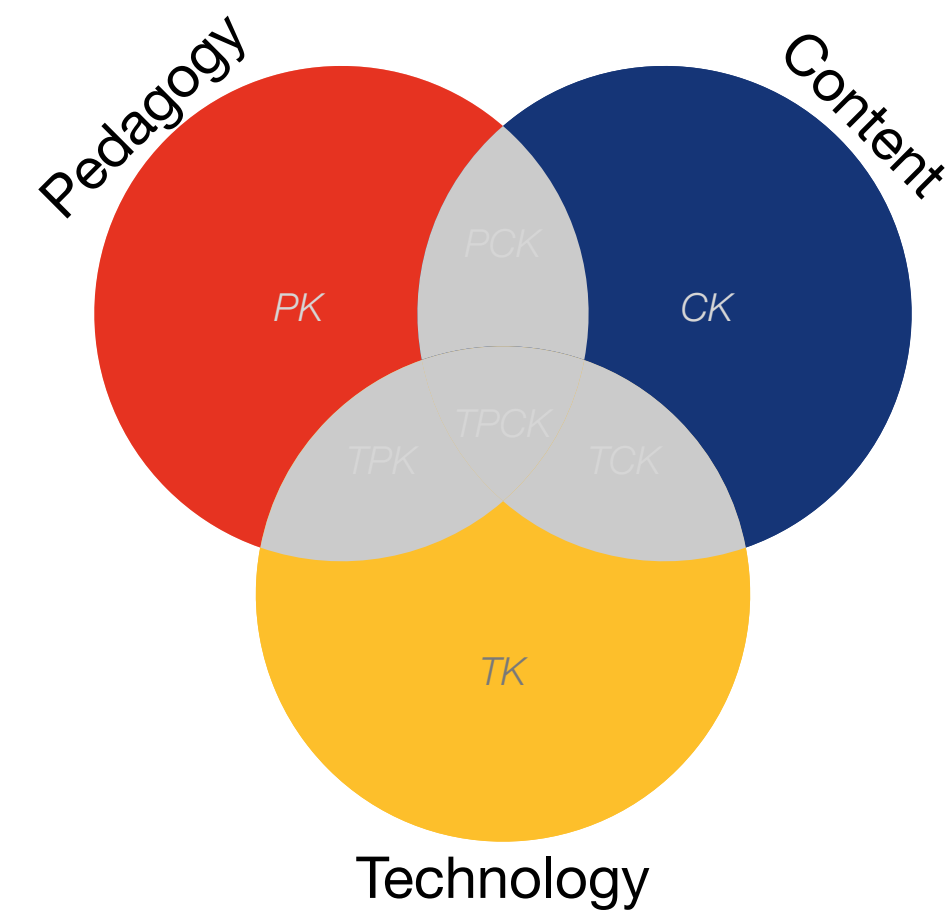
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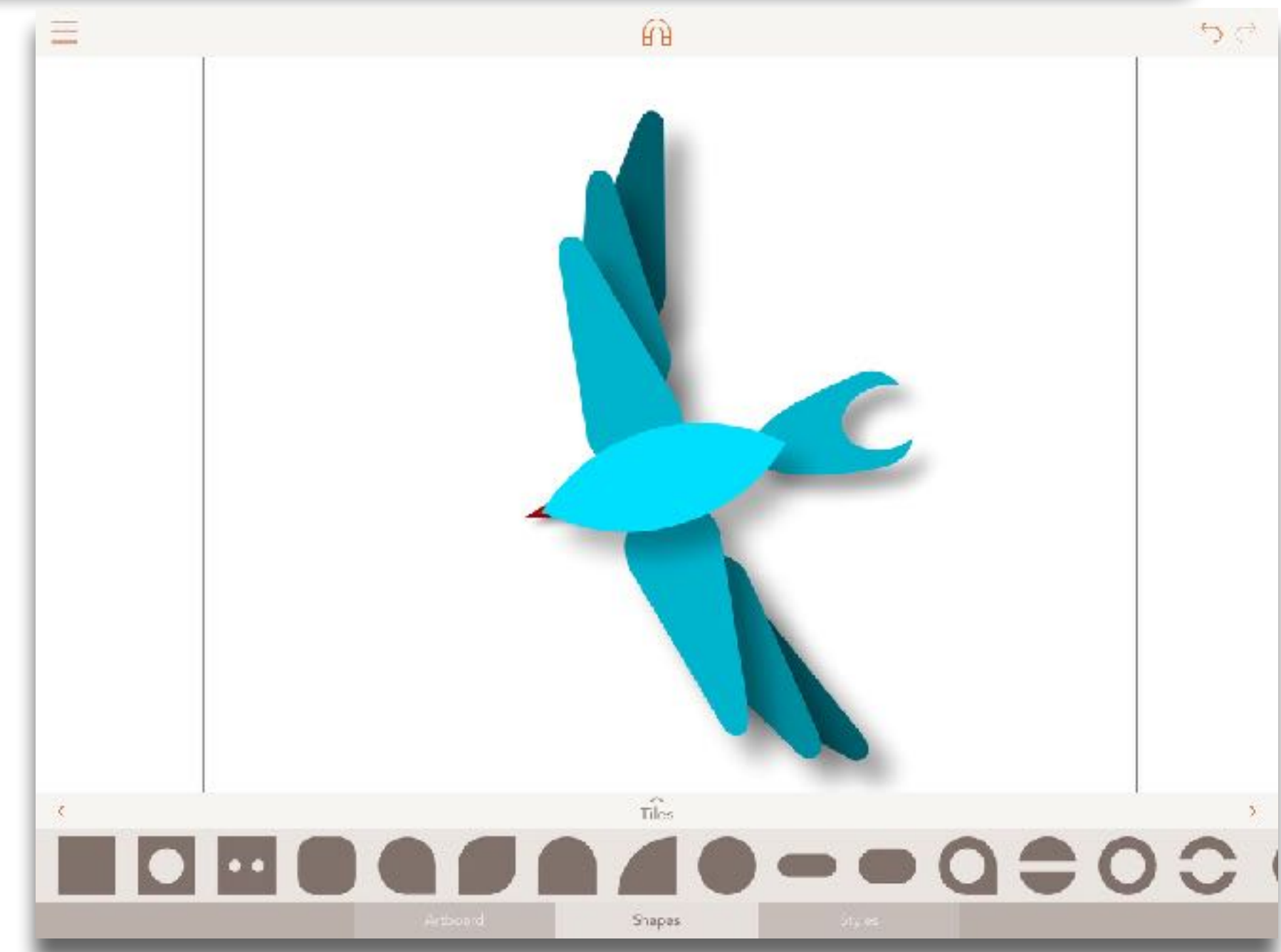
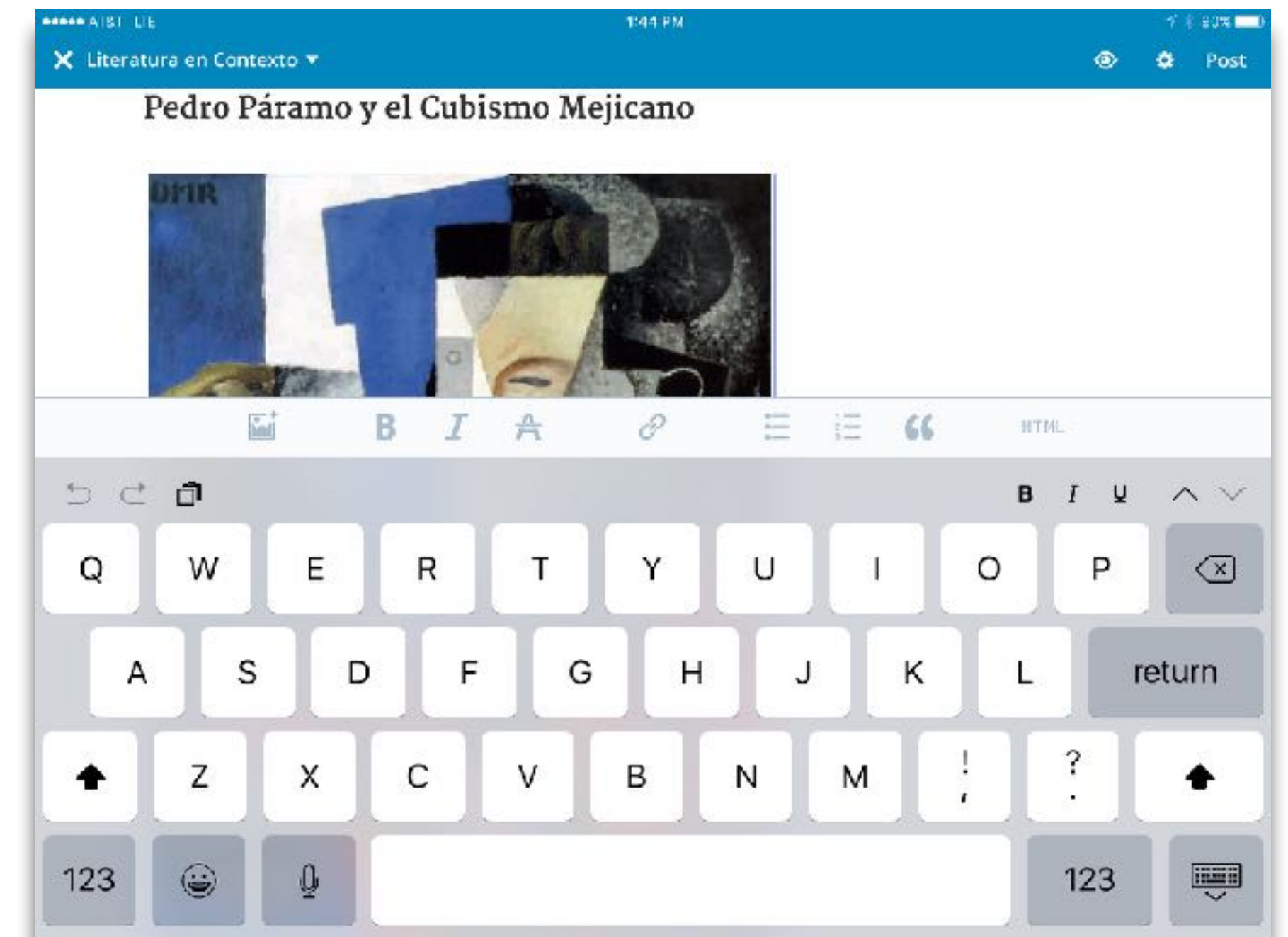
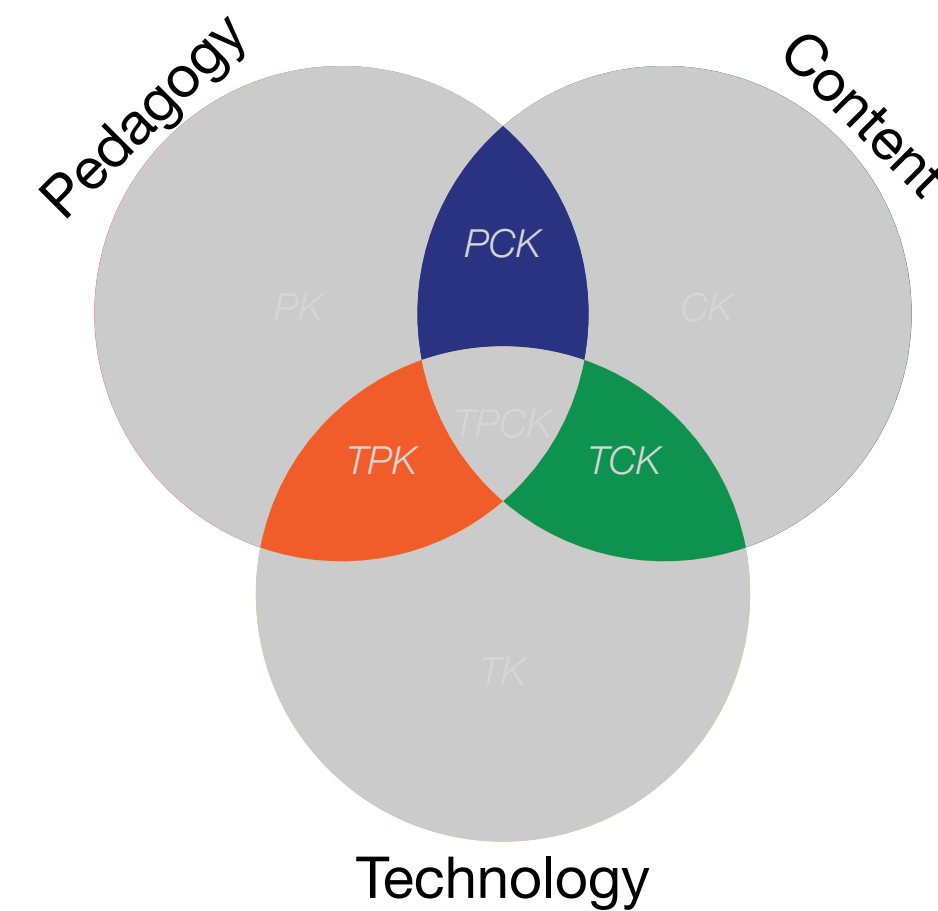
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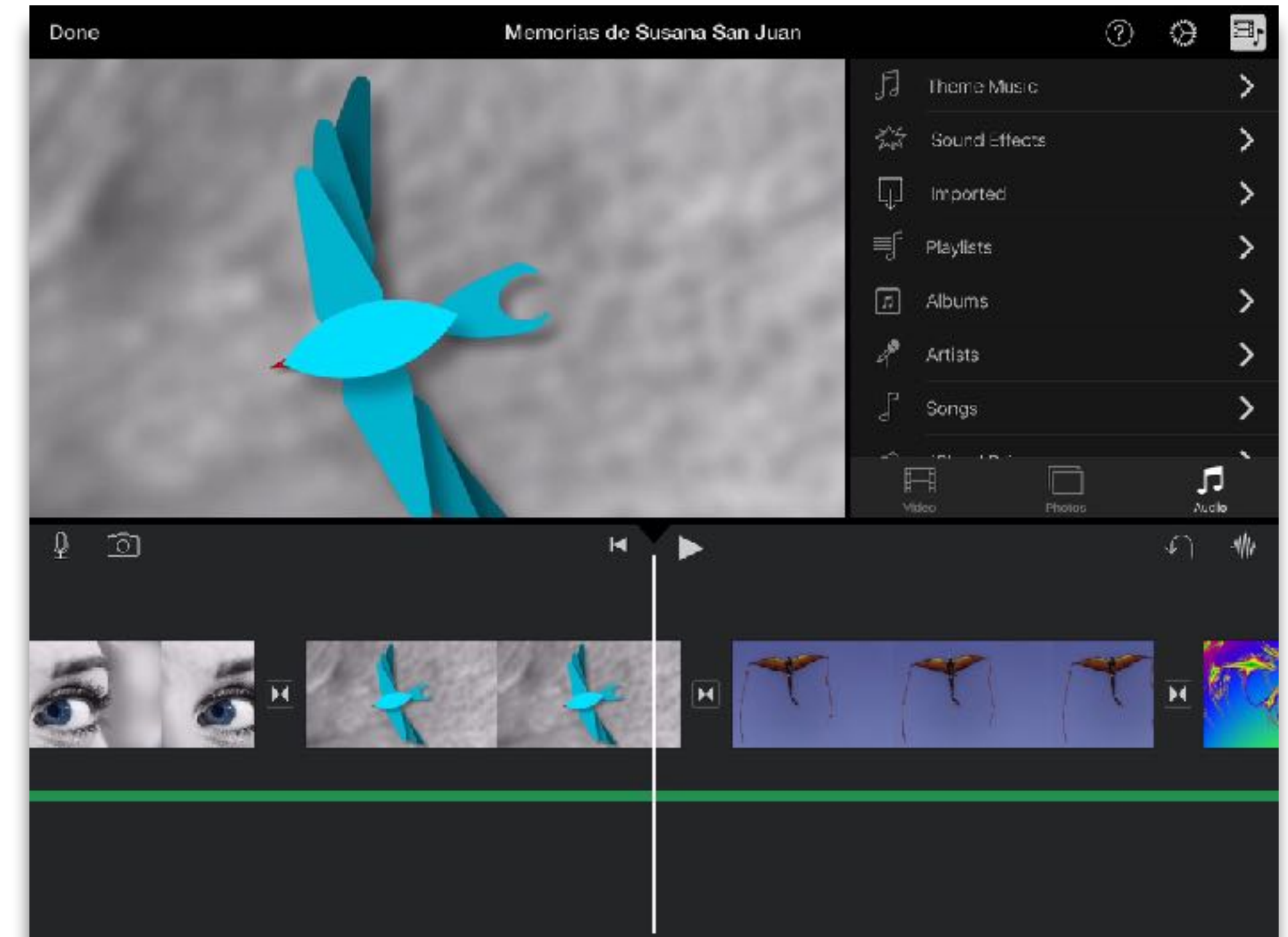
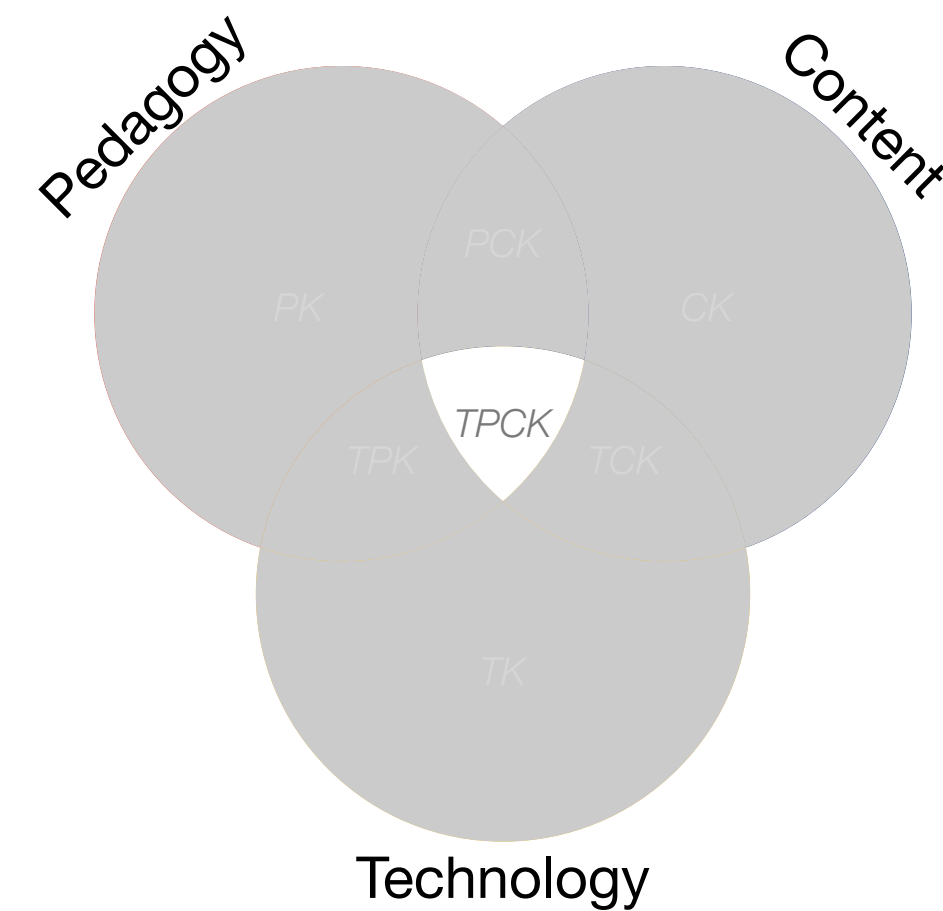
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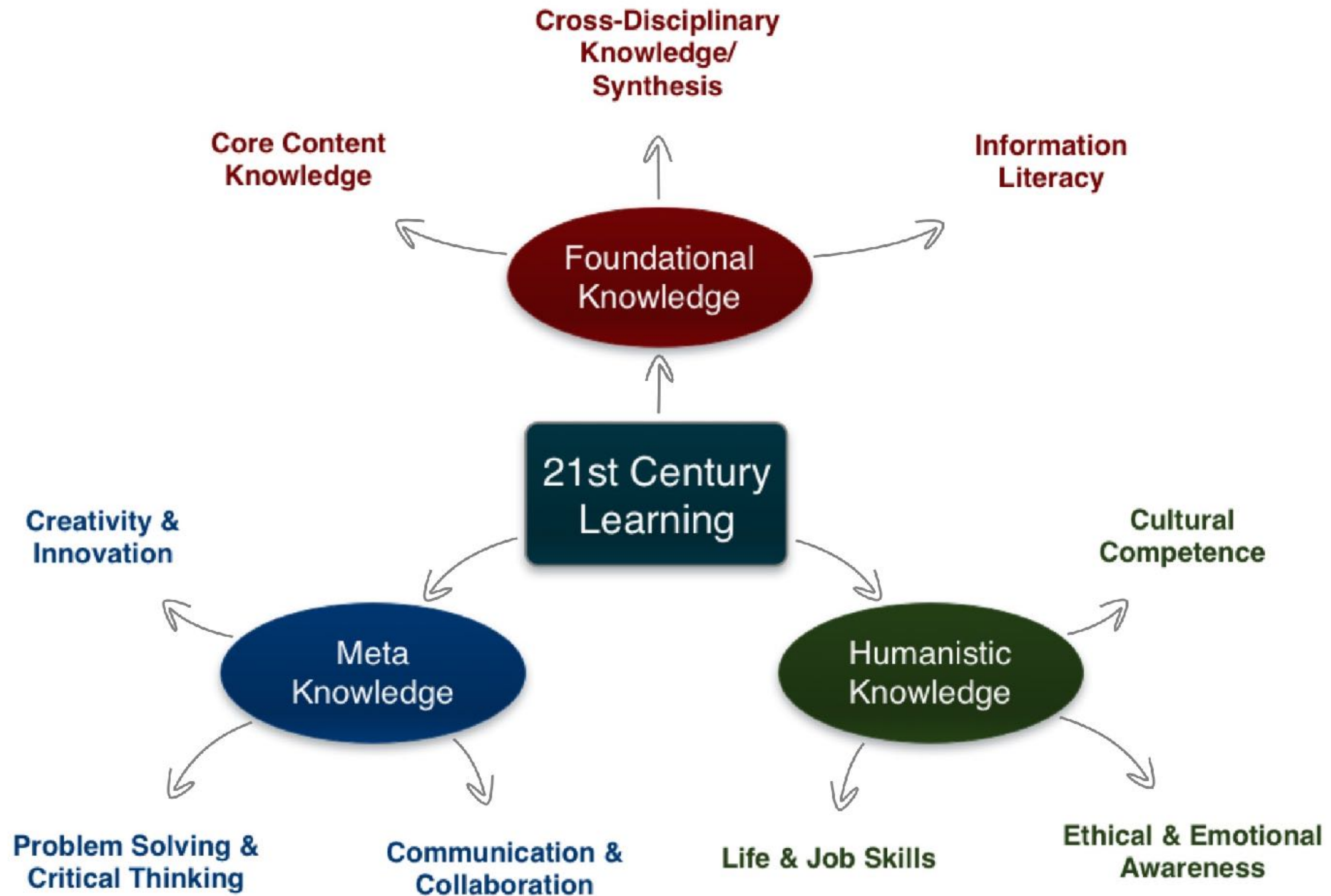
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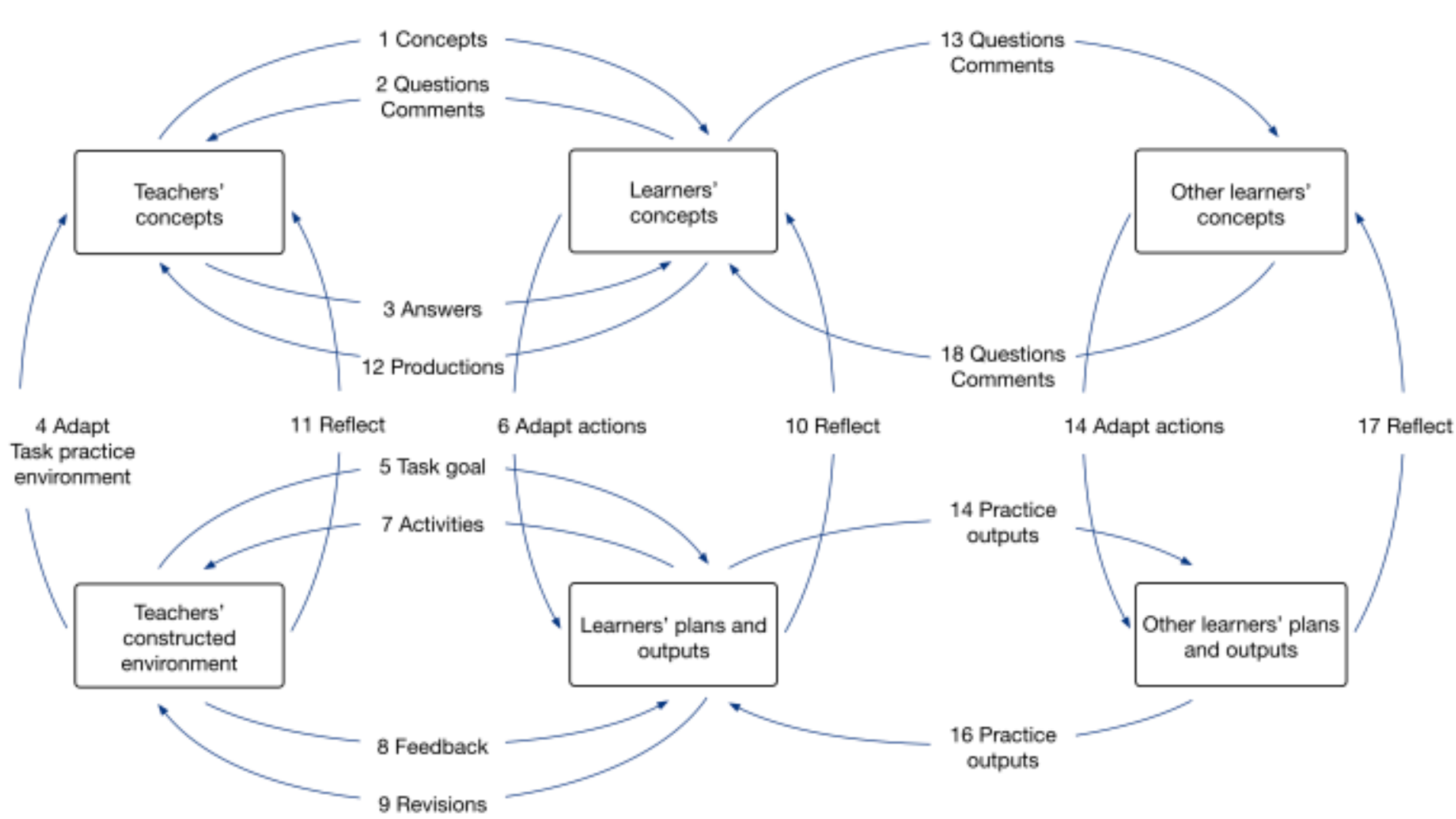
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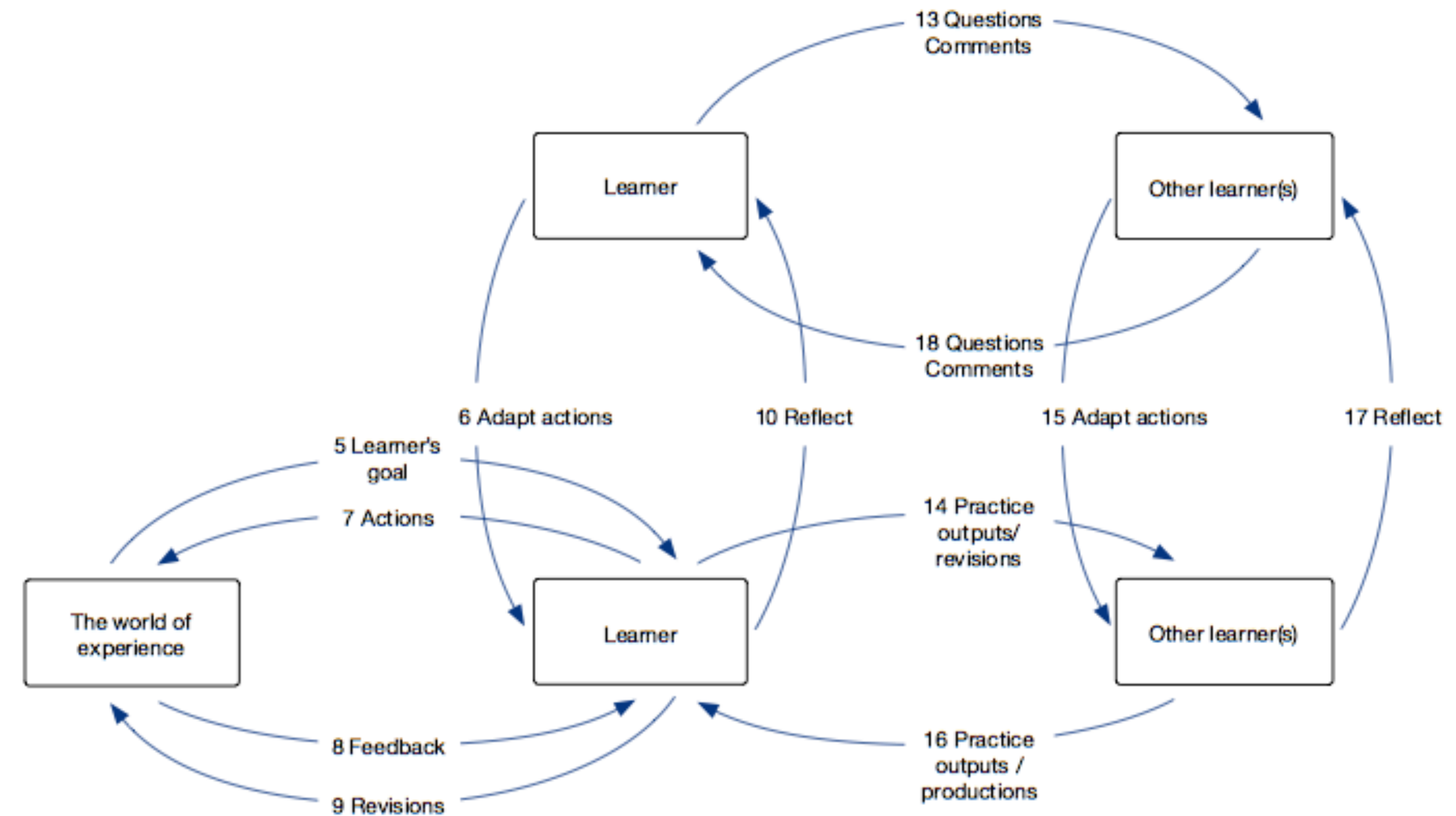


A to M: Refraction

- Pick:
 - A Content Area
 - A 21C Learning Skill
 - A Shared Practice
- Create a SAMR Ladder that looks at a topic in 1. through the lens of 2., focused into actual practice by 3.



Formal Learning

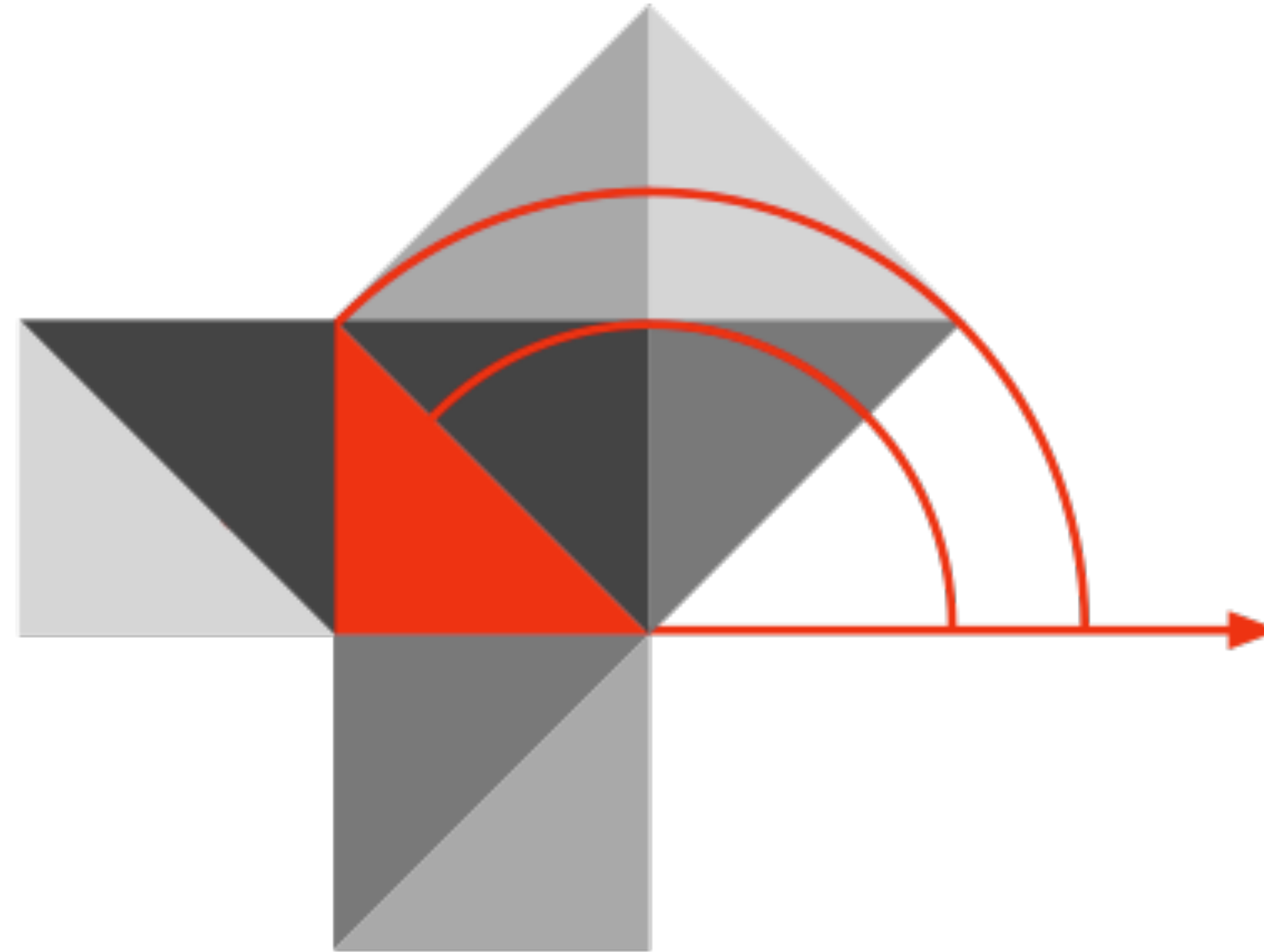


Informal Learning

Communities of Practice and Personal Learning Networks

- Internally: *School as Community of Practice*
 - A **domain** of shared interest, commitment, and competence;
 - A **community** where joint activities, discussions, information sharing, and help processes are focused around and by the domain;
 - A **practice** with a shared repertoire of resources, such as experiences, stories, tools, and problem-solving approaches.
- Externally: *Individual Personal Learning Networks*
 - Loosely structured around a range of tools, individually chosen - no two PLNs are the same;
 - Usually online, but may involve face-to-face components (e.g. meetups);
 - Resources may range from professional websites, to blogs, to Facebook groups, to Twitter feeds;
 - Involvement may range from primarily reading sources, to participating in discussions, to authoring new materials.

Hippasus



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