

Learning, Technology, and the SAMR Model: Goals, Processes, and Practice

Ruben R. Puentedura, Ph.D.

Transformation

Redefinition

*Tech allows for the creation of new tasks,
previously inconceivable*

Modification

Tech allows for significant task redesign

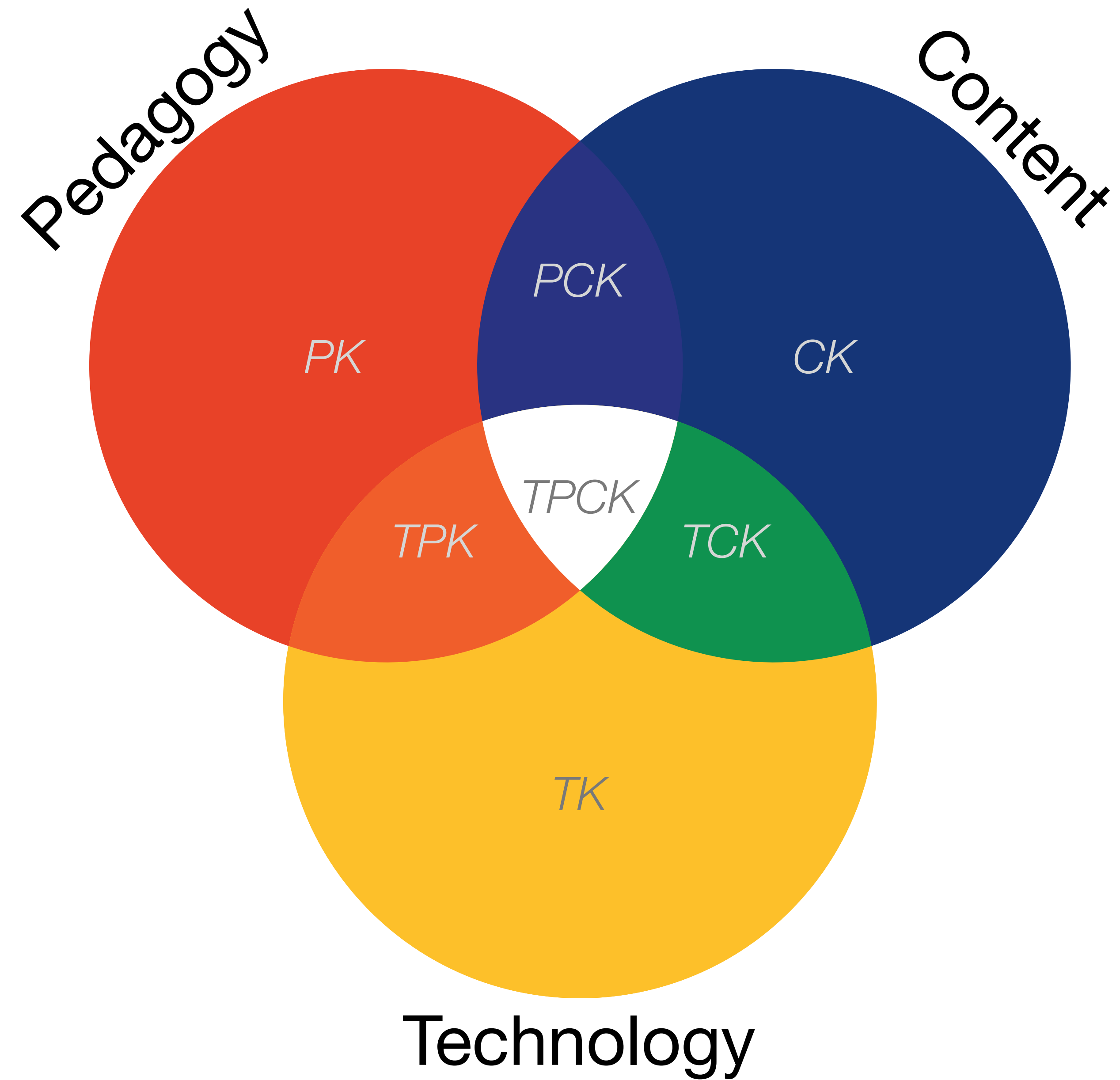
Augmentation

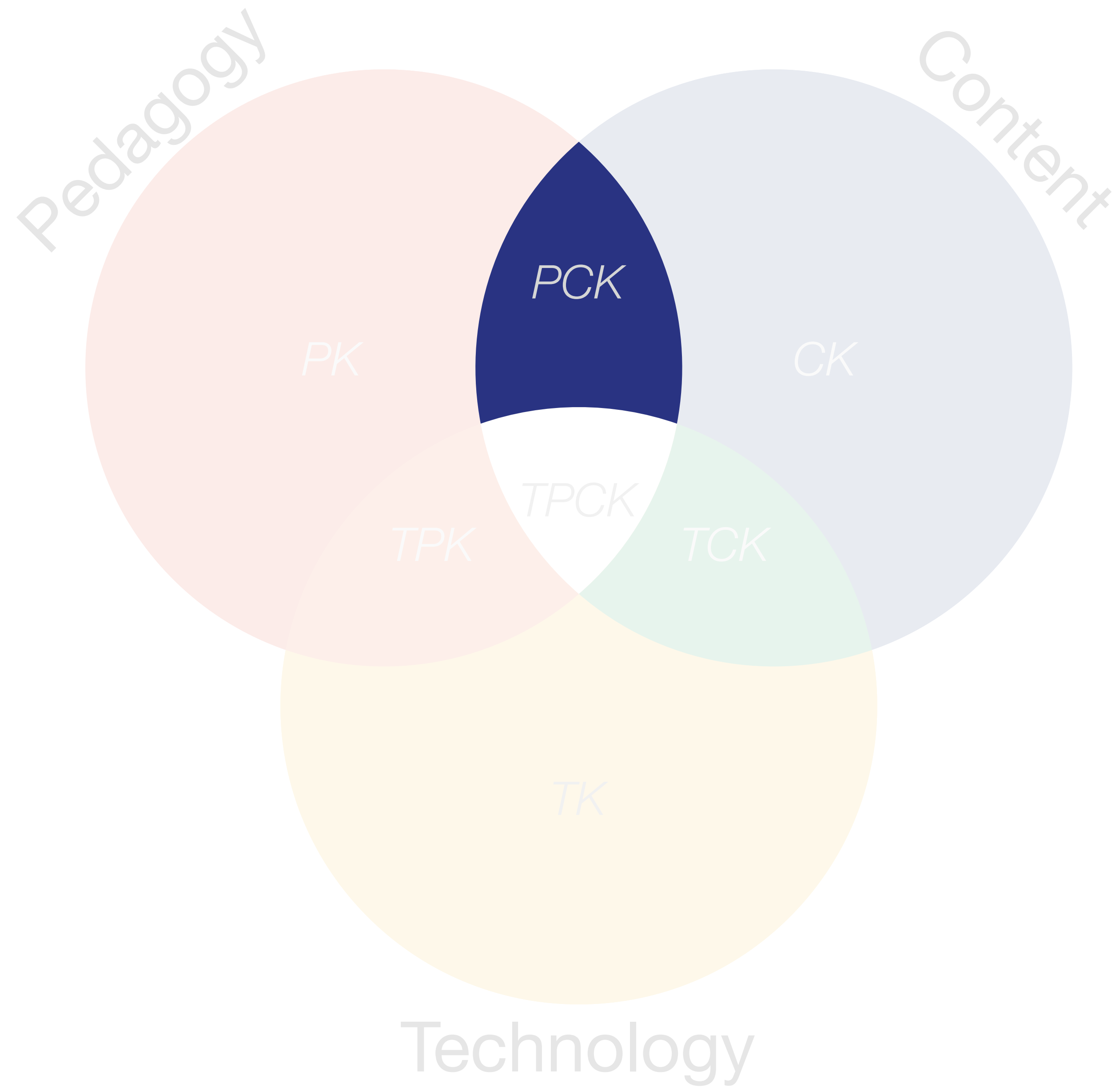
*Tech acts as a direct tool substitute, with
functional improvement*

Substitution

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

Enhancement





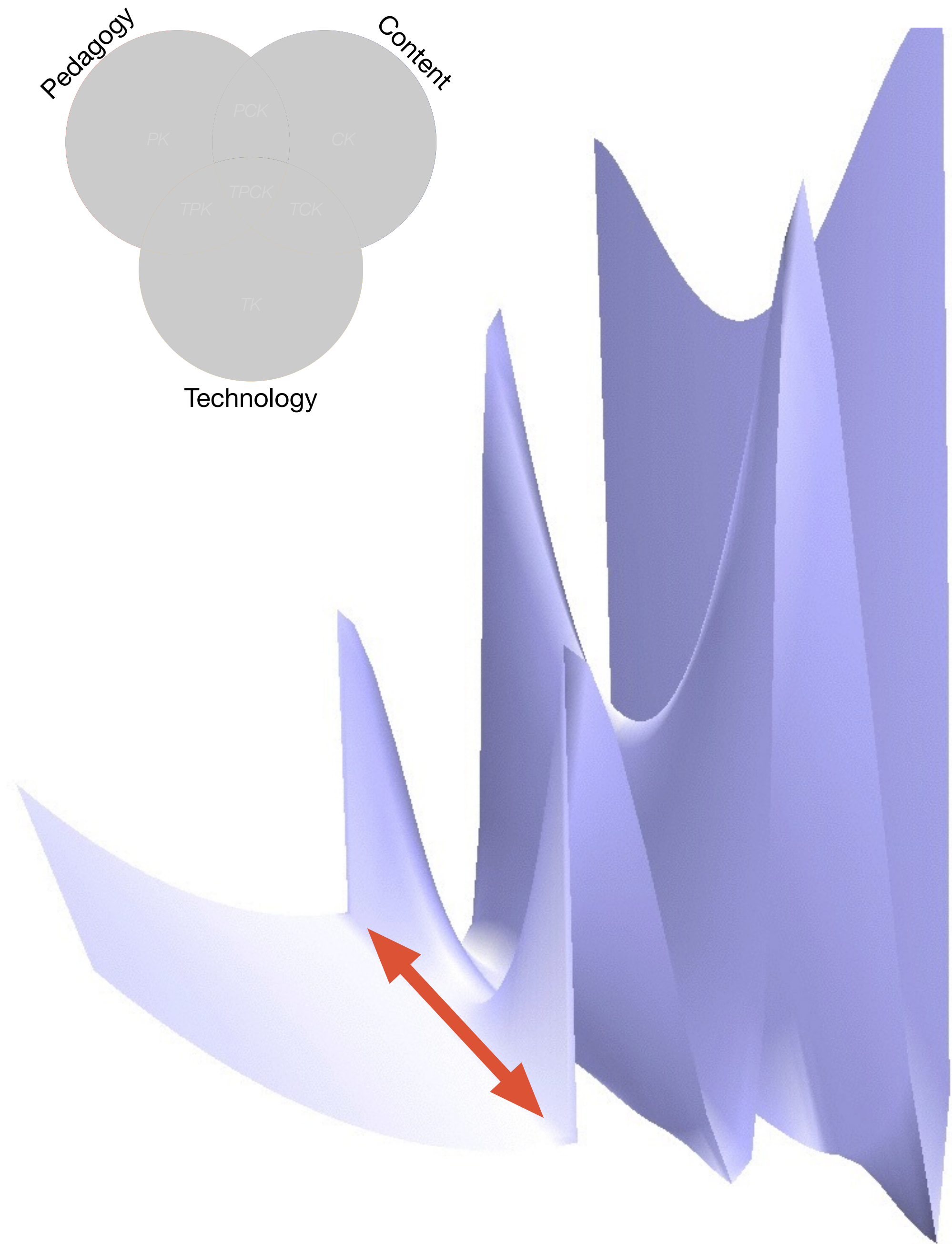


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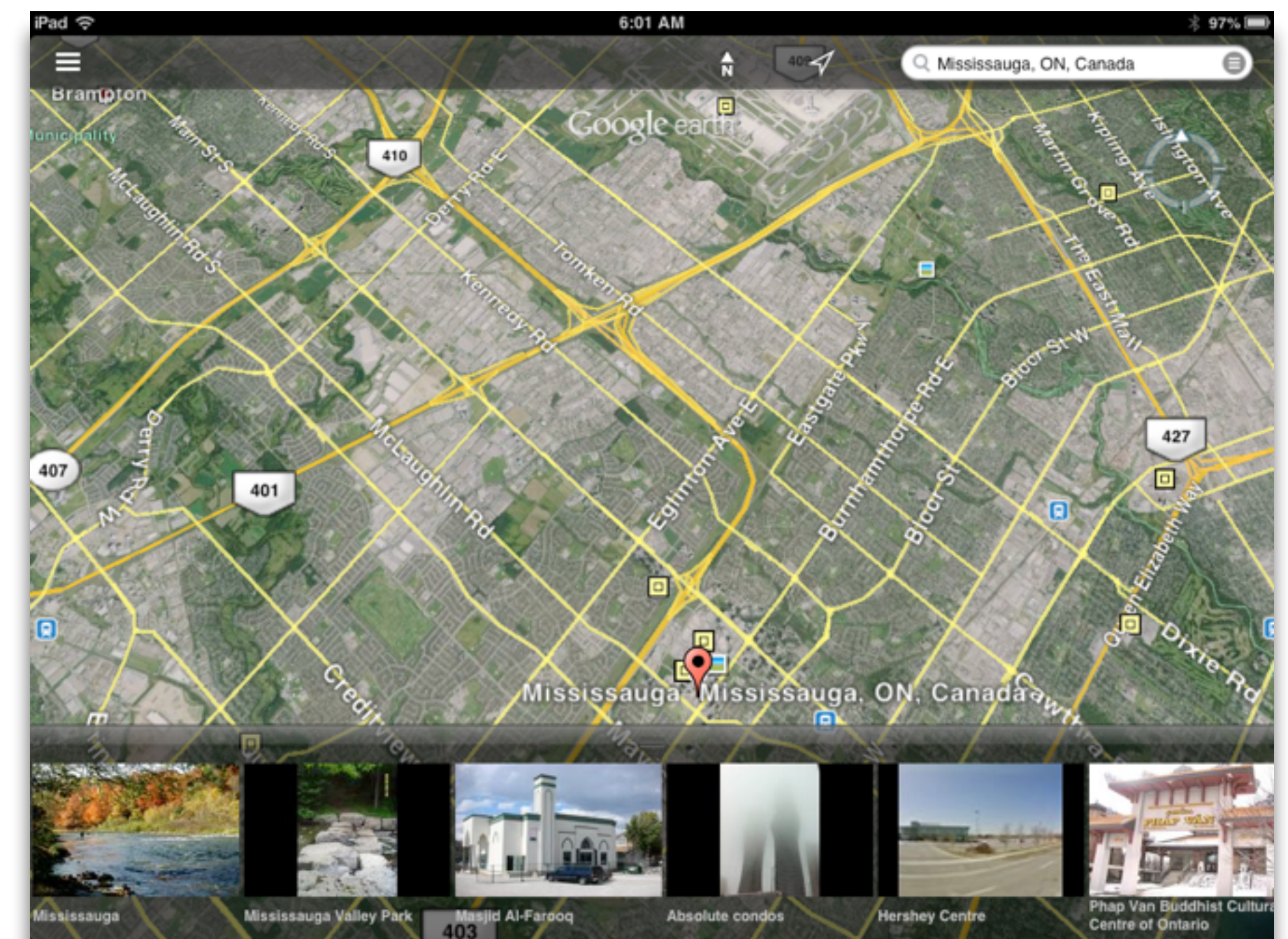
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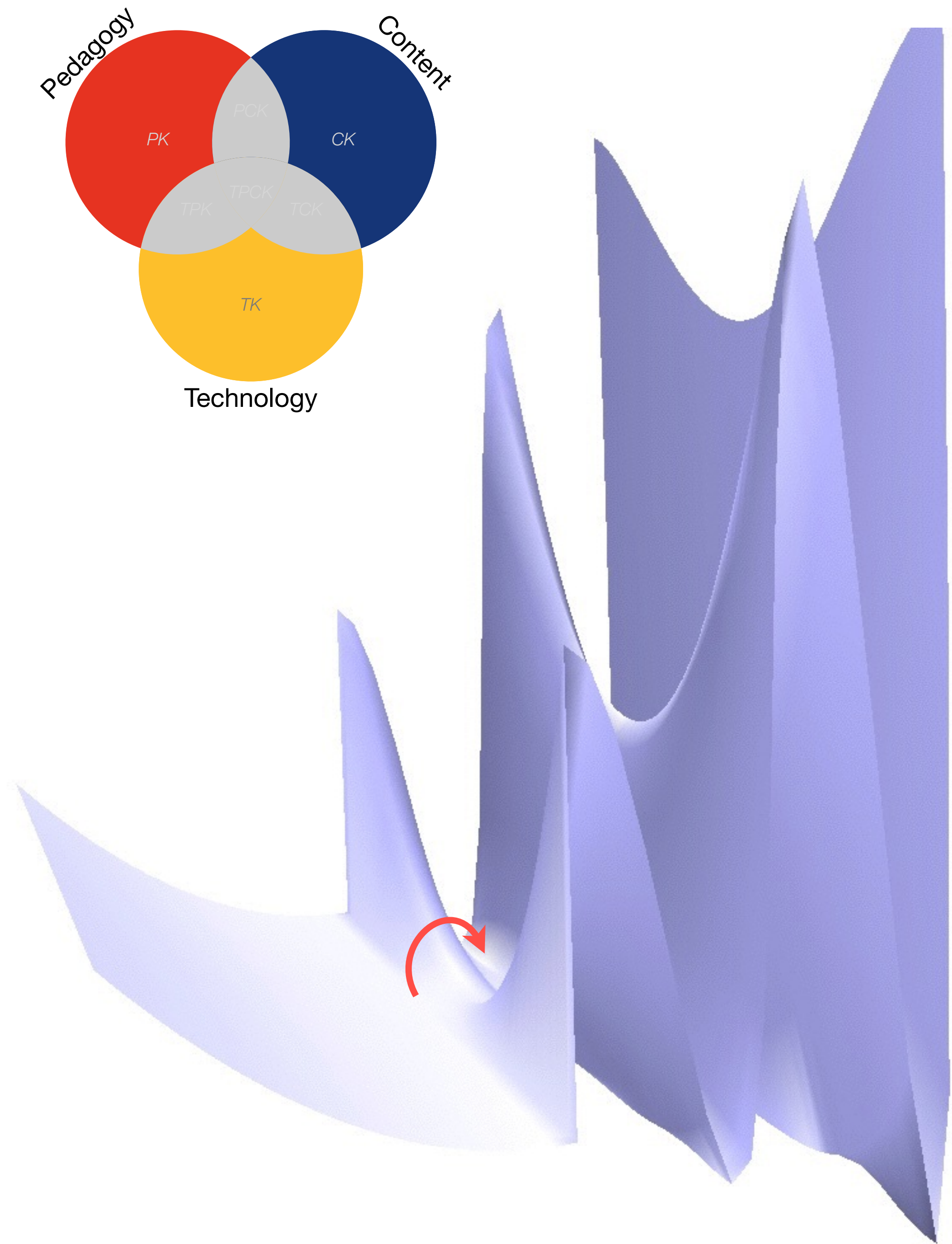


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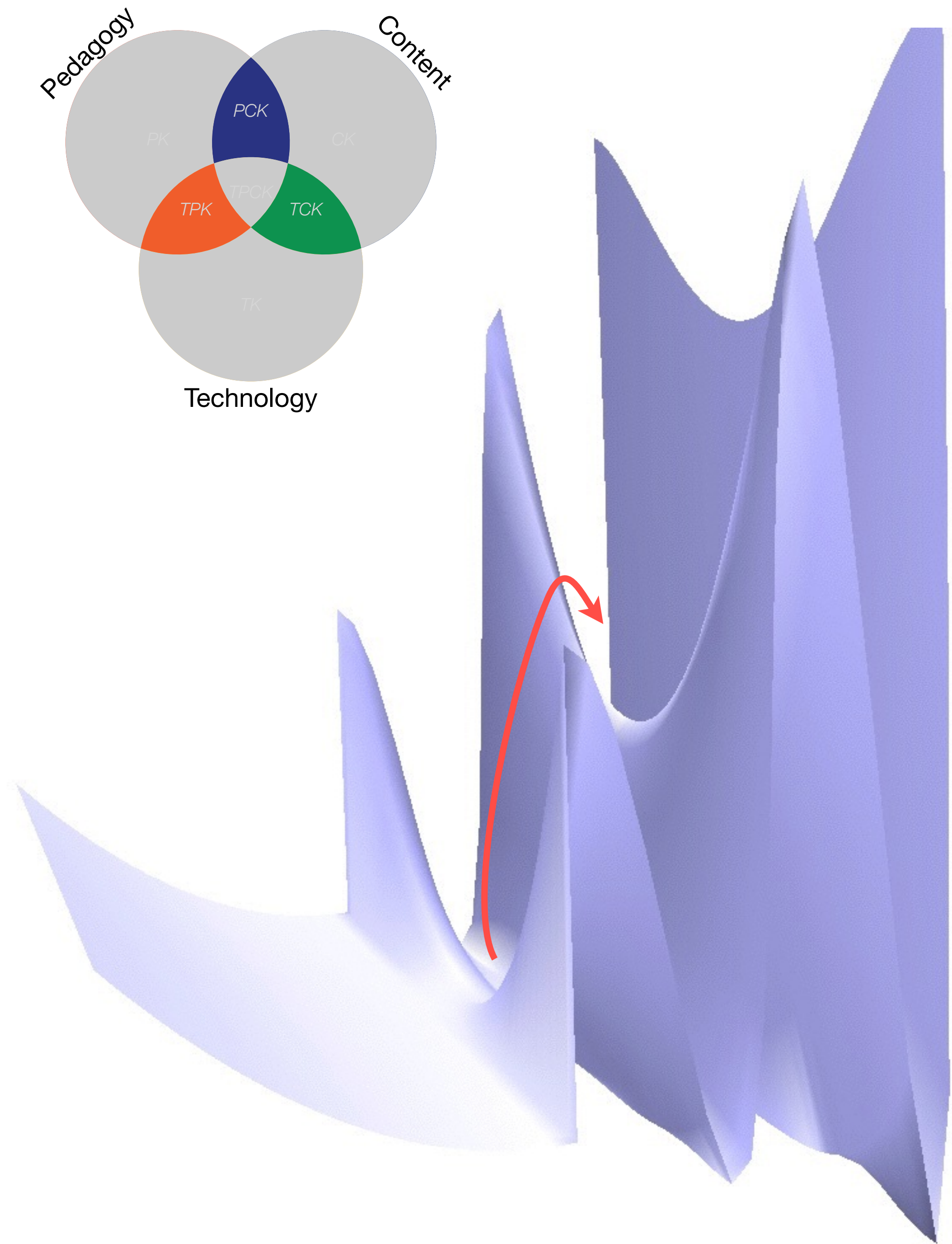


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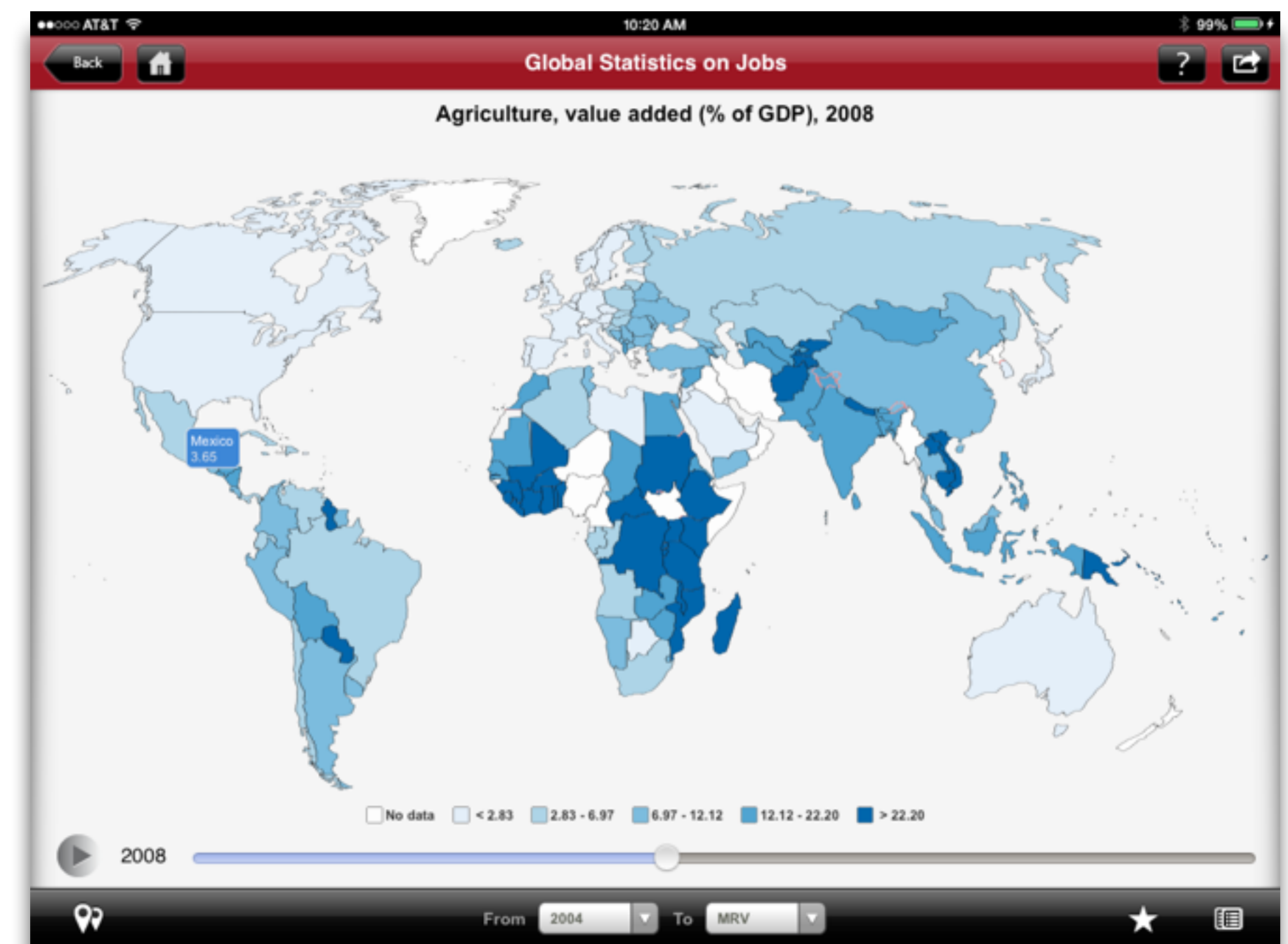
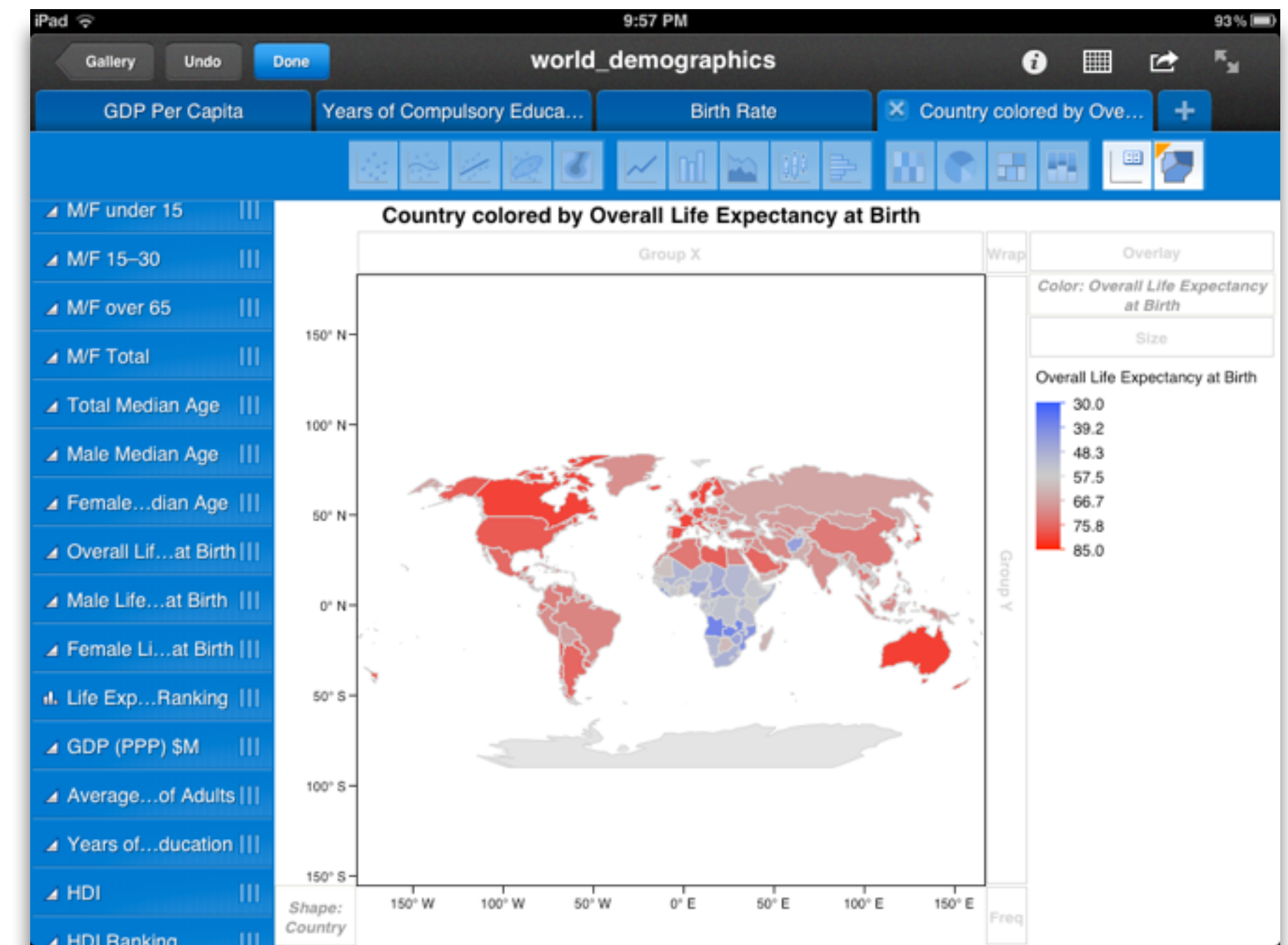
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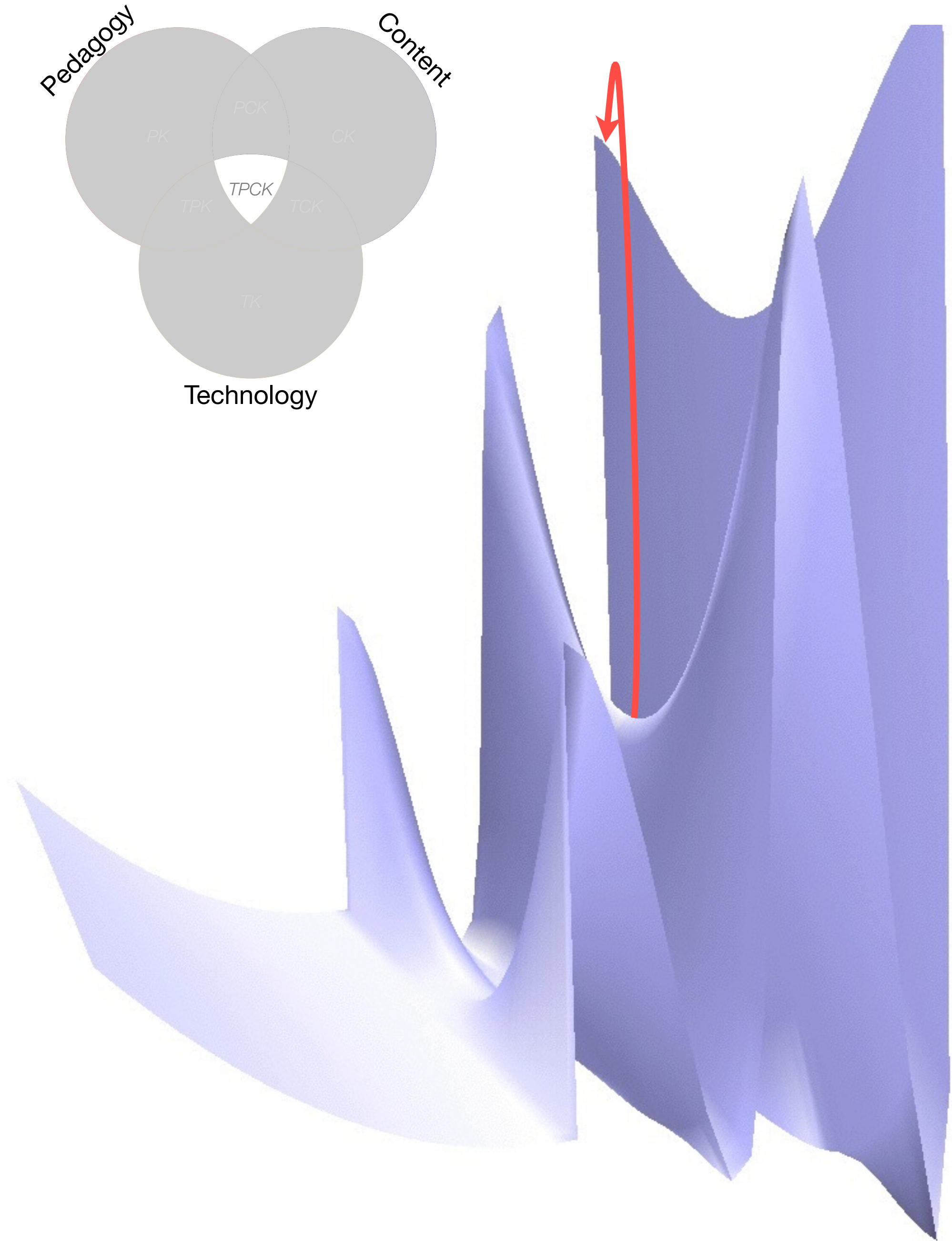


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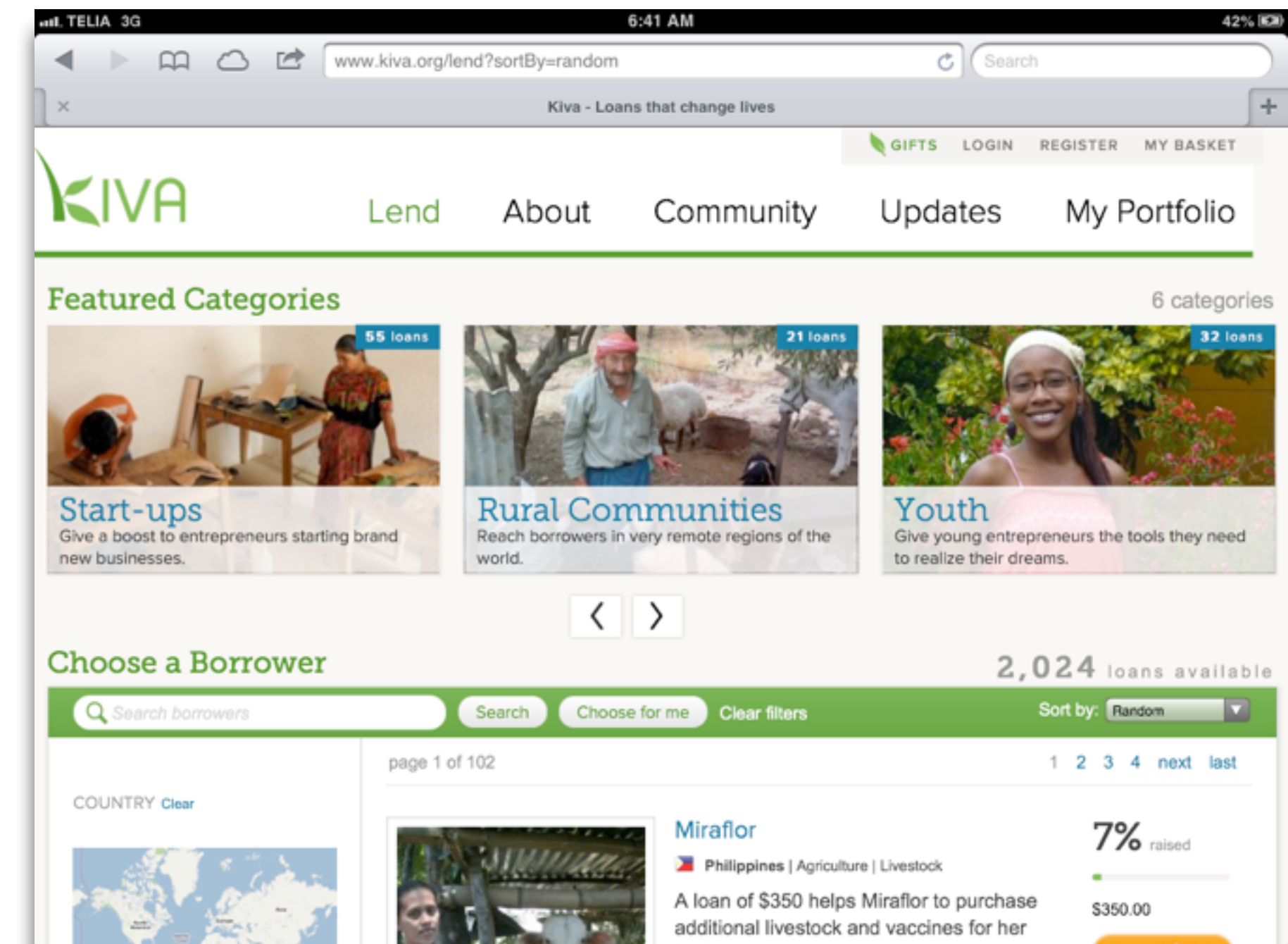
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The Pen Is Mightier Than the Keyboard: Advantages of Longhand Over Laptop Note Taking



Pam A. Mueller¹ and Daniel M. Oppenheimer²

¹Princeton University and ²University of California, Los Angeles

Abstract

Taking notes on laptops rather than in longhand is increasingly common. Many researchers have suggested that laptop note taking is less effective than longhand note taking for learning. Prior studies have primarily focused on students' capacity for multitasking and distraction when using laptops. The present research suggests that even when laptops are used solely to take notes, they may still be impairing learning because their use results in shallower processing. In three studies, we found that students who took notes on laptops performed worse on conceptual questions than students who took notes longhand. We show that whereas taking more notes can be beneficial, laptop note takers' tendency to transcribe lectures verbatim rather than processing information and reframing it in their own words is detrimental to learning.

Psychological Science

1–10

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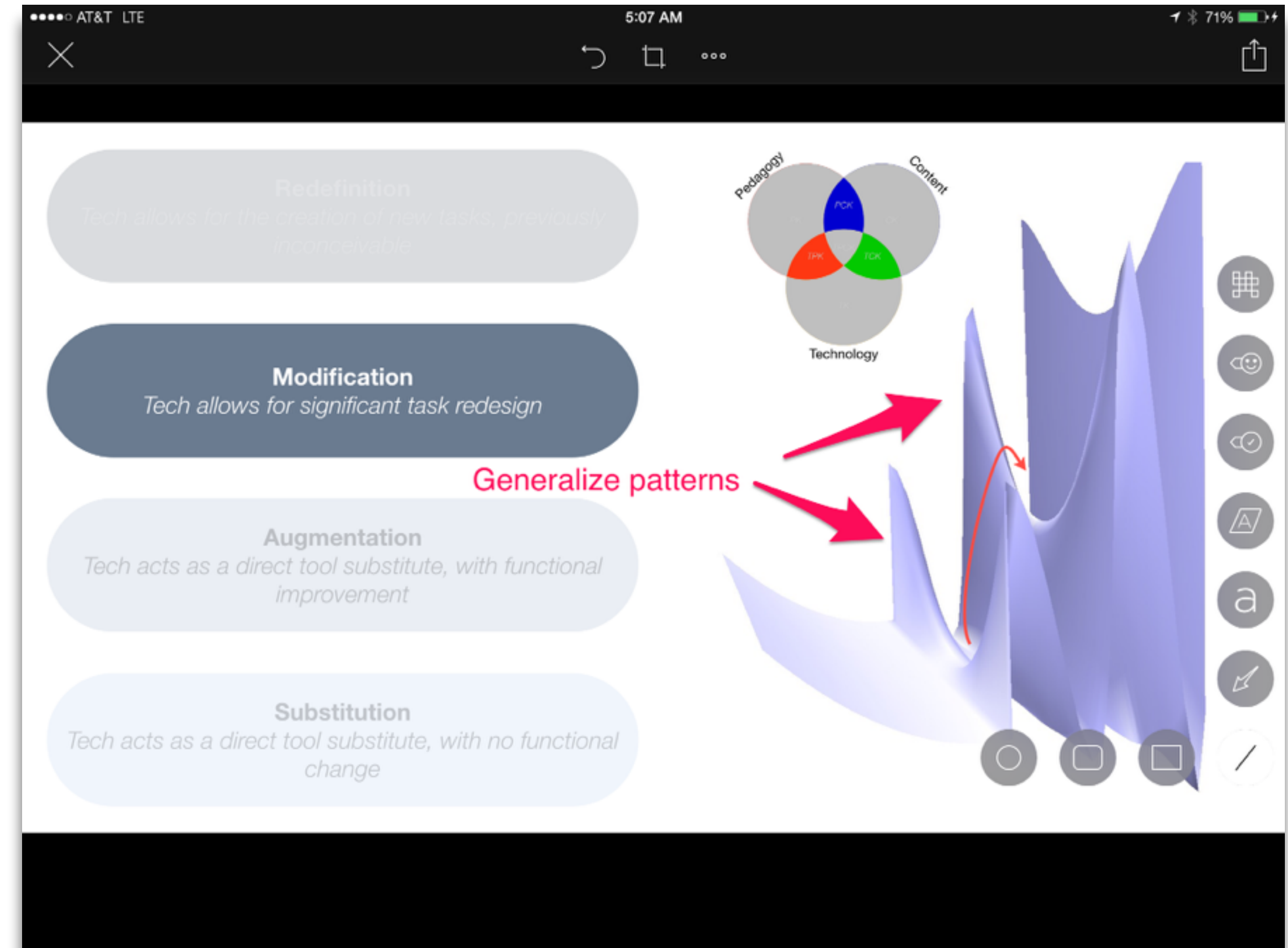
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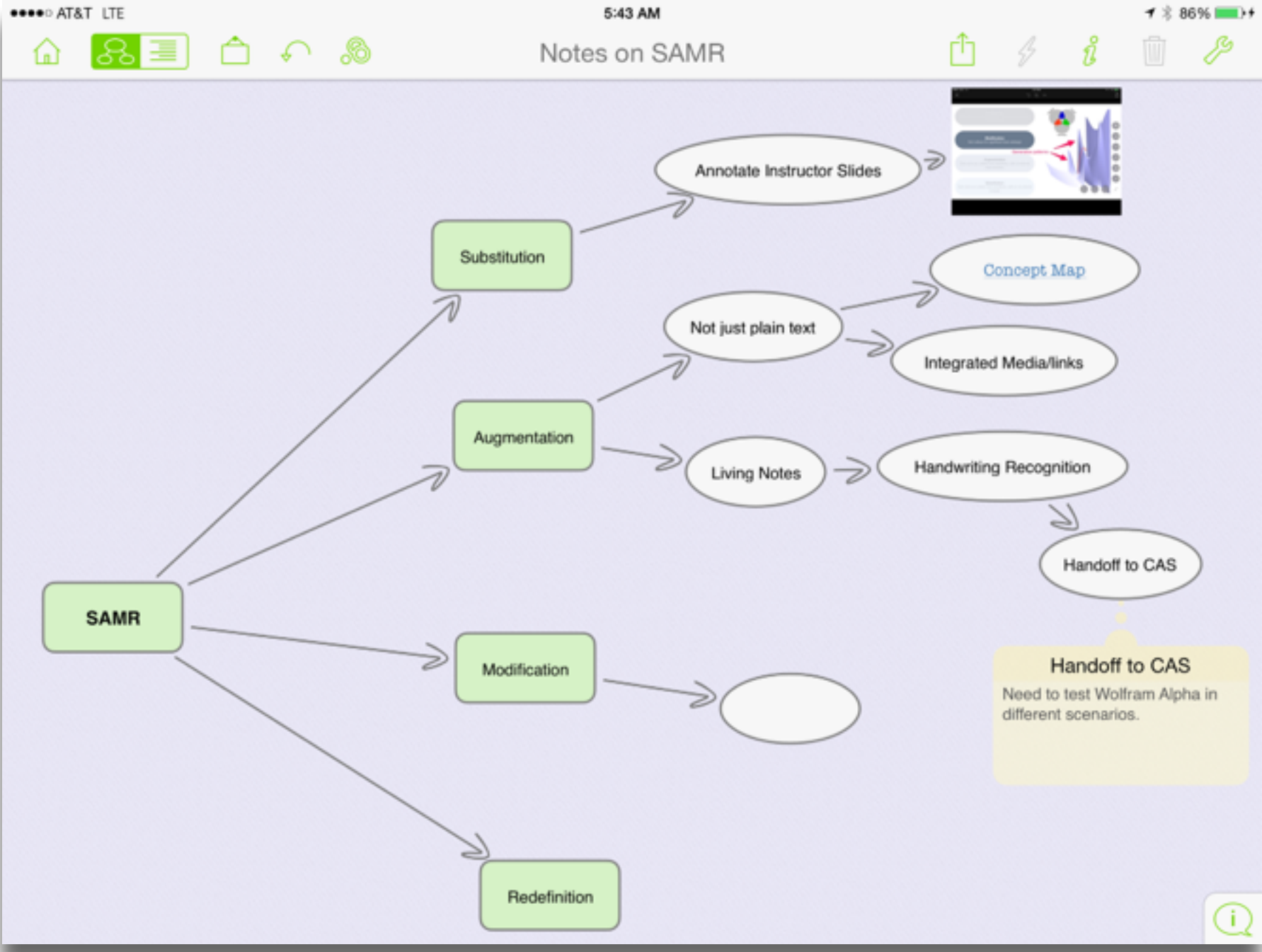


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The screenshot shows a tablet interface with a Google Scholar search for 'concept maps'. The search results are displayed on the screen. The top of the screen shows the time as 5:59 AM and the battery level at 92%. The search results include several articles, with the first one titled 'Concept maps as facilitative tools in schools and corporations' by J.D. Novak. The second article is 'The theory underlying concept maps and how to construct them' by J.D. Novak. The third article is 'Clarify with Concept Maps' by J. Novak. The fourth article is 'Problems and issues in the use of concept maps in science assessment' by M.A. Rupp-Prince. The bottom of the screen shows the text 'Concept Maps - Google Scholar'.

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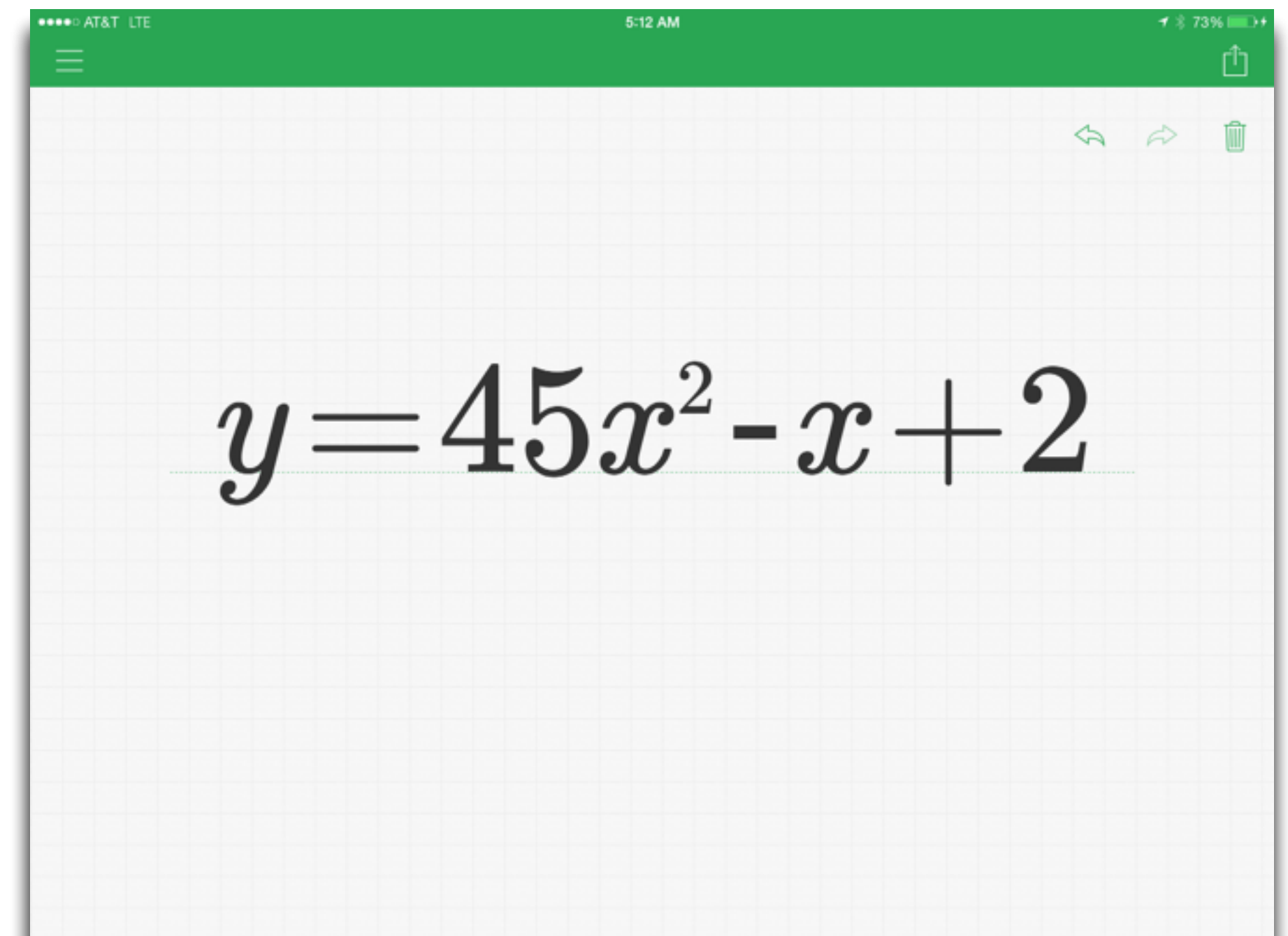
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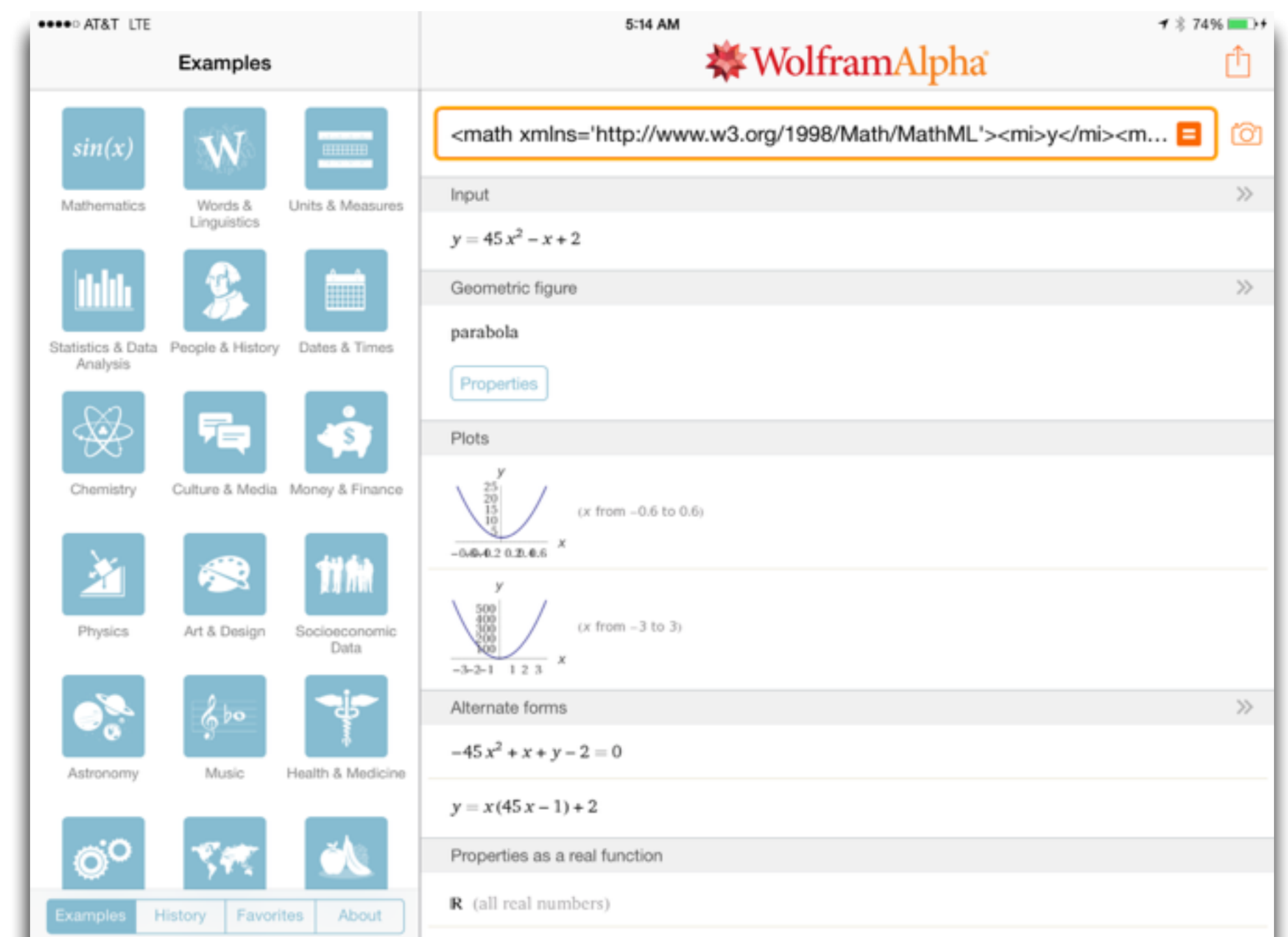
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A screenshot of a mobile application interface with a green header bar. The main area is a light gray grid. In the center, the quadratic equation $y = 45x^2 - x + 2$ is displayed in a large, black, serif font.



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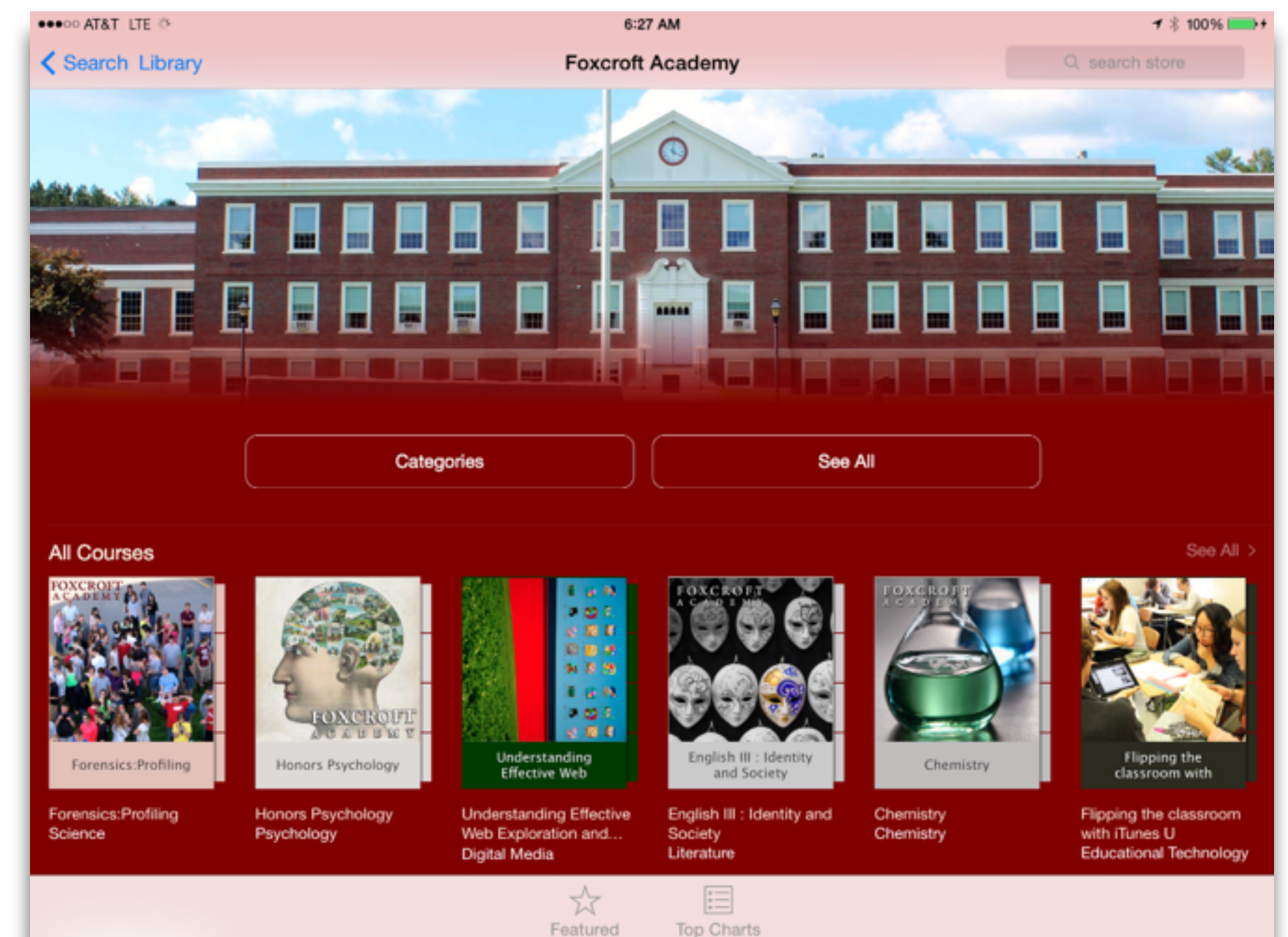
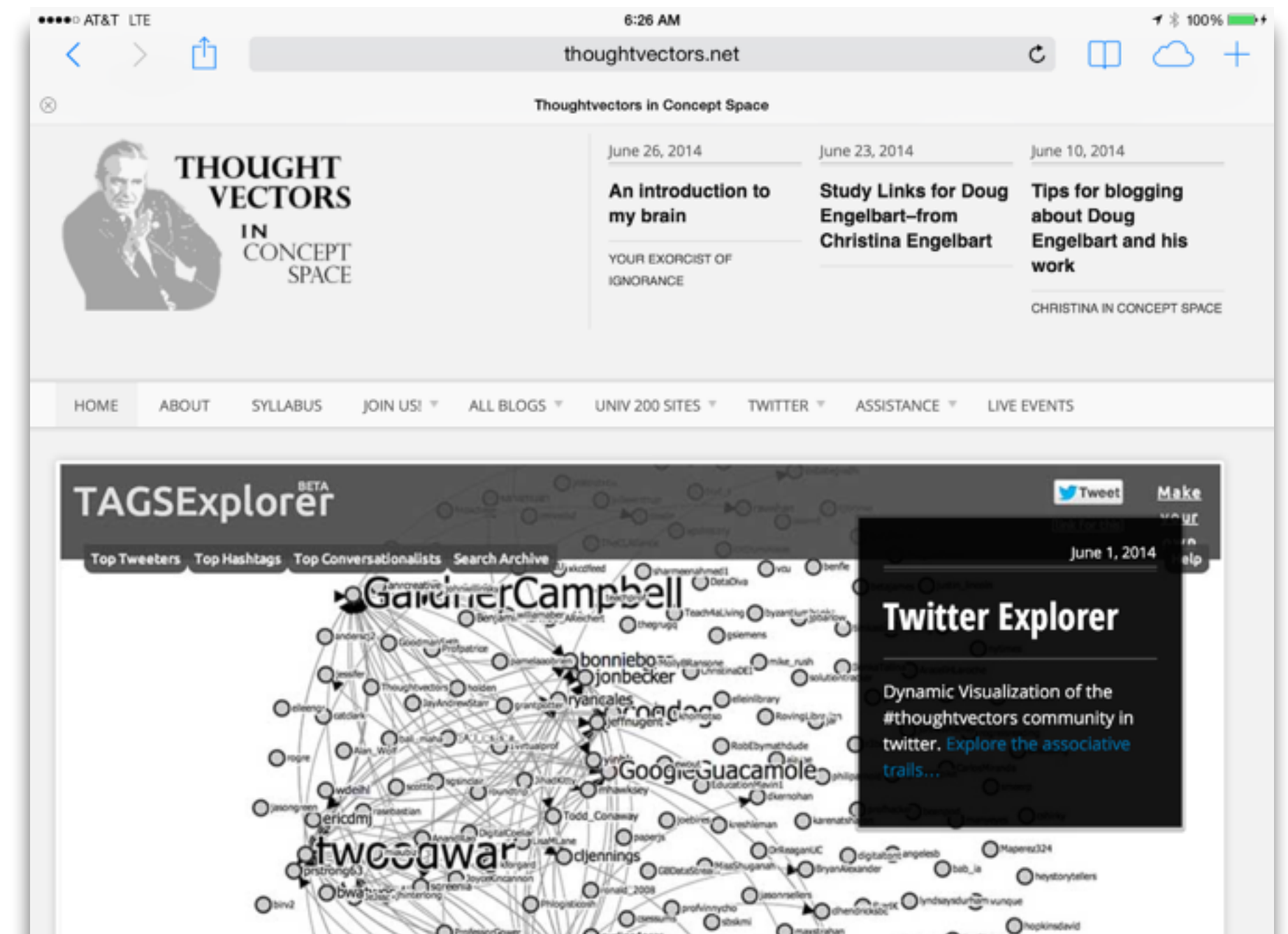
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