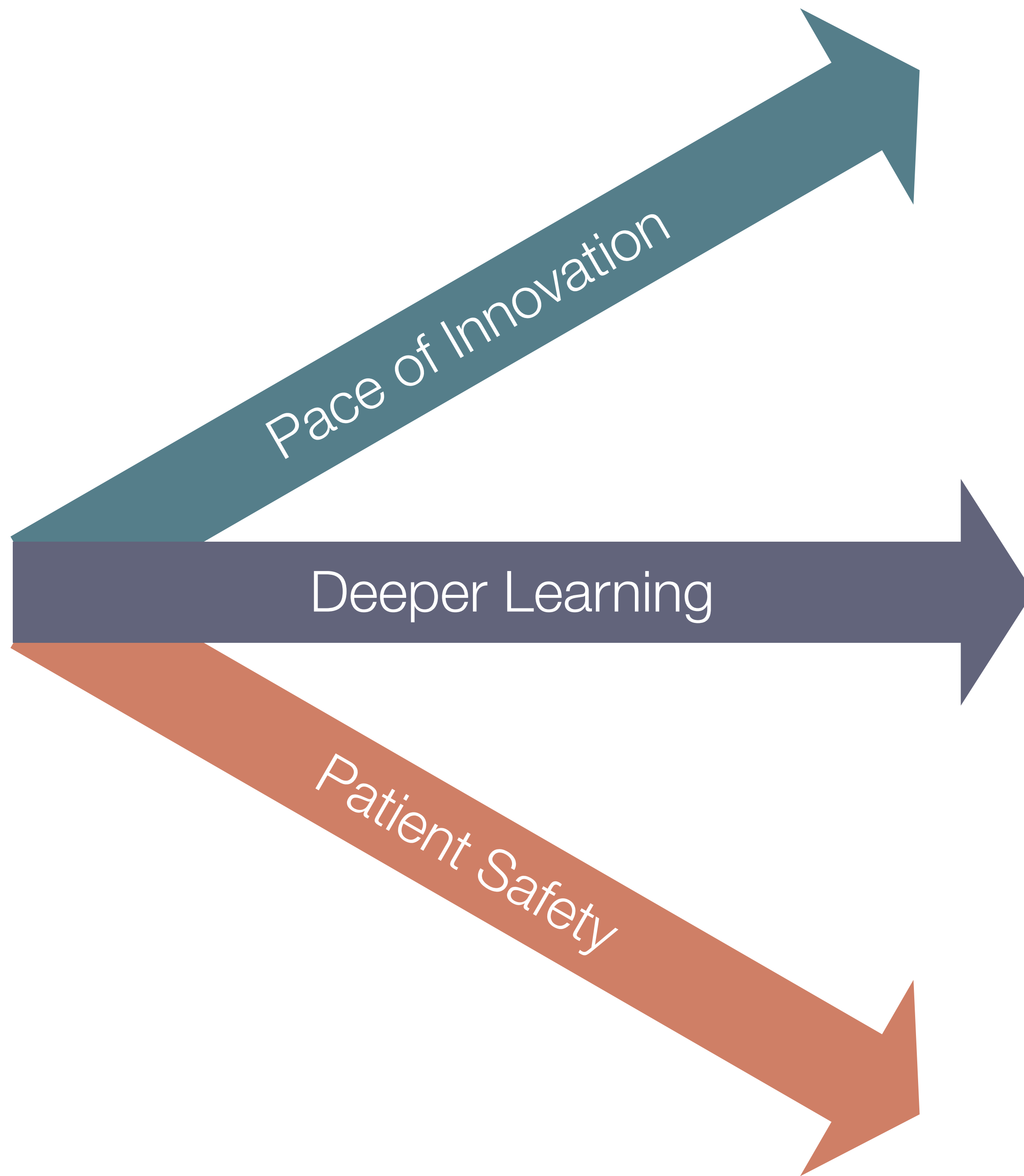


Medical Education Through the Lens of SAMR: An Applied Workshop

Ruben R. Puentedura, Ph.D.



Transformation

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,
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Enhancement

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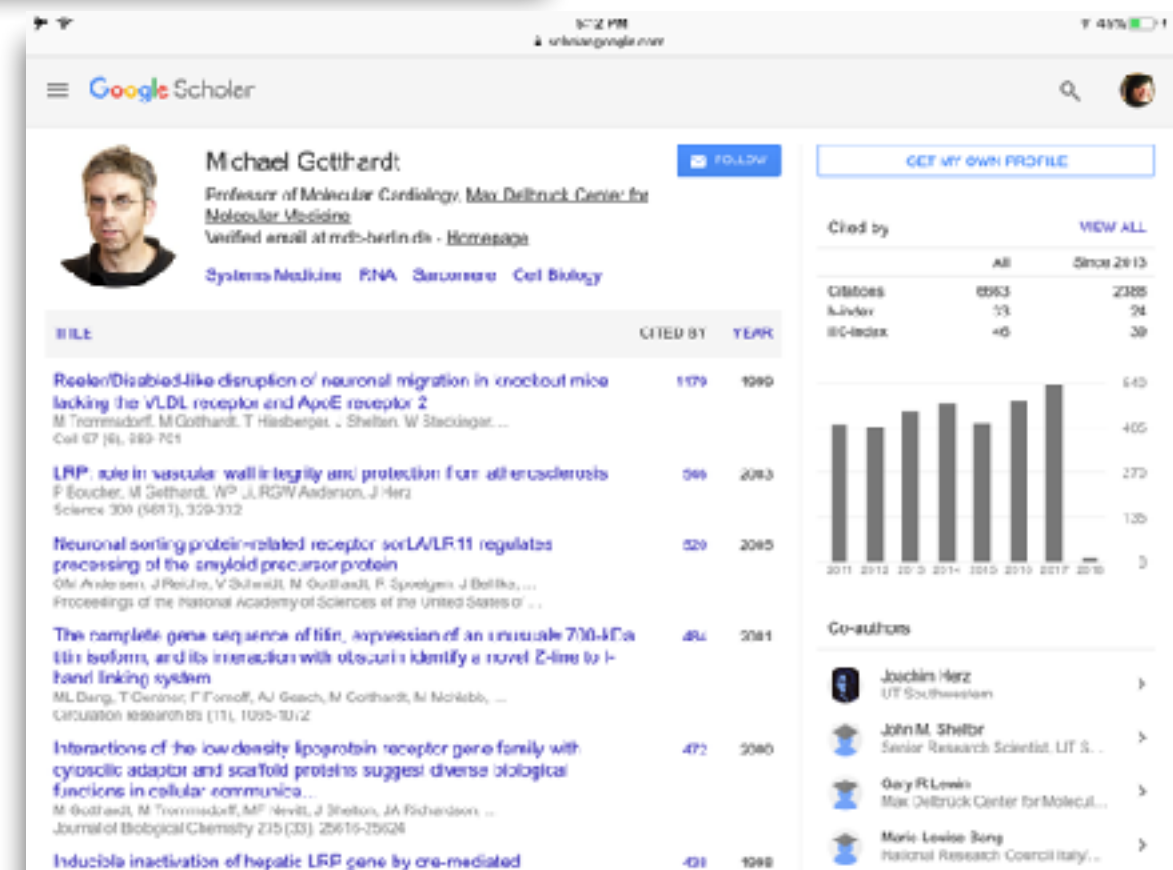
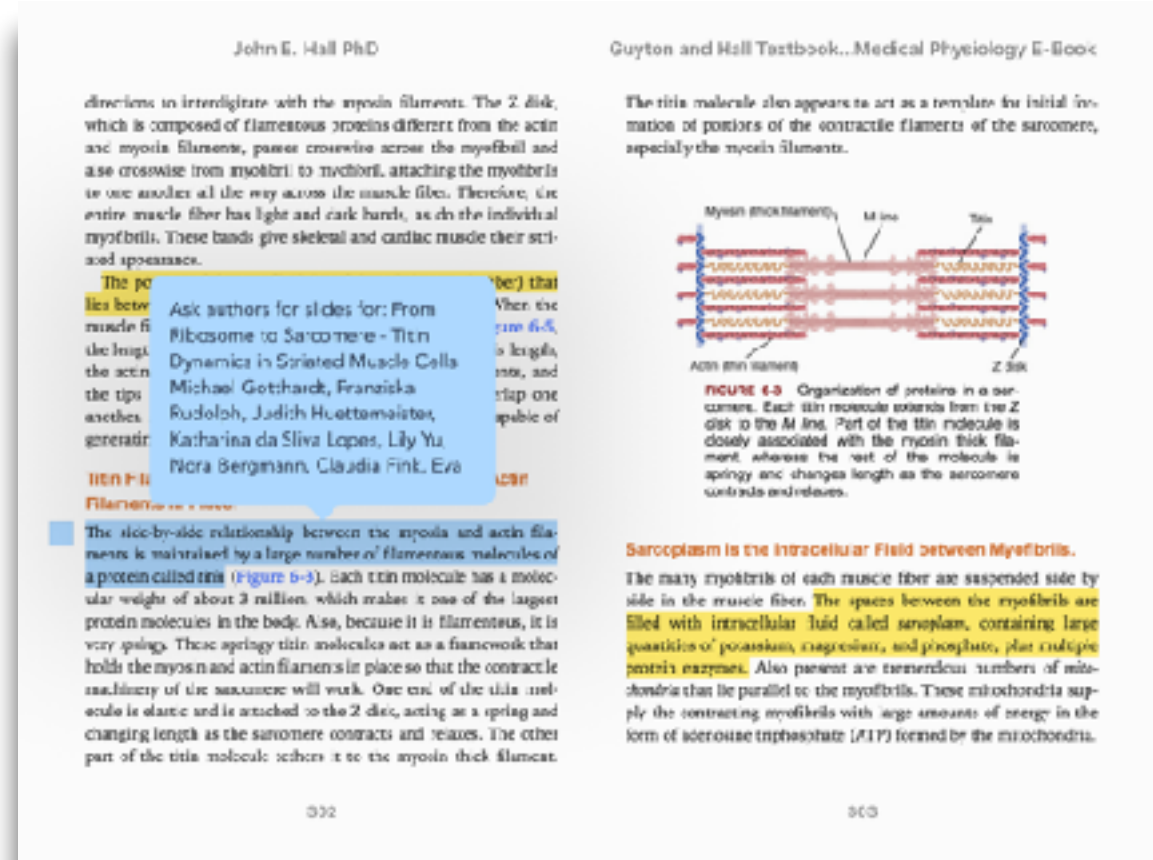
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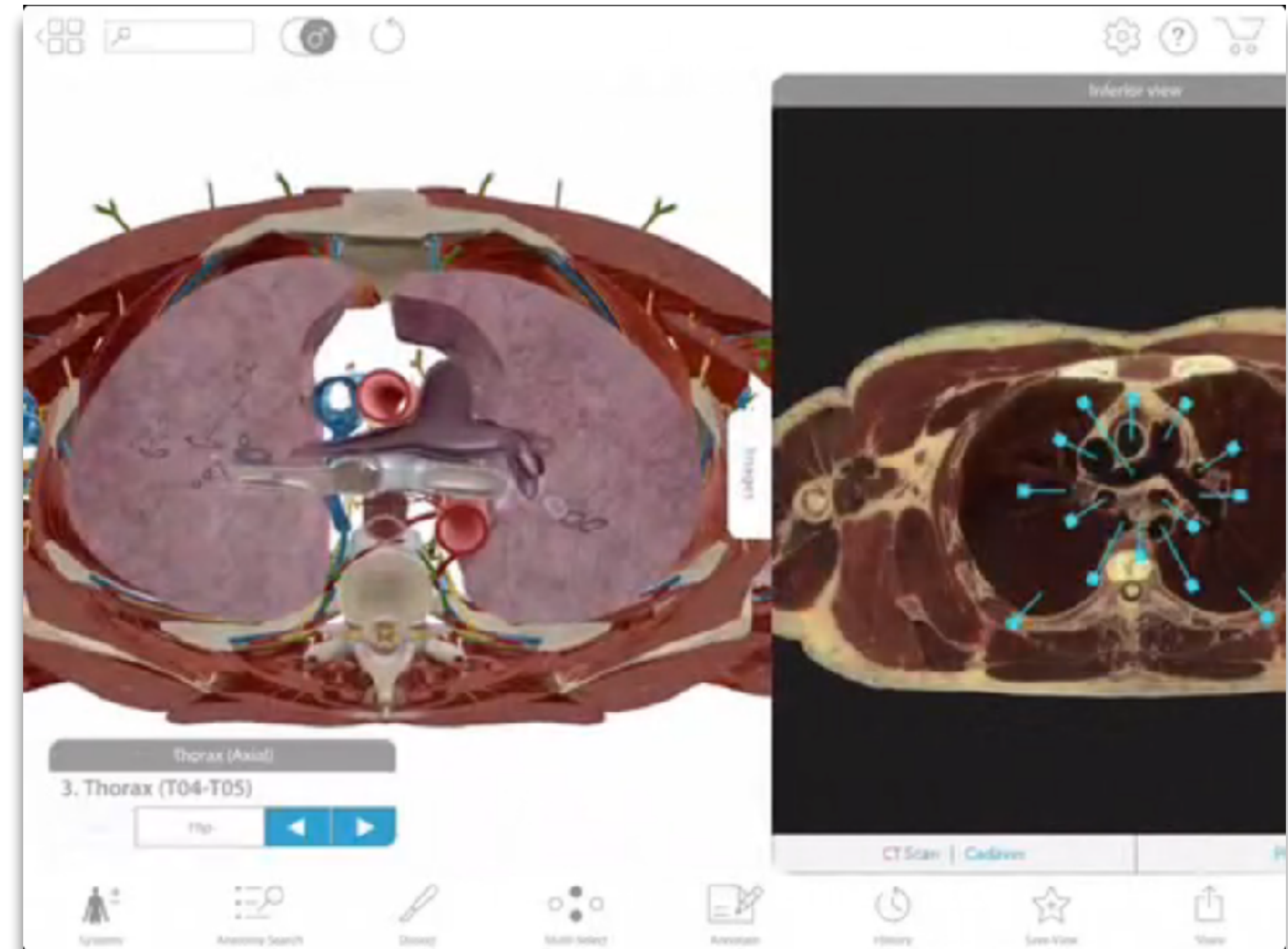
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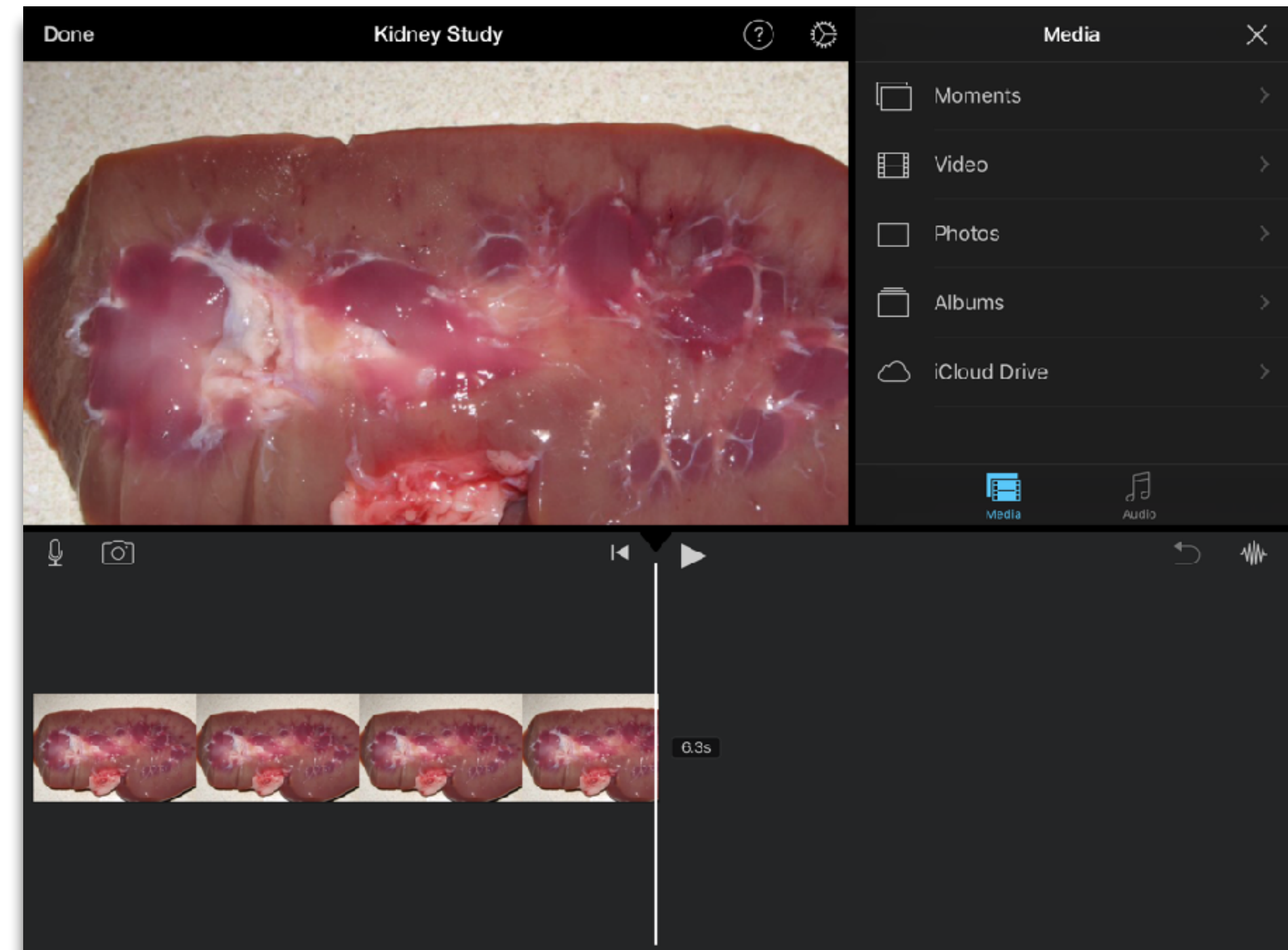
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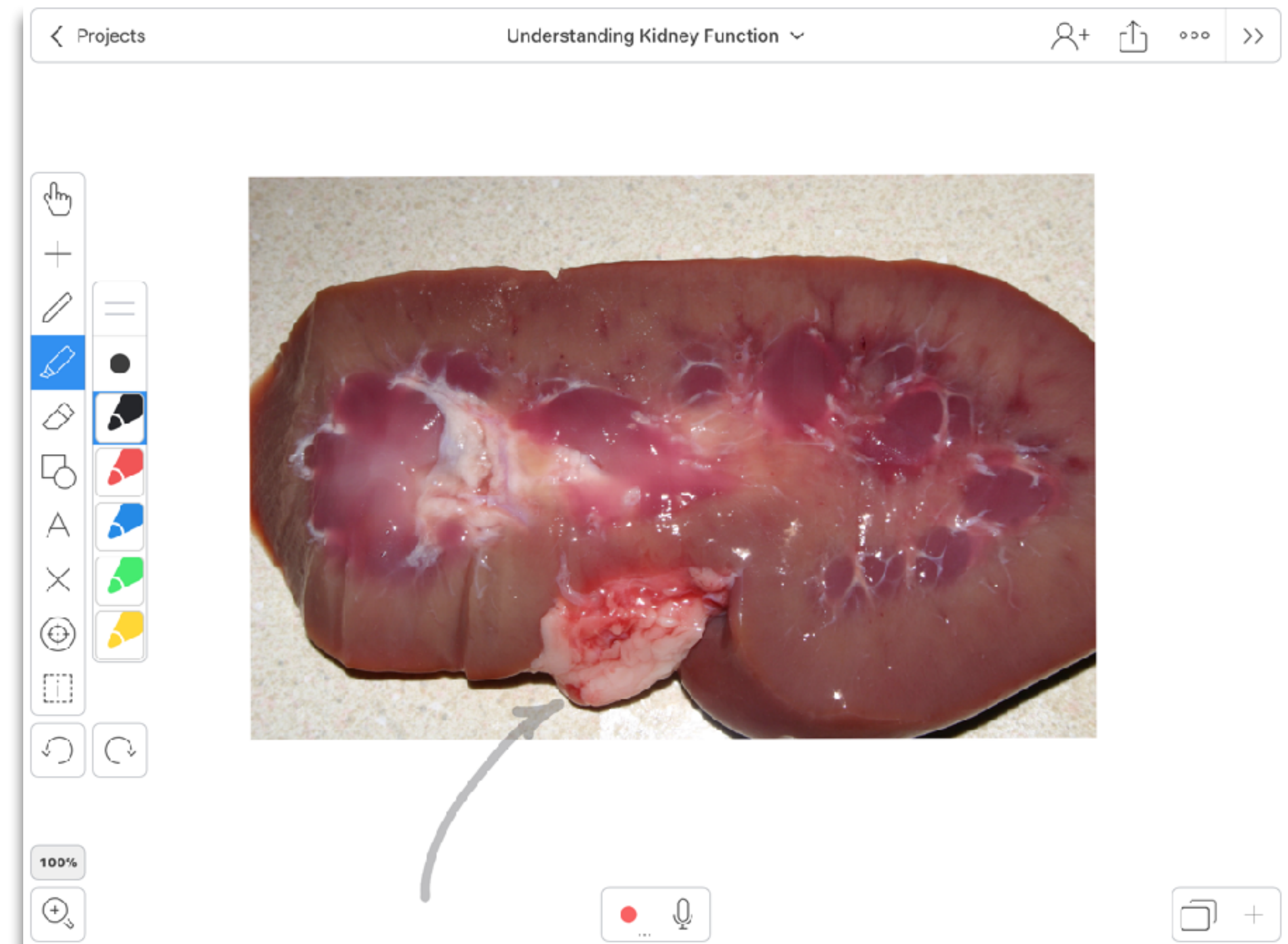
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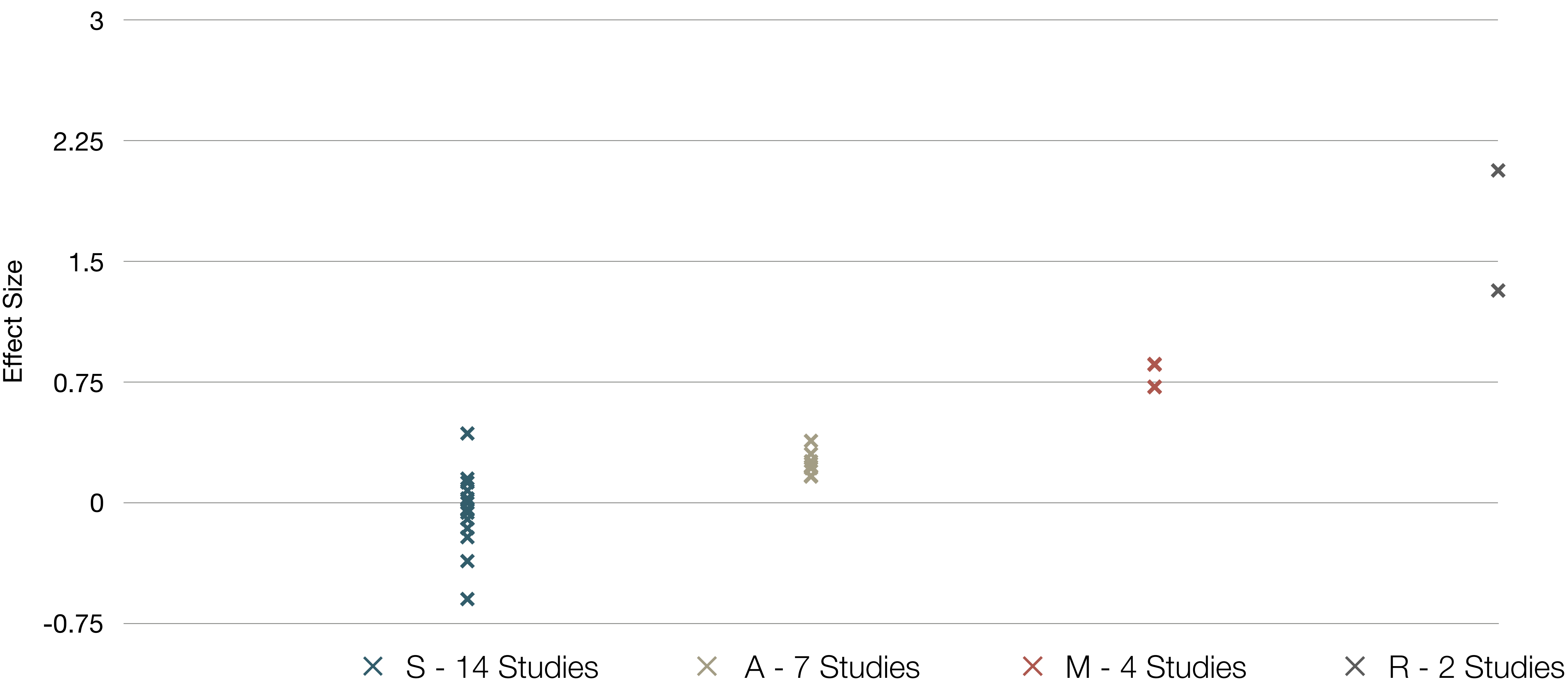
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SAMR and the Use of Tablets in Education



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The screenshot shows the MIT OpenCourseWare website interface. At the top, there's a navigation bar with the MIT OpenCourseWare logo, a rating of five stars, and buttons for 'Save', 'My items', 'Comment', 'Evaluate', 'Tags', and 'Share'. A 'Log In' button is also present. Below this is a dark header with the MIT OpenCourseWare logo and the text 'MASSACHUSETTS INSTITUTE OF TECHNOLOGY'. A 'Subscribe to the OCW Newsletter' button is on the right, along with social media icons for Facebook, Twitter, YouTube, and WordPress. A 'Help | Contact Us' link is also visible. The main navigation bar includes a home icon, 'FIND COURSES', 'For Educators', 'Give Now', and 'About'. A search bar with a magnifying glass icon and an 'Advanced Search' link is on the right. The main content area is for the 'Principles of Pharmacology' course. It features a breadcrumb trail: 'Home » Courses » Health Sciences and Technology » Principles of Pharmacology'. The course title 'Principles of Pharmacology' is prominently displayed. To the left is a sidebar with a 'COURSE HOME' link (highlighted with a red arrow) and other links: 'SYLLABUS', 'CALENDAR', 'READINGS', 'LECTURE NOTES', 'ASSIGNMENTS', 'EXAMS', 'STUDY MATERIALS', and 'DOWNLOAD COURSE MATERIALS'. The main content area includes a large image of chemistry glassware (bottles and flasks) with the caption 'Chemotherapy drugs in vials and an IV bottle. (Photo by Bill Branson. Courtesy of National Cancer Institute Visuals Online.)'. To the right of the image, there's a section for 'Instructor(s)' listing Dr. Carl Rosow, Dr. David Stancaert, and Prof. Gary Strichartz. Below this is the 'MIT Course Number' HST.151 and 'As Taught In' Spring 2005. The 'Level' is listed as 'Graduate'. A 'CITE THIS COURSE' button is also present. At the bottom, there's a 'Course Features' section with links to 'Selected lecture notes', 'Assignments: problem sets with solutions', 'Assignments: presentations with examples', 'Assignments: written (no examples)', and 'Exams and solutions'. A 'Course Description' section is also visible.

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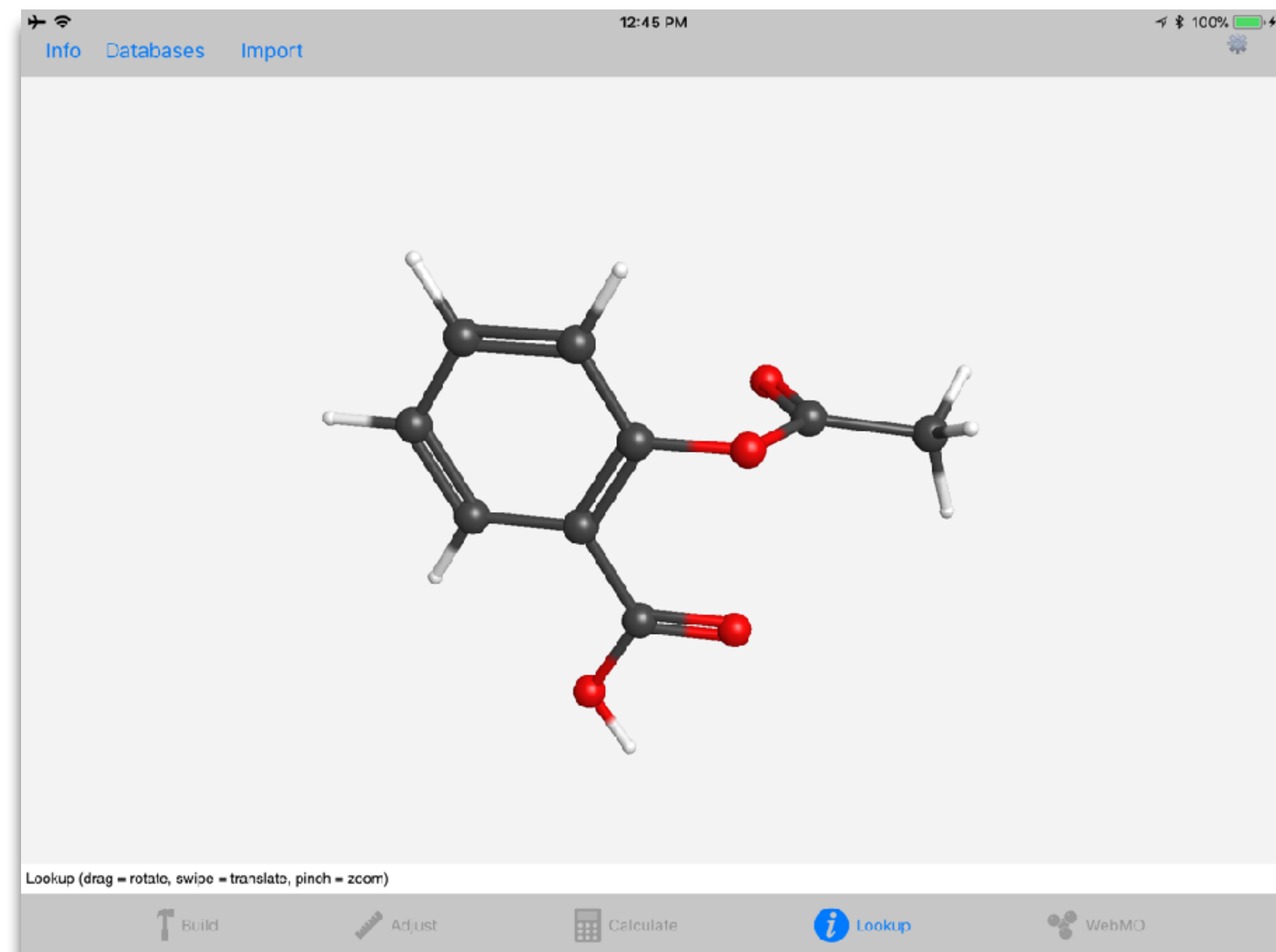
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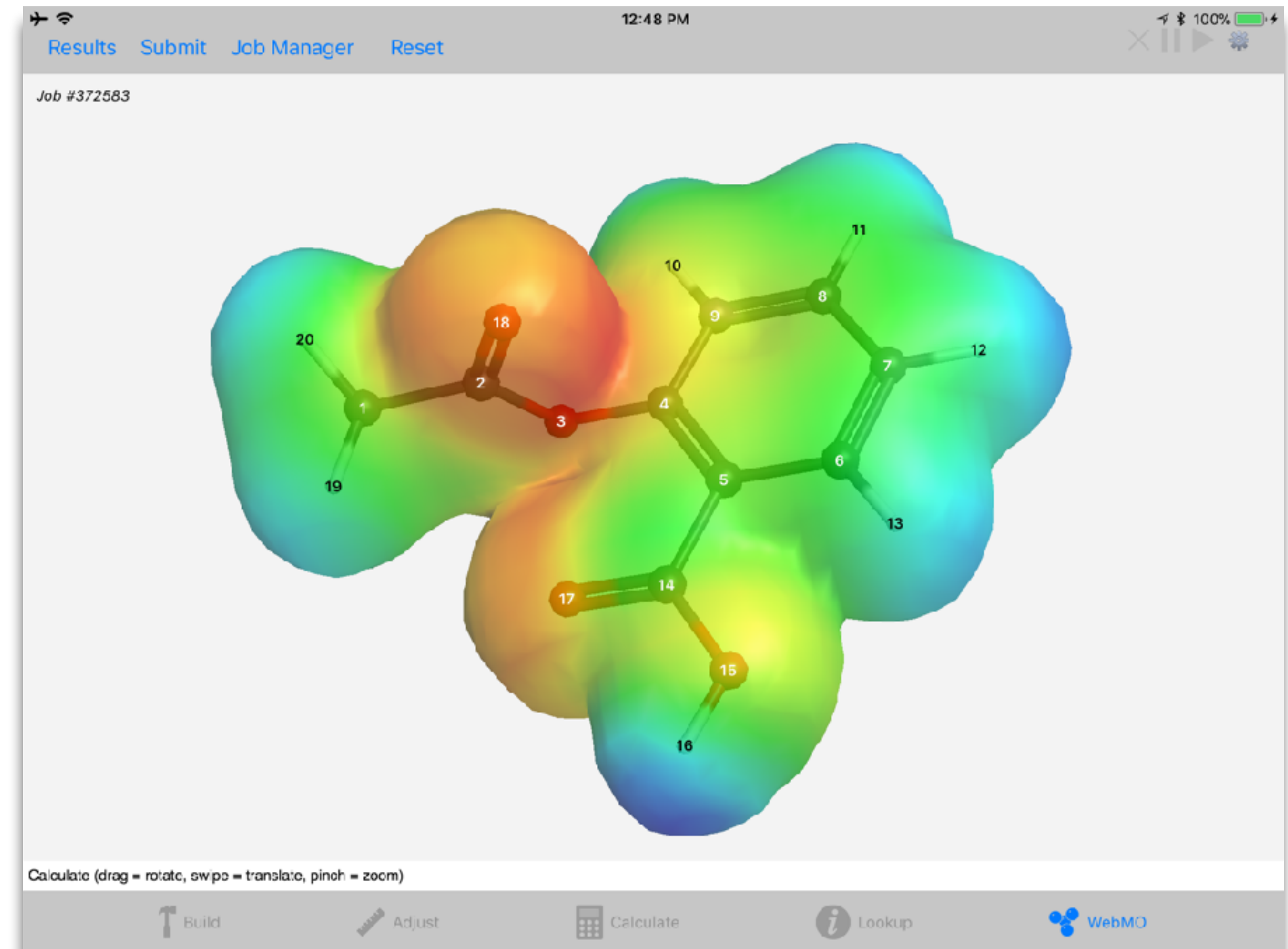
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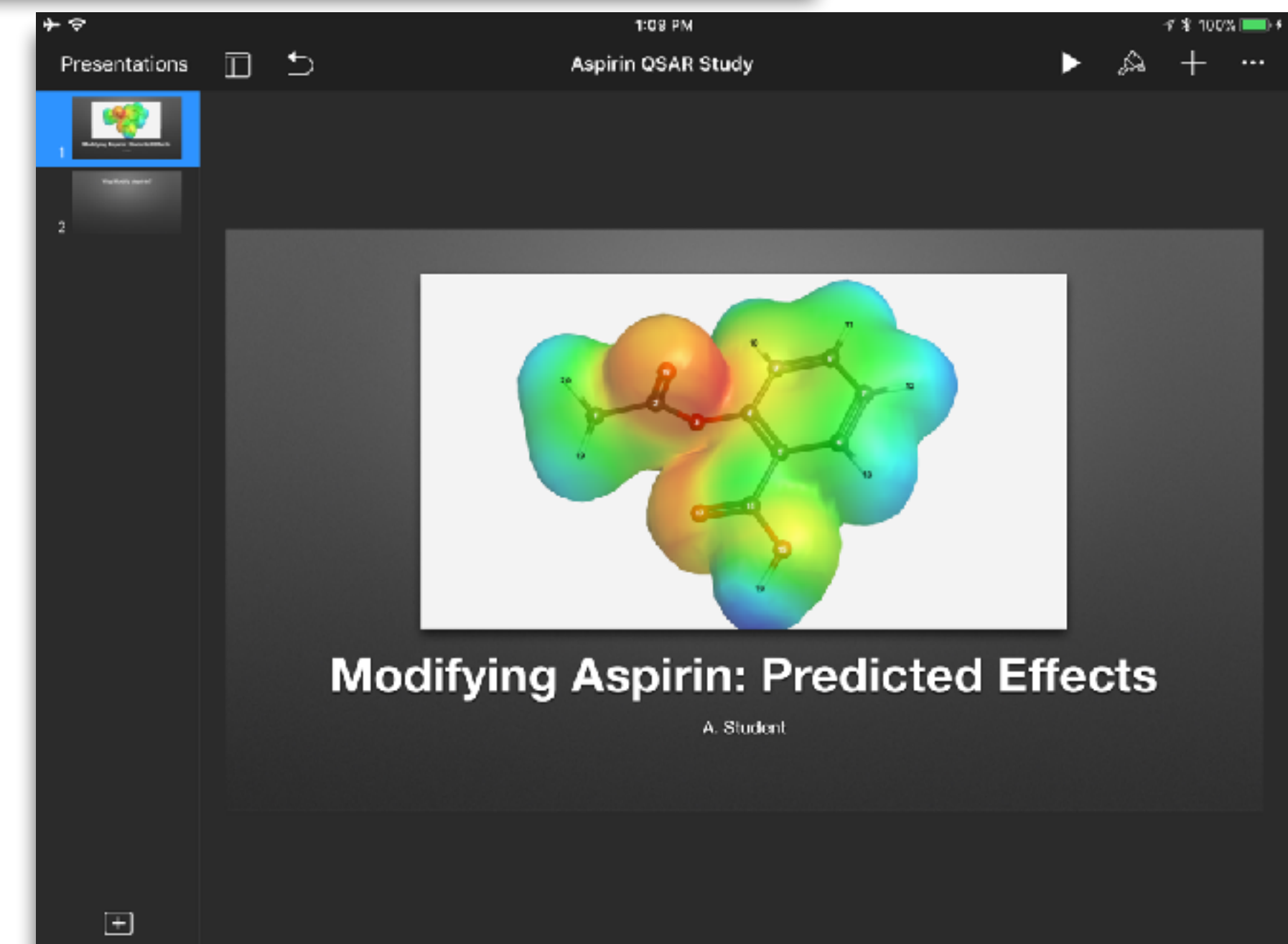
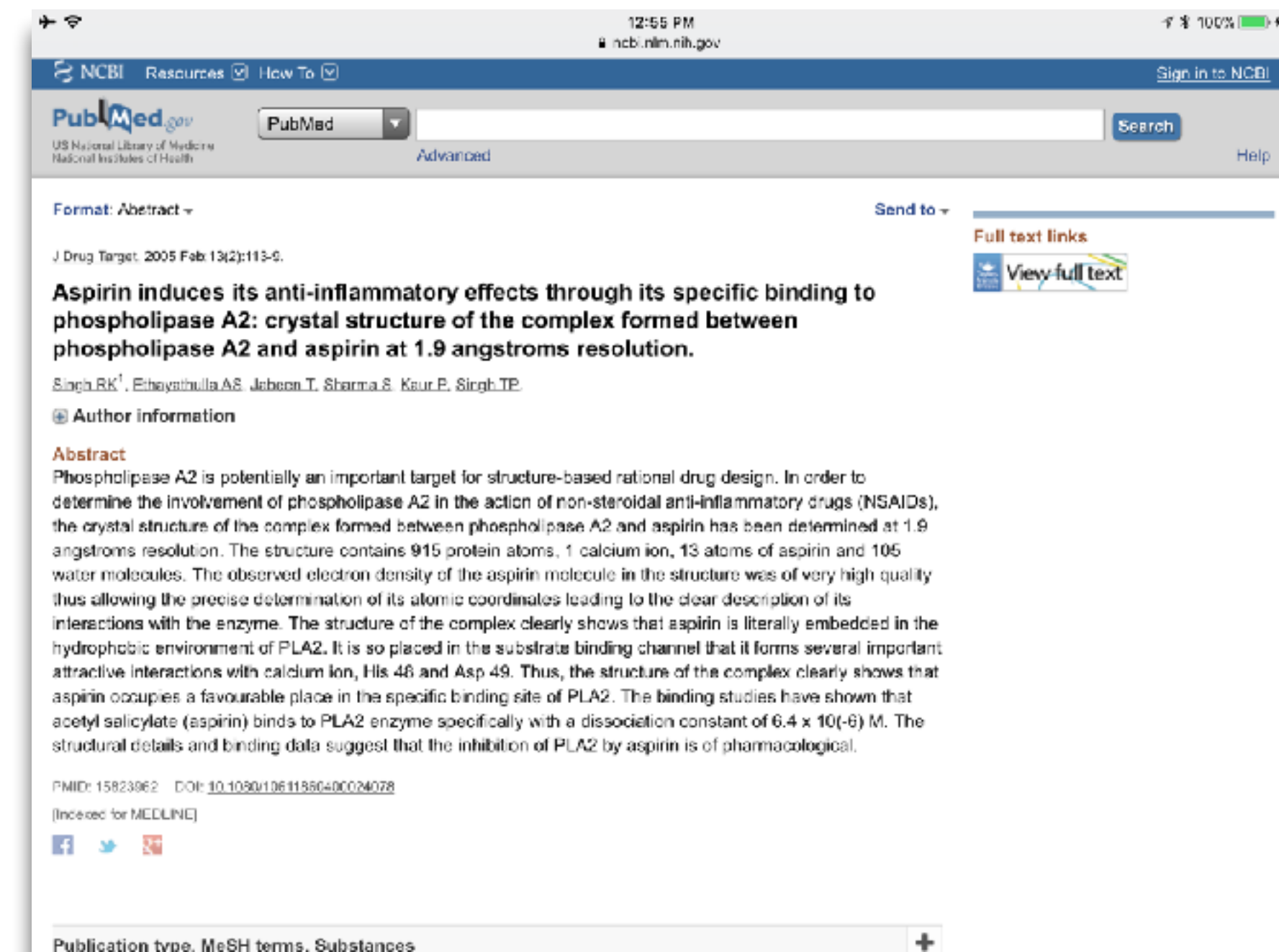
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Social	Mobility	Visualization	Storytelling	Gaming
200,000 years	70,000 years	40,000 years	17,000 years	8,000 years
				

Bookmarks



RSS Feeds

Discussions



Microblogging

Blogging

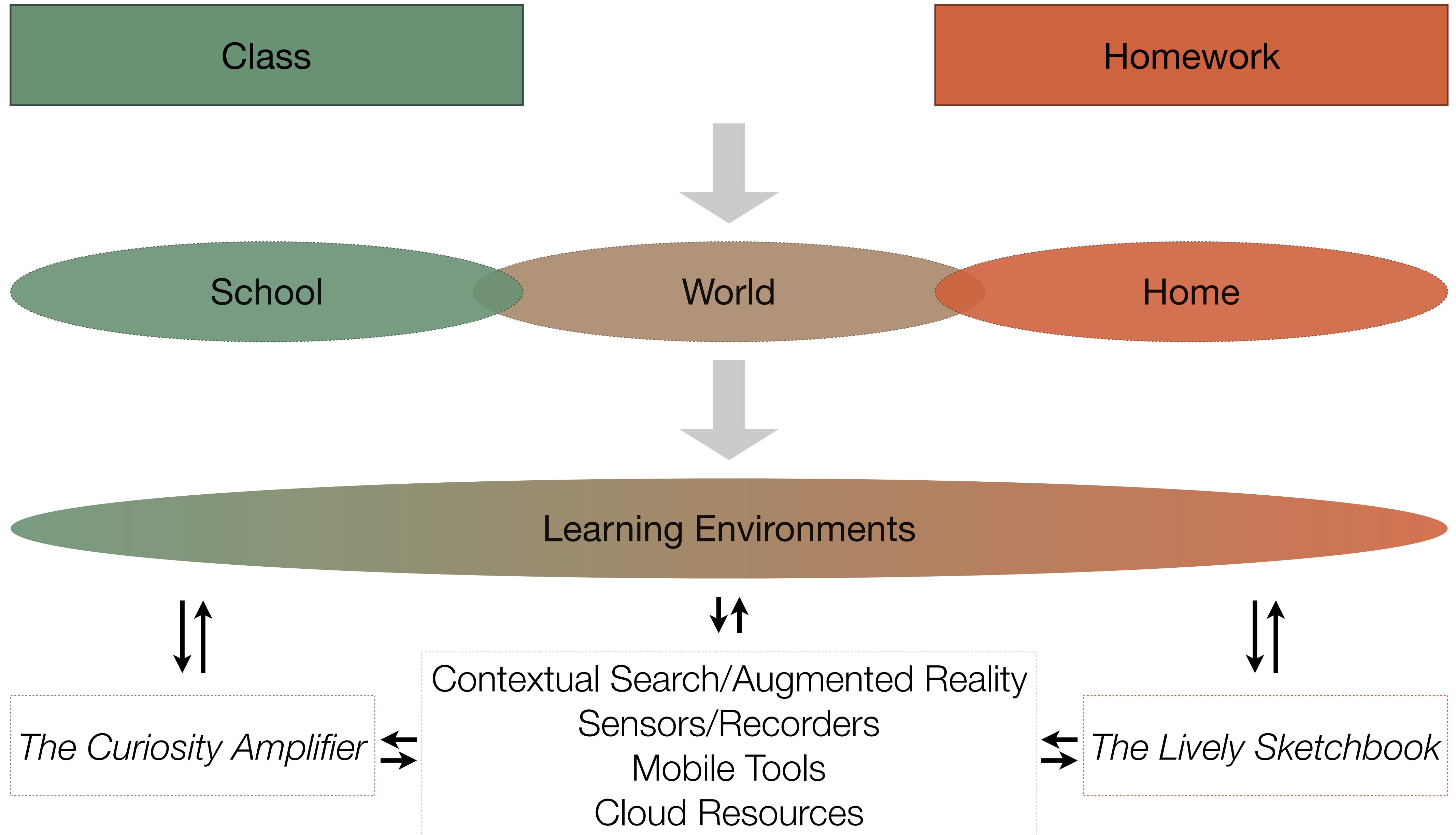


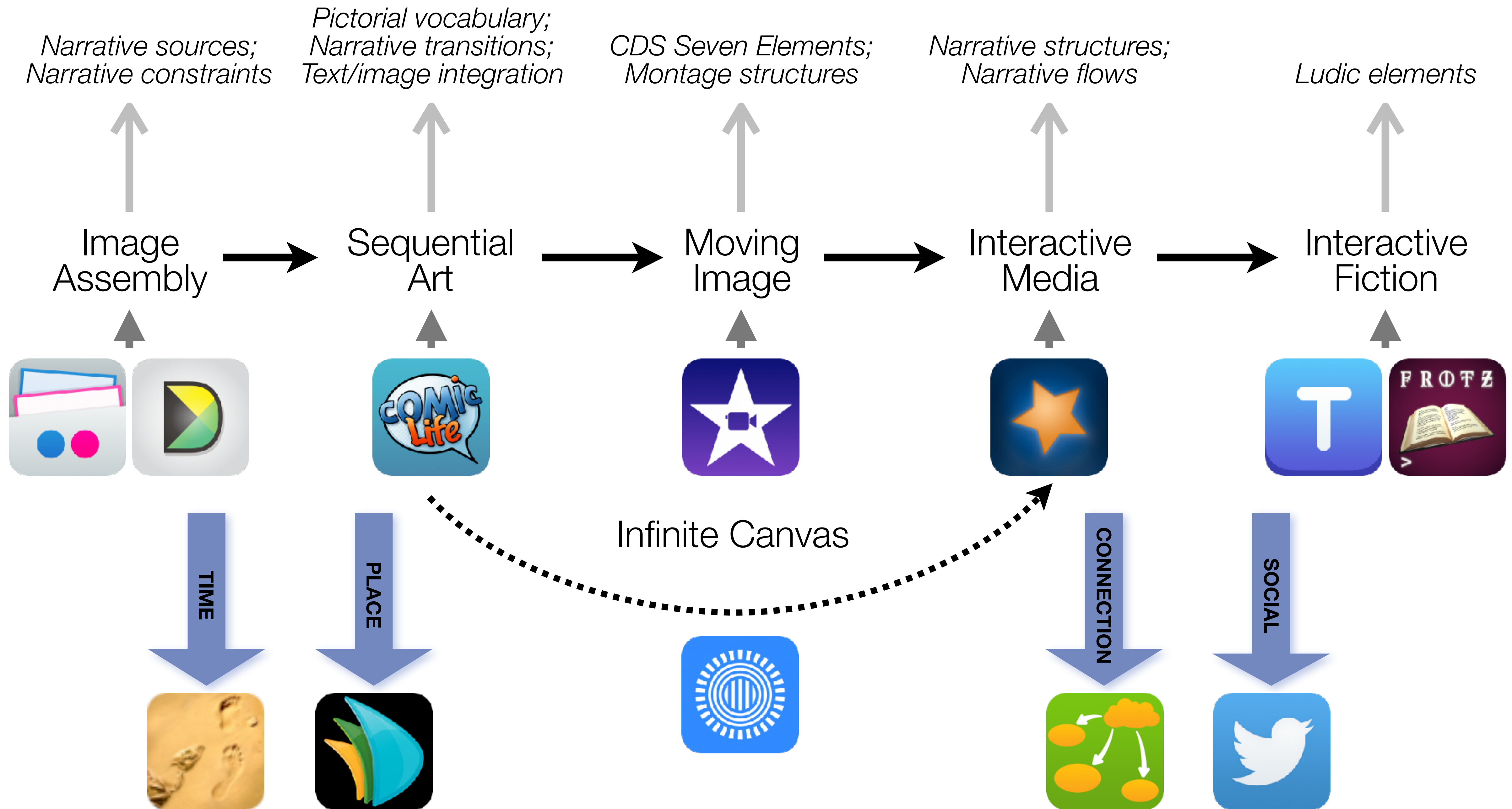
Wikis

Telepresence



File Sharing





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

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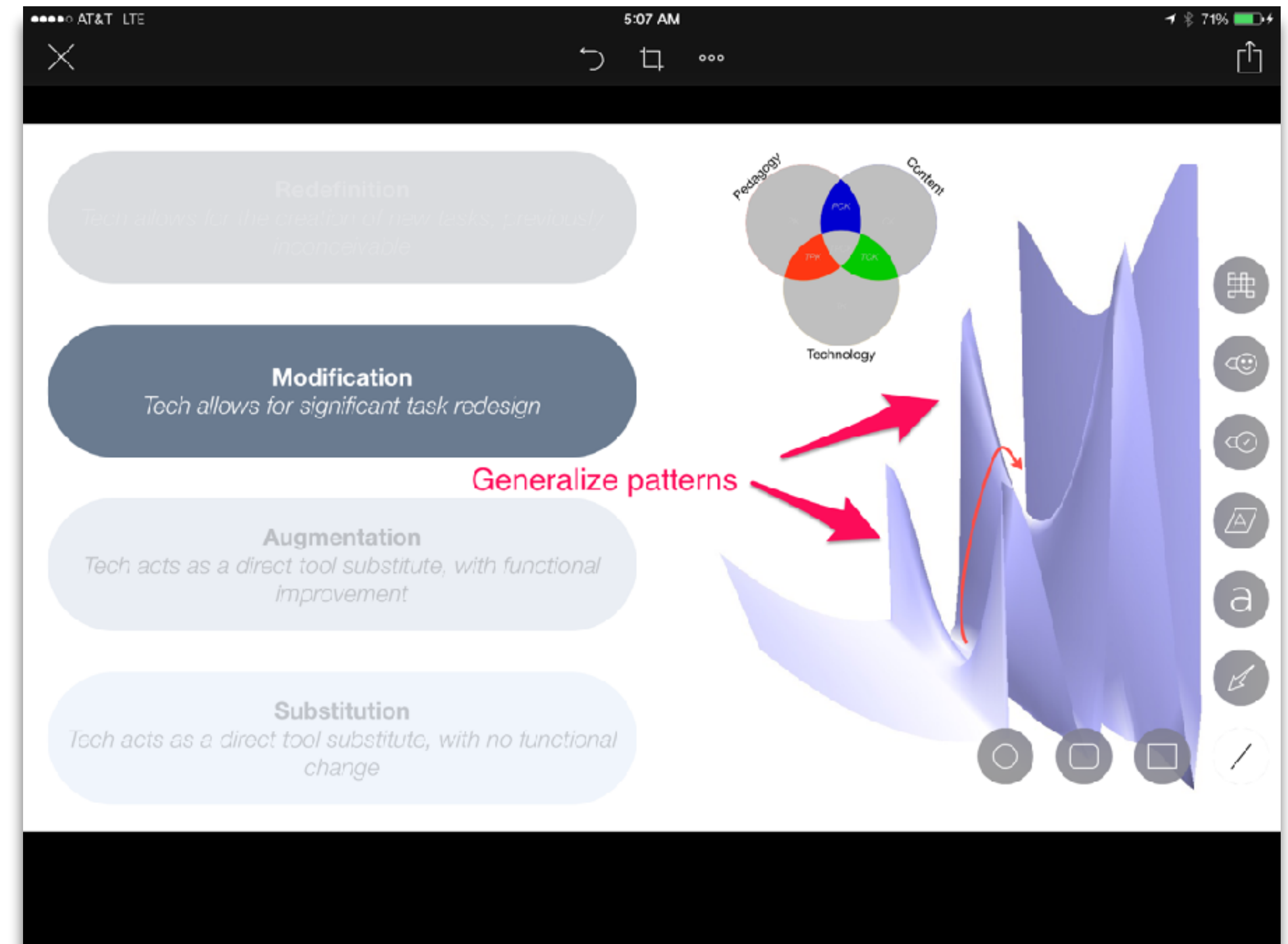
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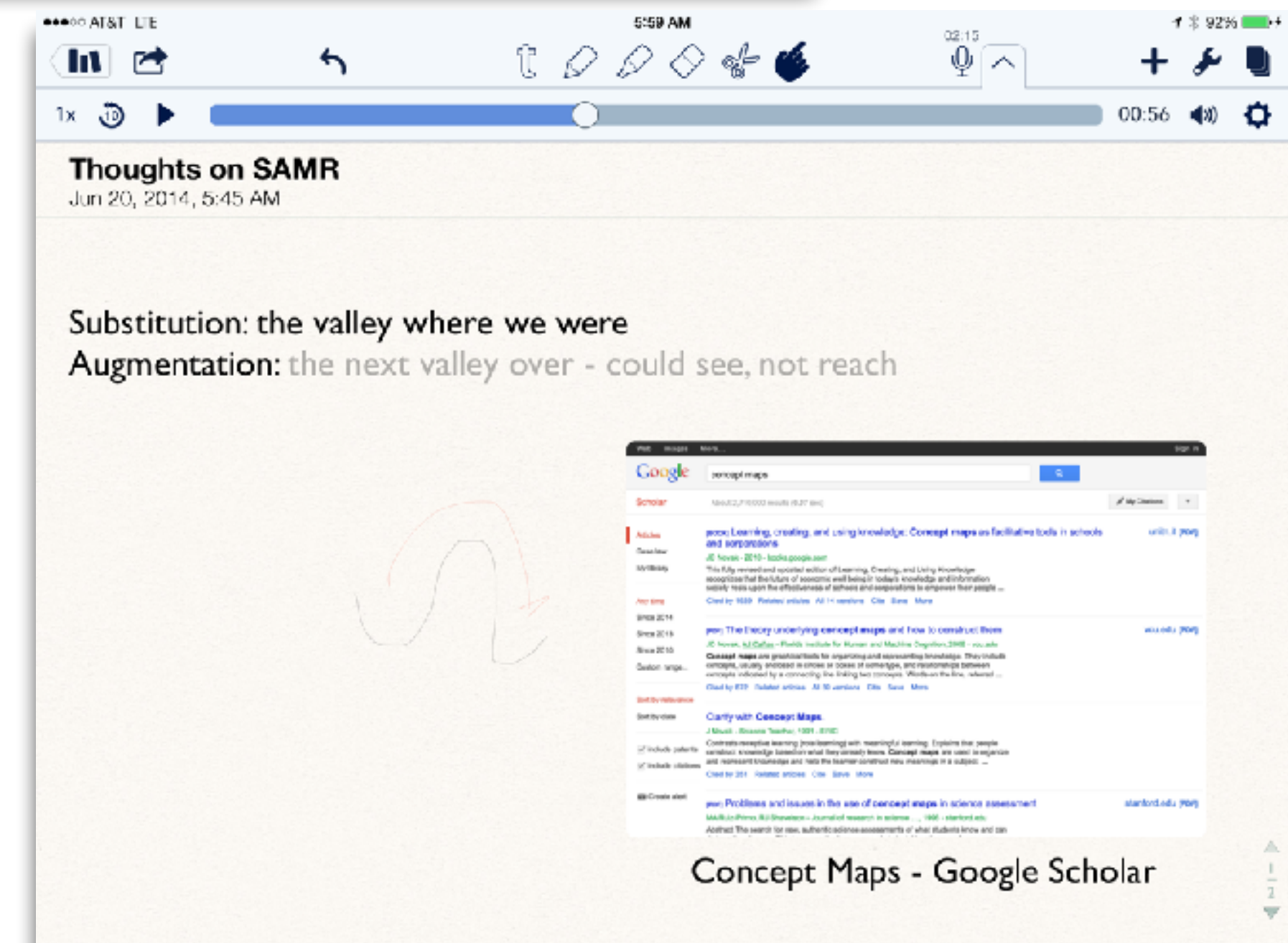
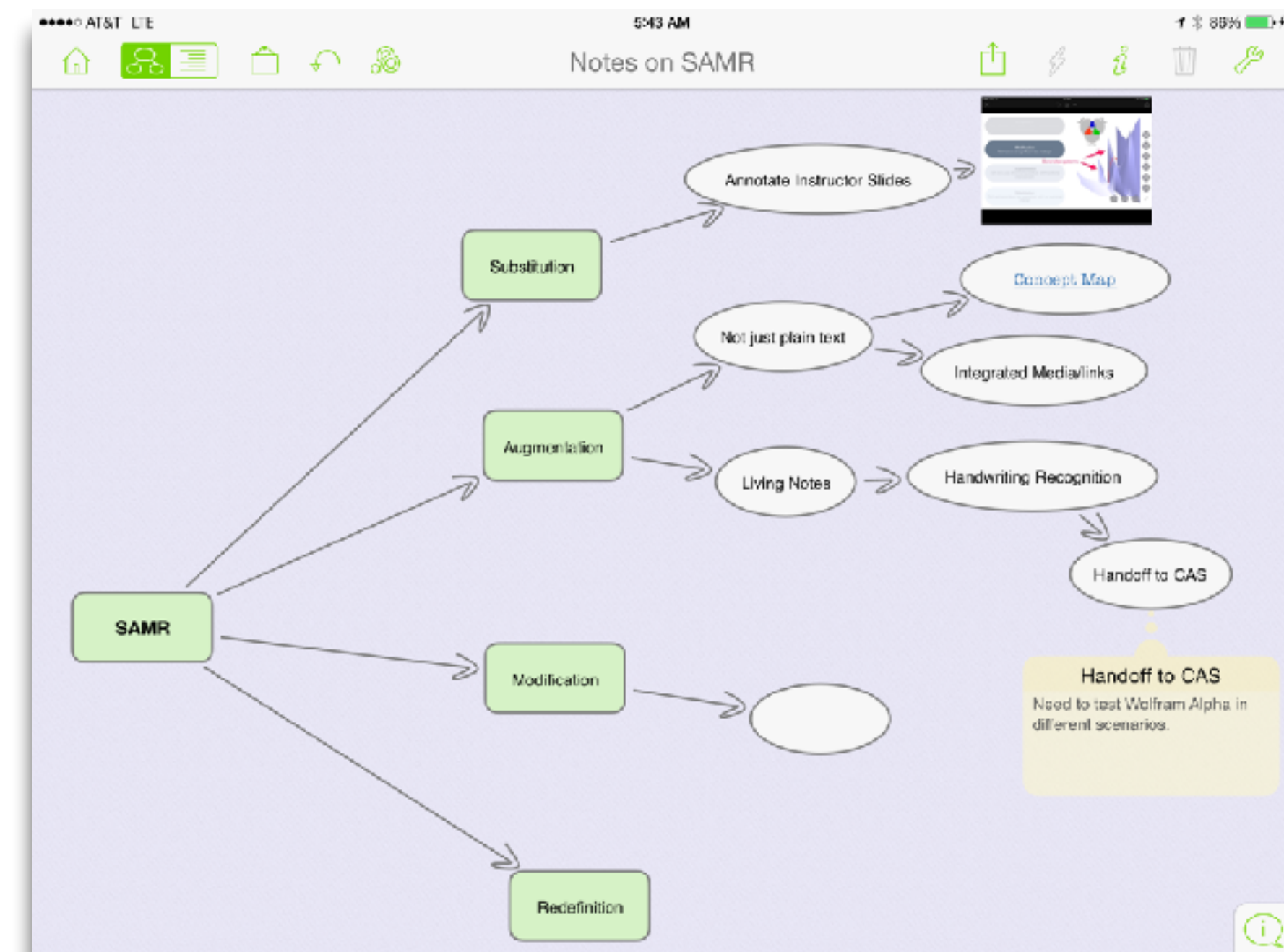
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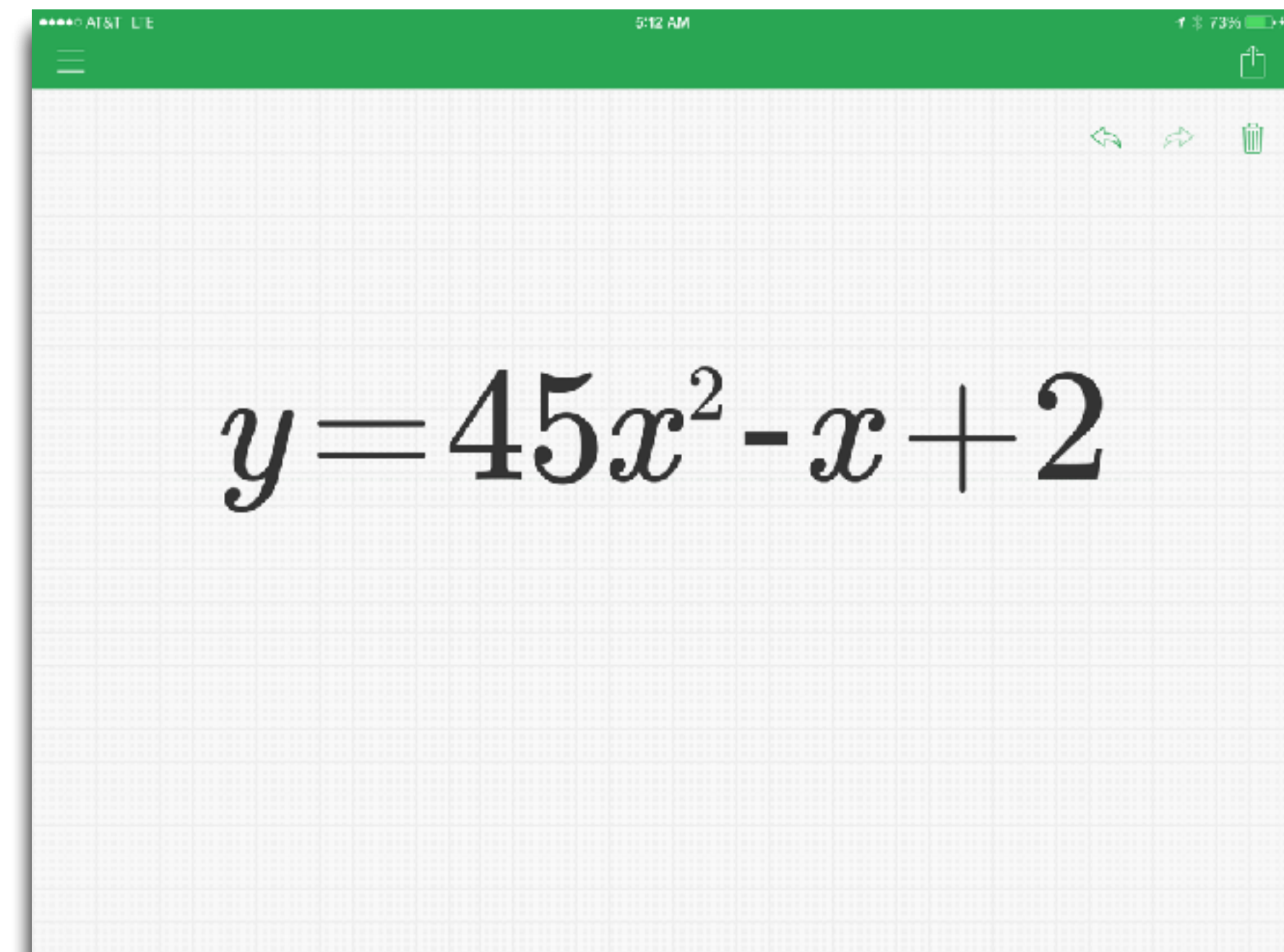
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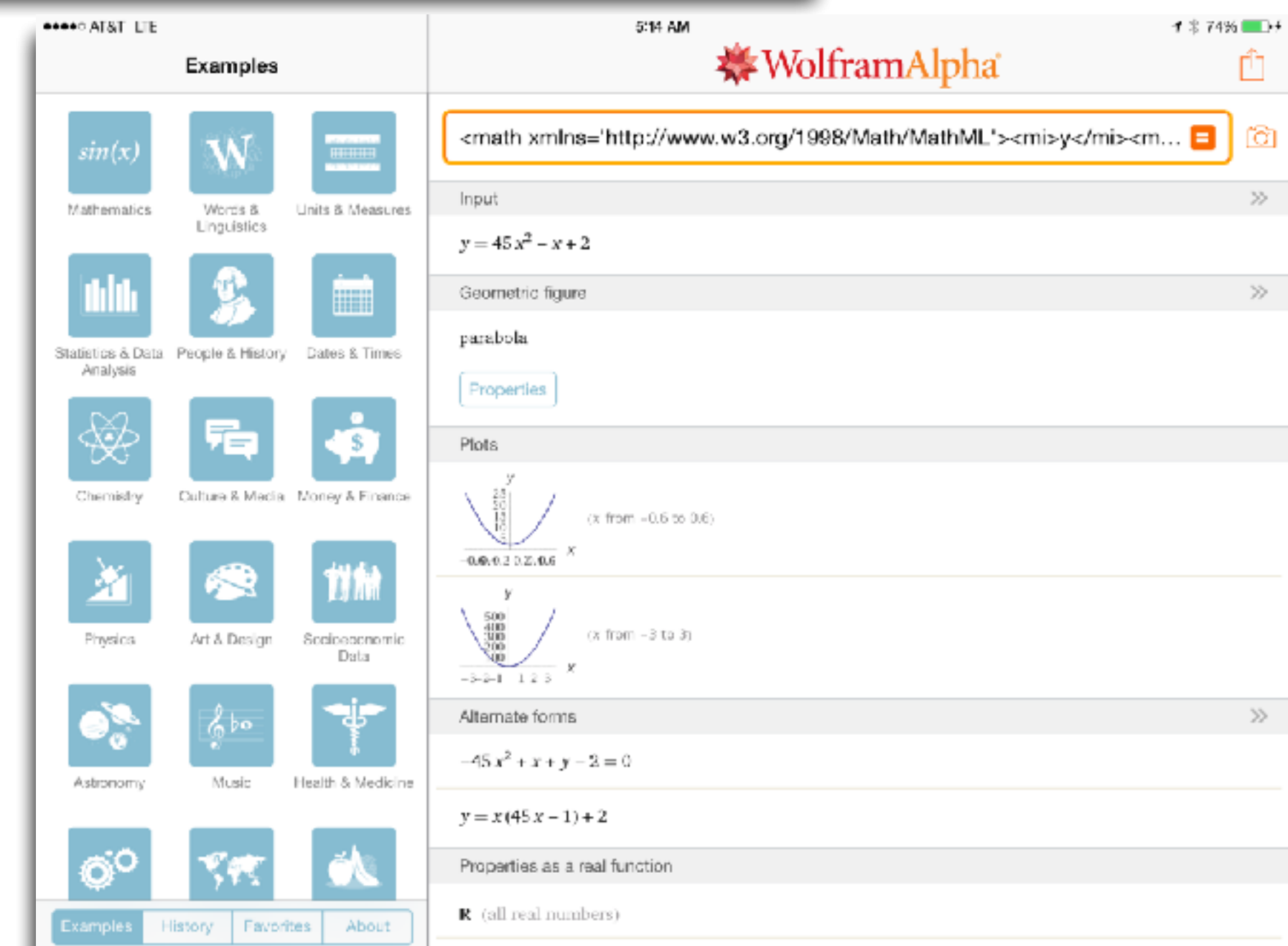
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A screenshot of a mobile application interface. At the top, there is a green header bar with a hamburger menu icon on the left and a share icon on the right. The main area is a light gray grid. In the center of the grid, the quadratic equation $y = 45x^2 - x + 2$ is displayed in a large, black, serif font.



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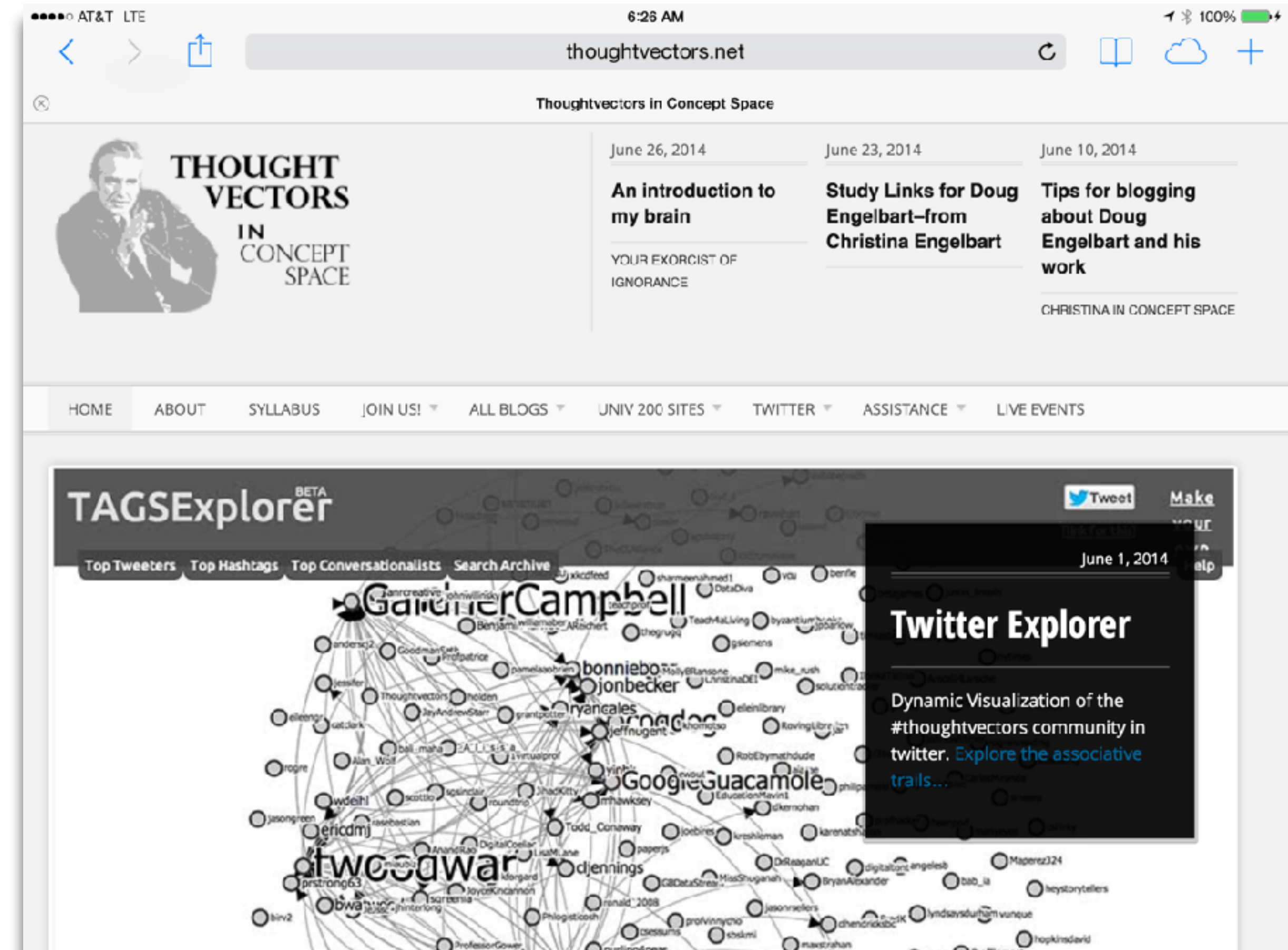
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Choosing the First SAMR Ladder Project: Three Options

- **Your Passion:**

- If you had to pick one topic from your class that best exemplifies why you became fascinated with this aspect of medicine, 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 as future physicians?

In this exercise you will design a SAMR ladder to transform a unit of instruction; the complete exercise should take about 1 hour.

- Please break up into teams of 3-5 participants.
- Your team should take 10 minutes to select the topic that you will use as the basis for your ladder. You should select the topic according to one of these criteria:
 - Your Passion:
If you had to pick one topic from your class that best exemplifies why you became fascinated with this aspect of medicine, 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 as future physicians?
- You should make sure that the topic is not too broad or too narrow - for instance, trying to transform the entire Physiology curriculum would be too ambitious for this exercise, but focusing solely on teaching the structure of myosin would be too narrow.
- Having chosen a topic, you should design a SAMR ladder to transform how it is taught today. Plan to spend about 20 minutes identifying key pedagogical goals and creating a "rough" version of the ladder, followed by 20 minutes refining and revising the ladder to put it into final form, including the tools you plan to use and reasonably detailed descriptions of the activities planned.
- In the final 10 minutes of this exercise, transcribe a description of your ladder, making sure that the writeup is understandable by someone who has not participated in your discussions, and is detailed enough that they could implement your ladder with a minimum of additional work needed.

Determining SAMR Level: Questions and Transitions

- **Substitution:**
 - What is gained by replacing the older technology with the new technology?
- **Substitution to Augmentation:**
 - Has an improvement been added to the task process that could not be accomplished with the older technology at a fundamental level?
 - How does this feature contribute to the design?
- **Augmentation to Modification:**
 - How is the original task being modified?
 - Does this modification fundamentally depend upon the new technology?
 - How does this modification contribute to the design?
- **Modification to Redefinition:**
 - What is the new task?
 - Is any portion of the original task retained?
 - How is the new task uniquely made possible by the new technology?
 - How does it contribute to the design?

S to A: The Value of Shared Practices

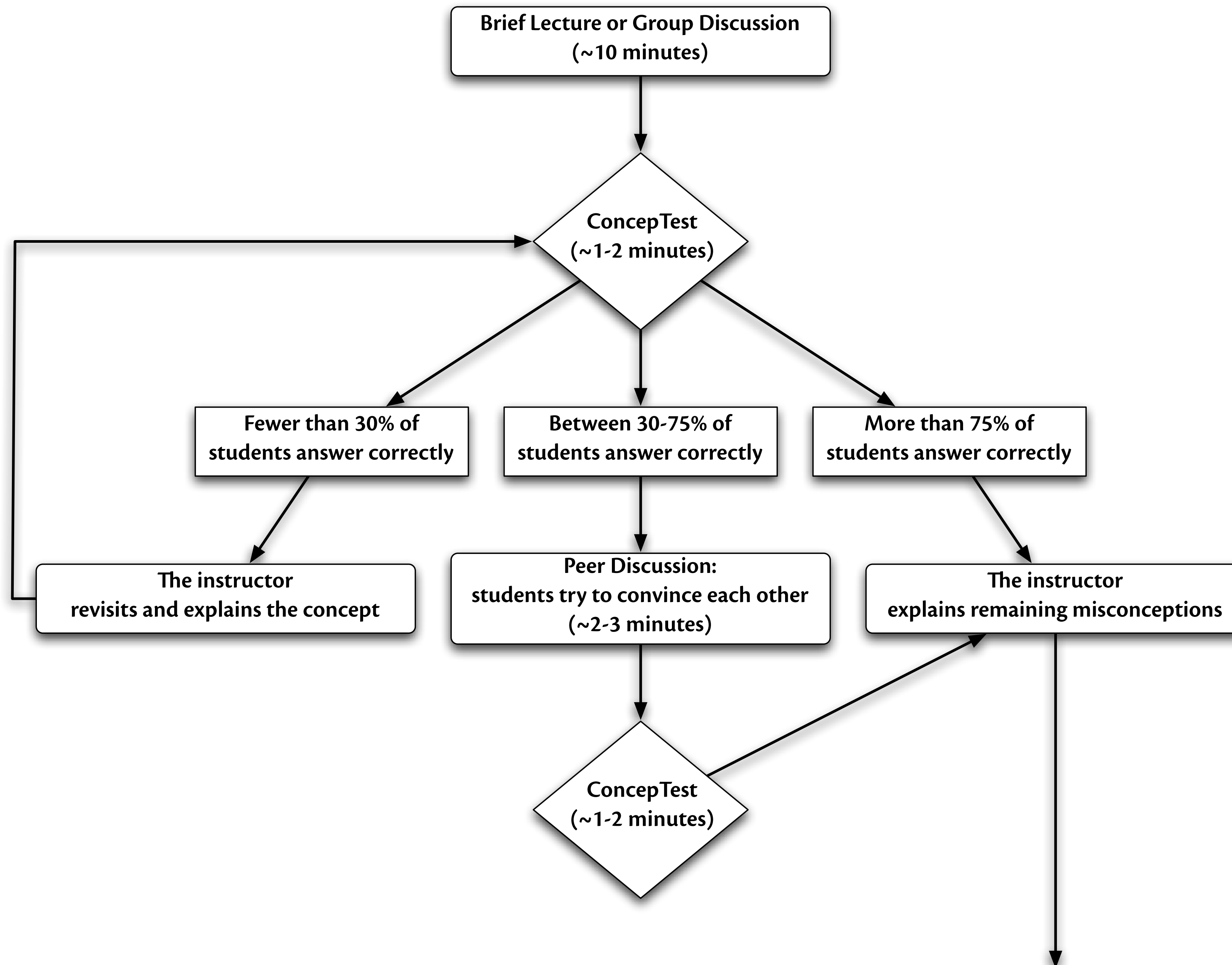
- Augmented Note Taking and Annotation
- Visualization Methods:
 - 5 Primary Domains: Space, Time, Networks, Text, Number
- Simple Blogging
- Simple Digital Storytelling Video
- Flipped Classroom:
 - Materials Creation
 - Peer Discussion/Instruction Methods
- Simple Interactive Fiction
- LMS Practices

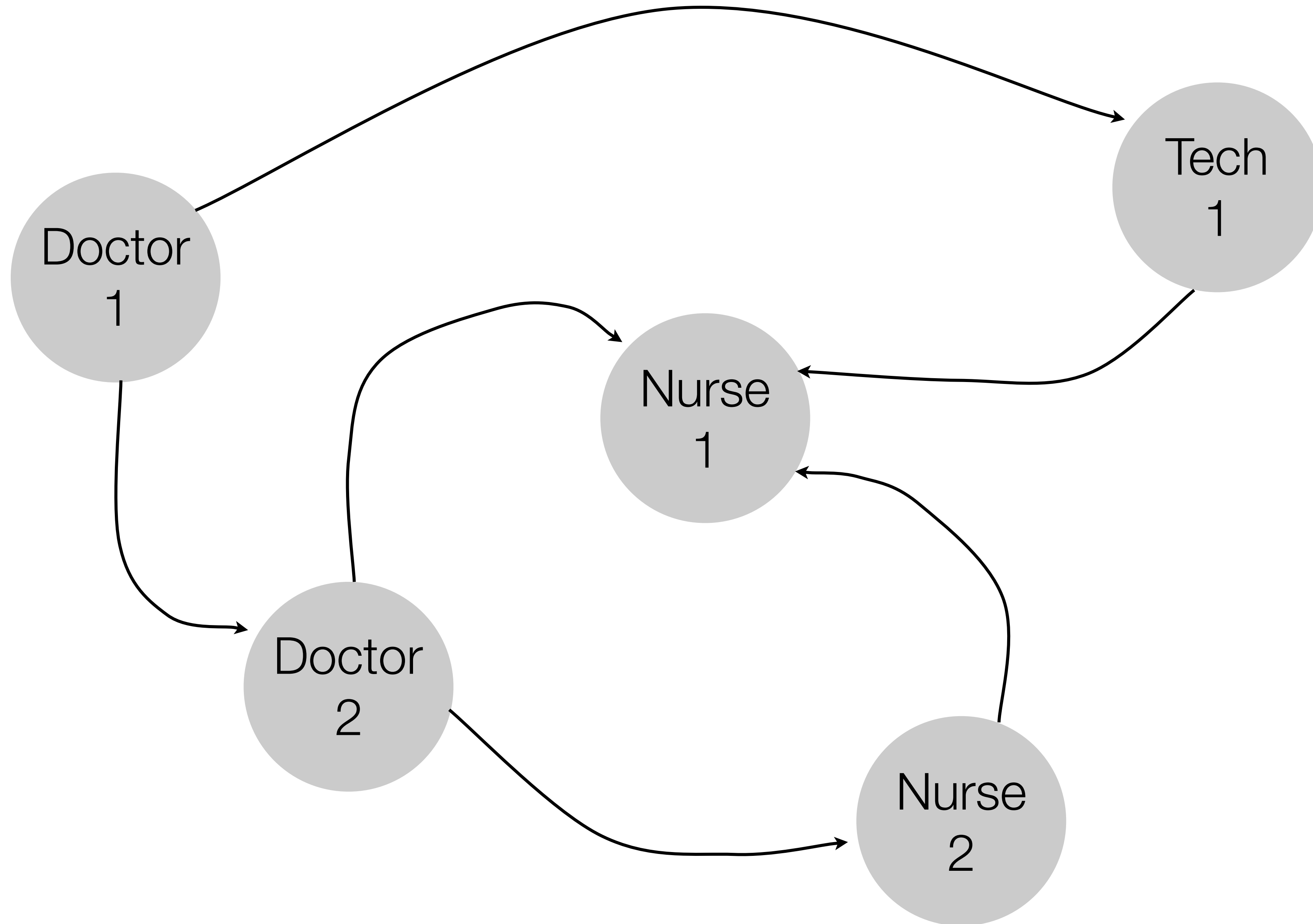
Black and Wiliam: Defining Formative Assessment

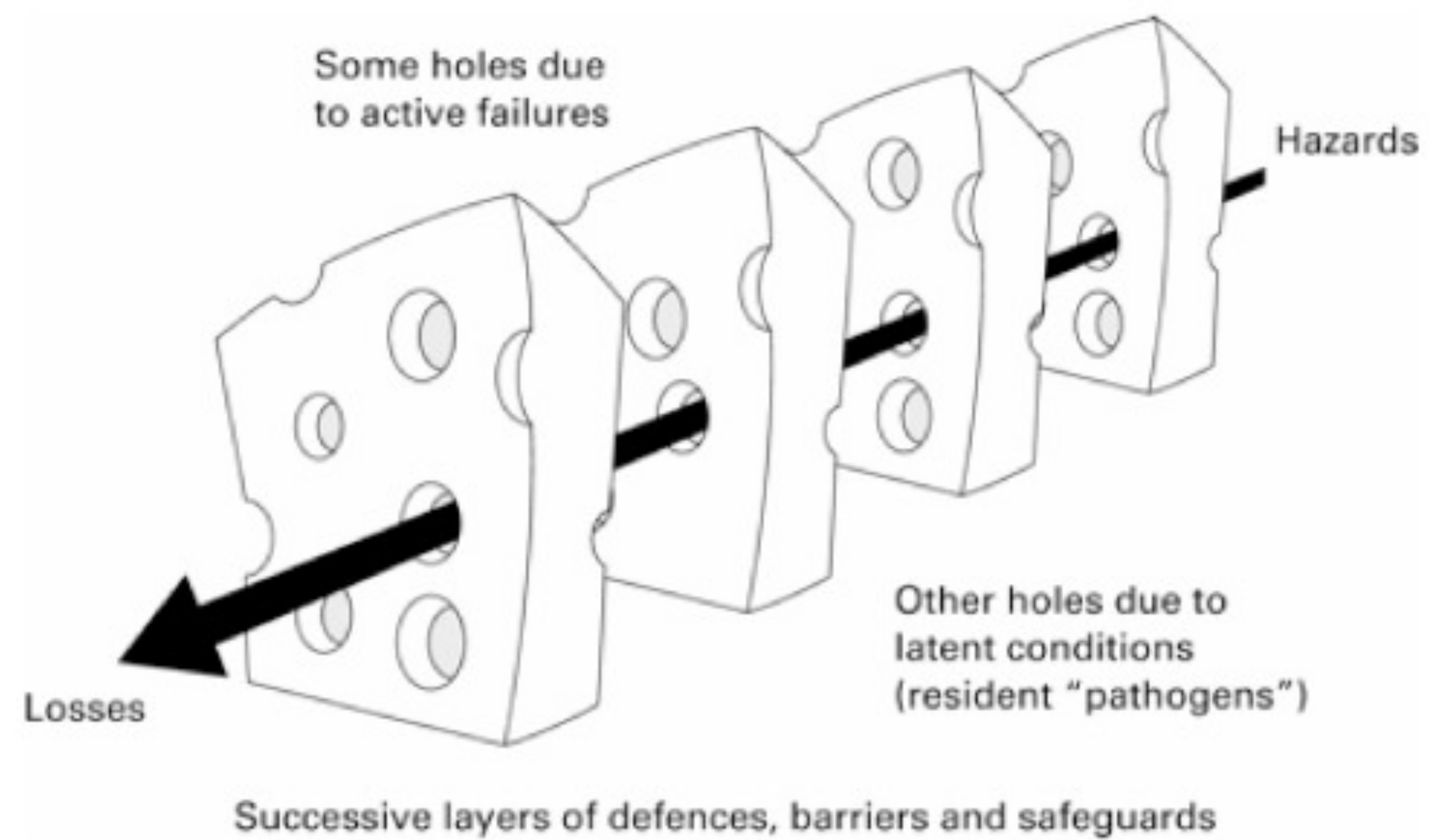
“Practice in a classroom is formative to the extent that evidence about student achievement is elicited, interpreted, and used by teachers, learners, or their peers, to make decisions about the next steps in instruction that are likely to be better, or better founded, than the decisions they would have taken in the absence of the evidence that was elicited.”

Wiliam: A Framework for Formative Assessment

	Where the learner is going	Where the learner is right now	How to get there
Teacher	1 Clarifying learning intentions and criteria for success	2 Engineering effective classroom discussions and other learning tasks that elicit evidence of student understanding	3 Providing feedback that moves learners forward
Peer	Understanding and sharing learning intentions and criteria for success	4 Activating students as instructional resources for one another	
Learner	Understanding learning intentions and criteria for success	5 Activating students as the owners of their own learning	







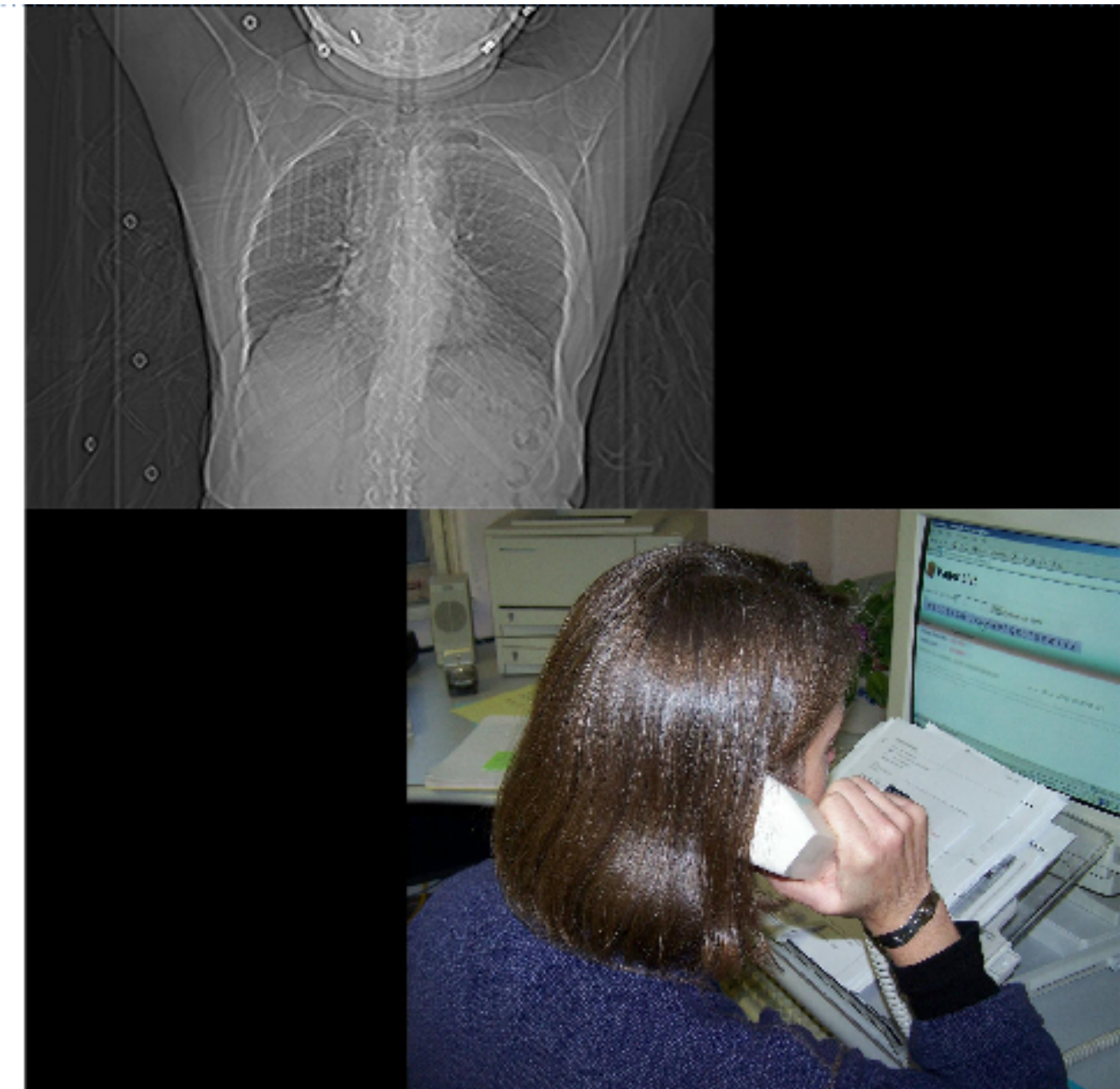
Anticoagulants and Communication






Why is this so complicated? I just want a piece of tissue!
I forget how many people "touch " the patient... to get this stuff done.

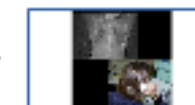
Frank Monroe, M.D.

Expectation Disappointment Understanding Communication Appreciation



   1 Mrs. Barlow

   2 Janet Reed, R.N.



Drag zoom slider to enlarge image



Hippasus



Blog: <http://hippasus.com/blog/>

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