

# Understanding SAMR

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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**

## Redefinition

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## Modification

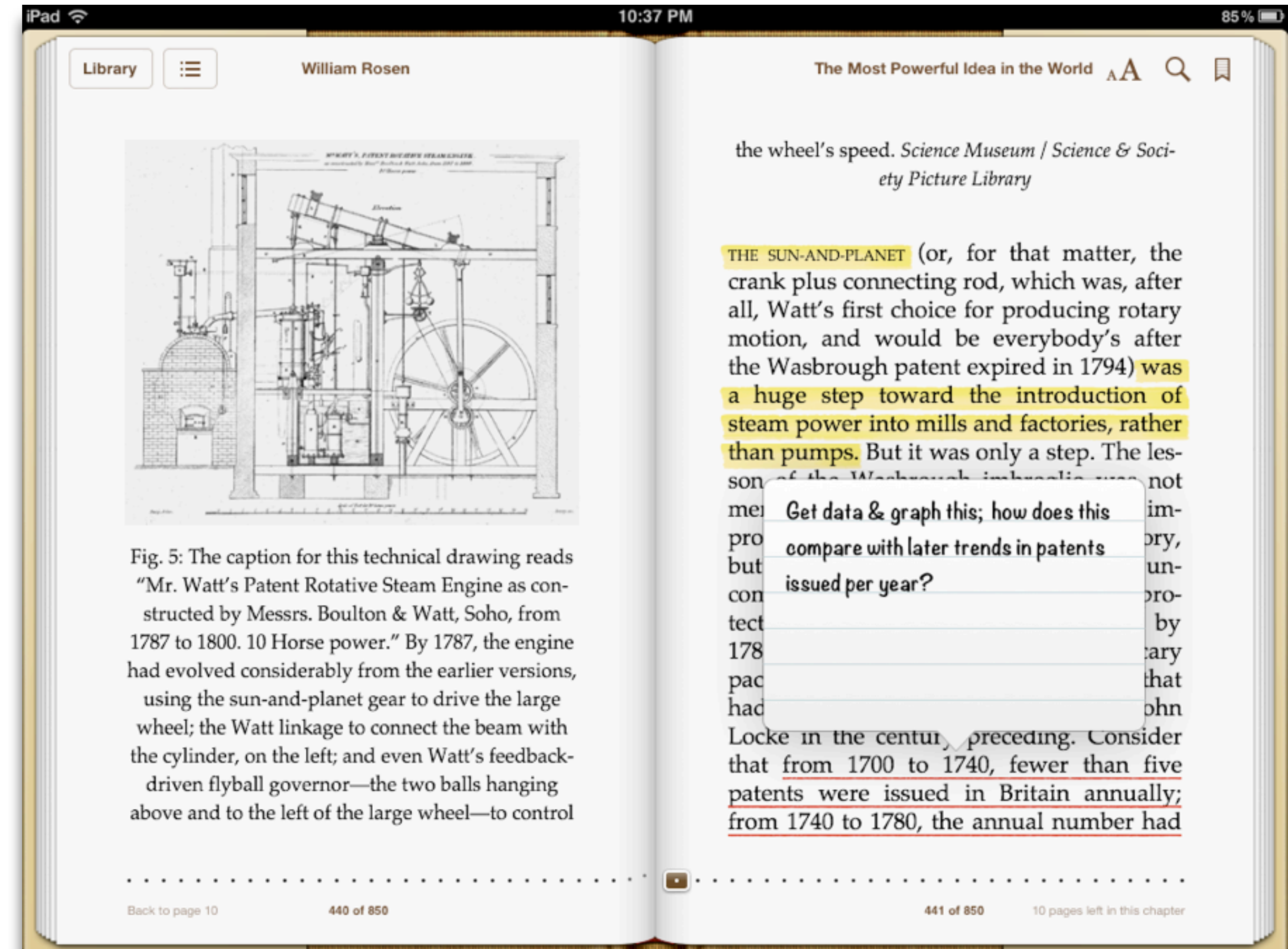
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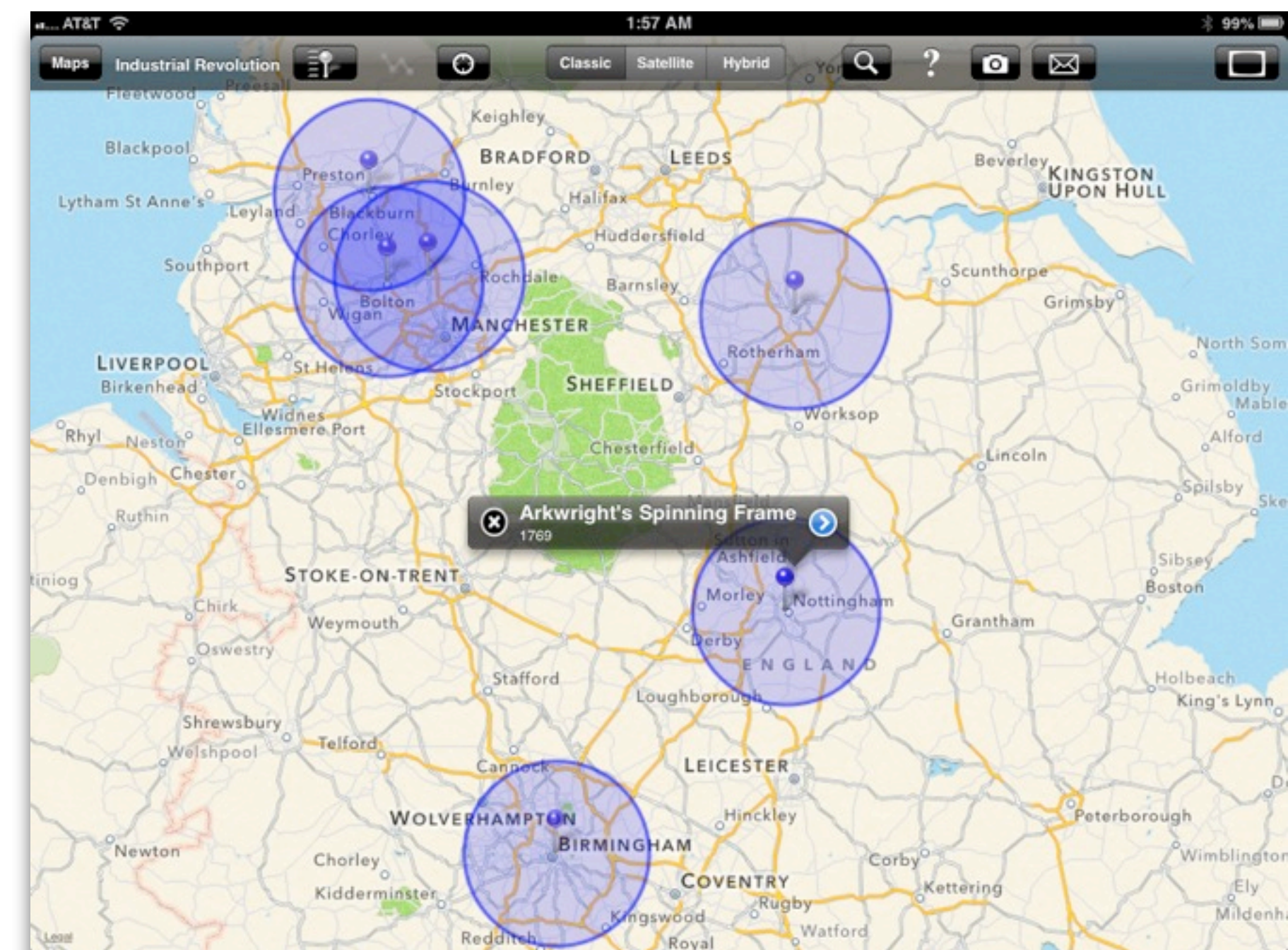
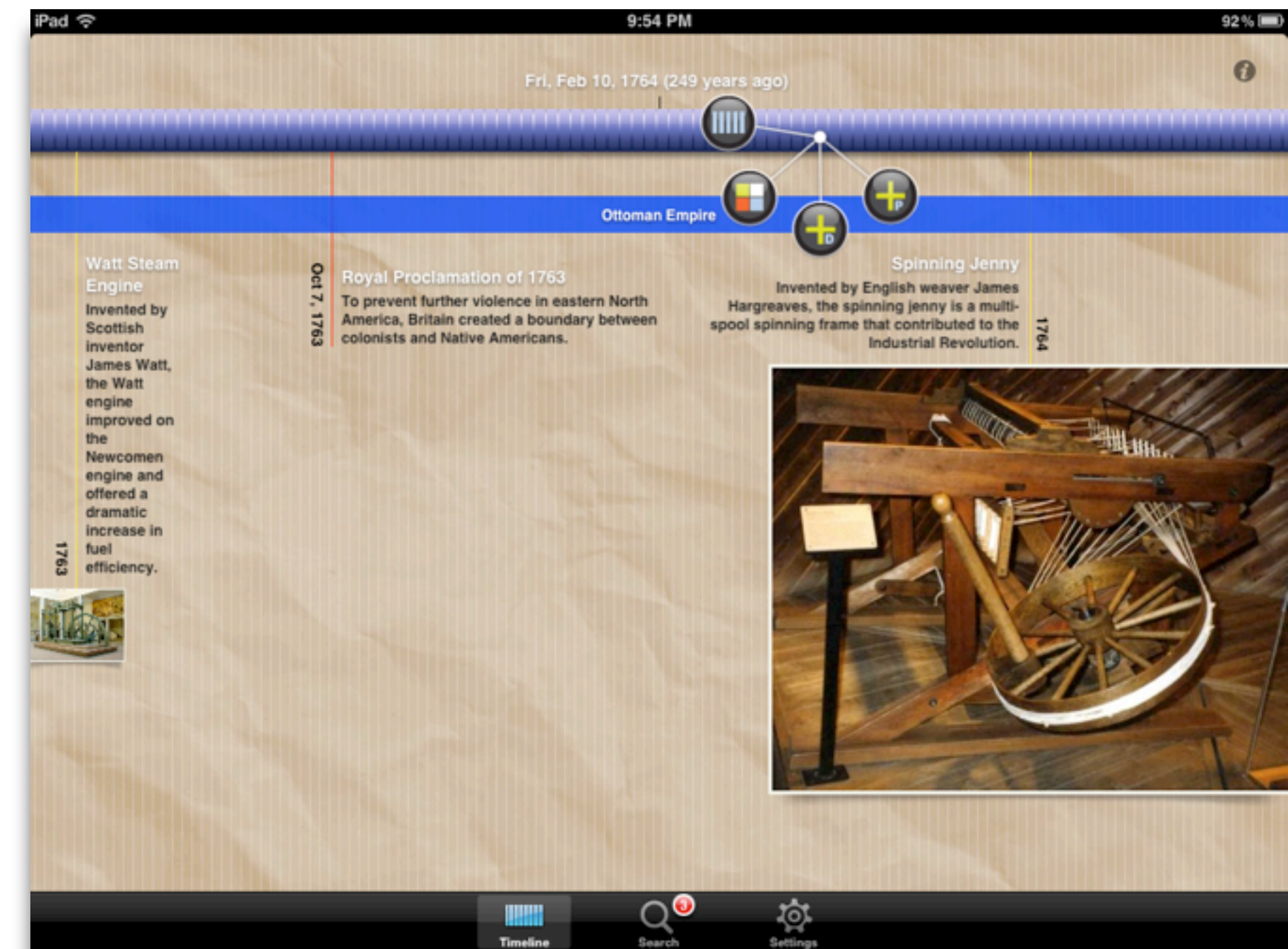
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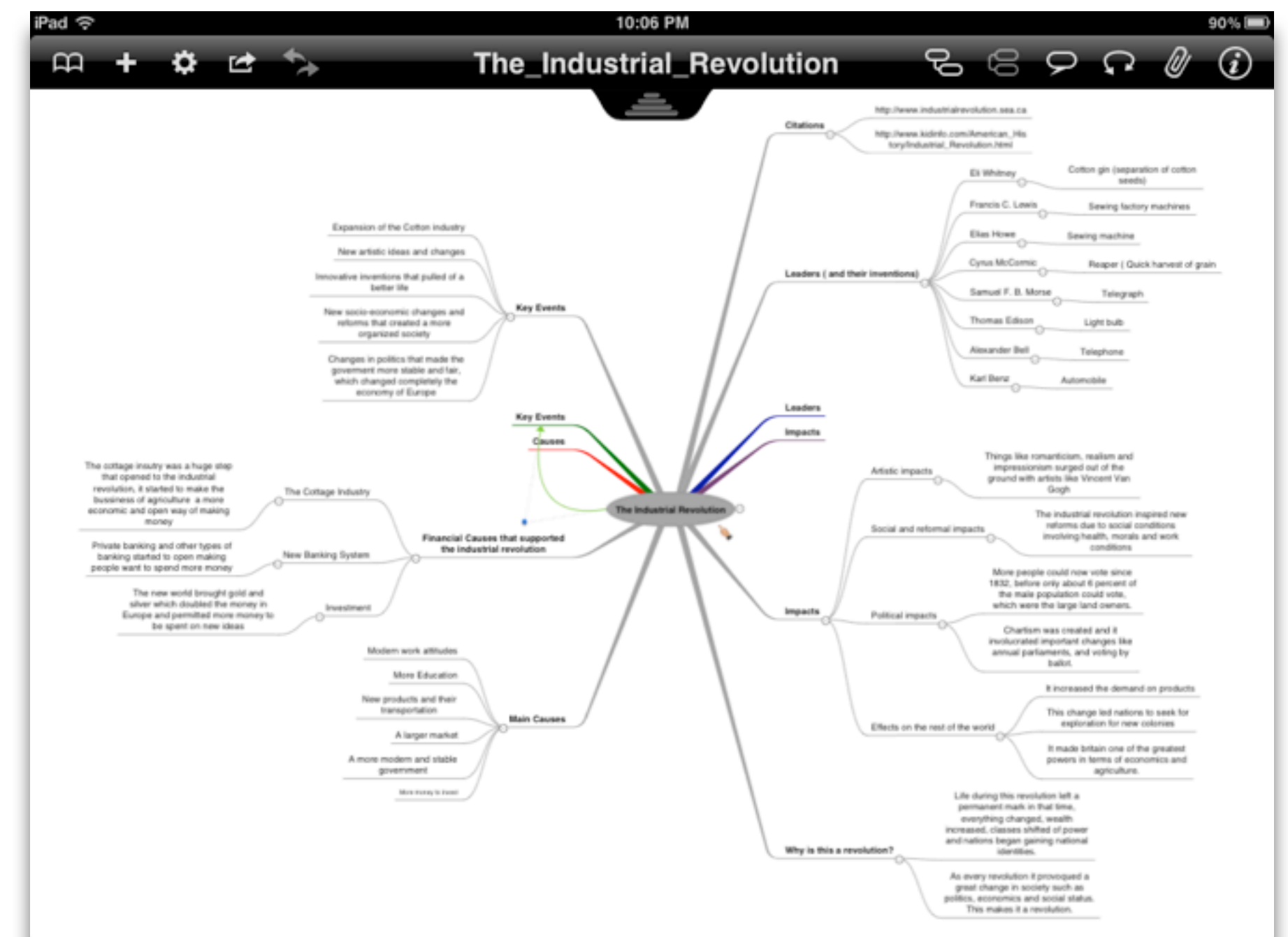
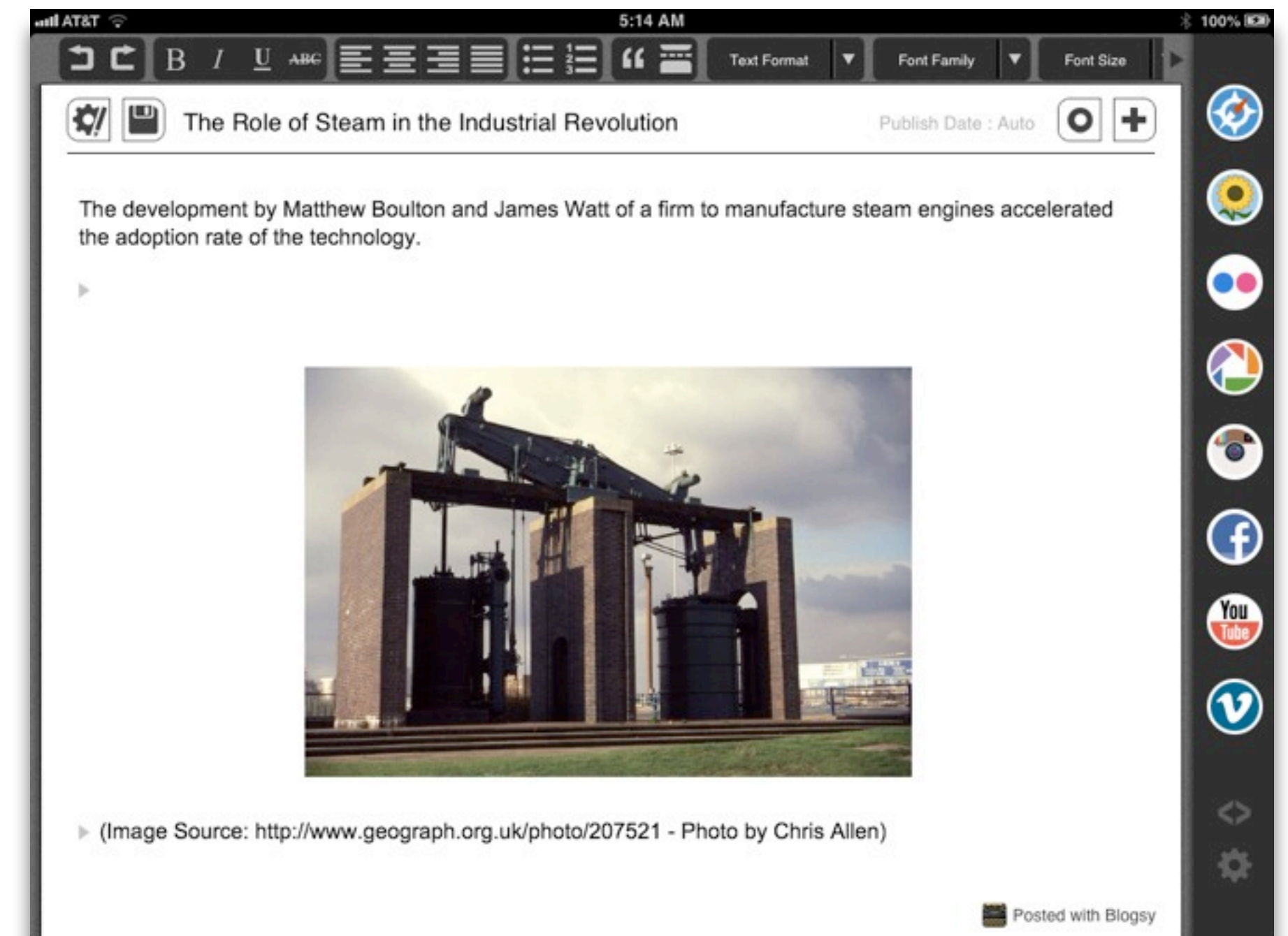
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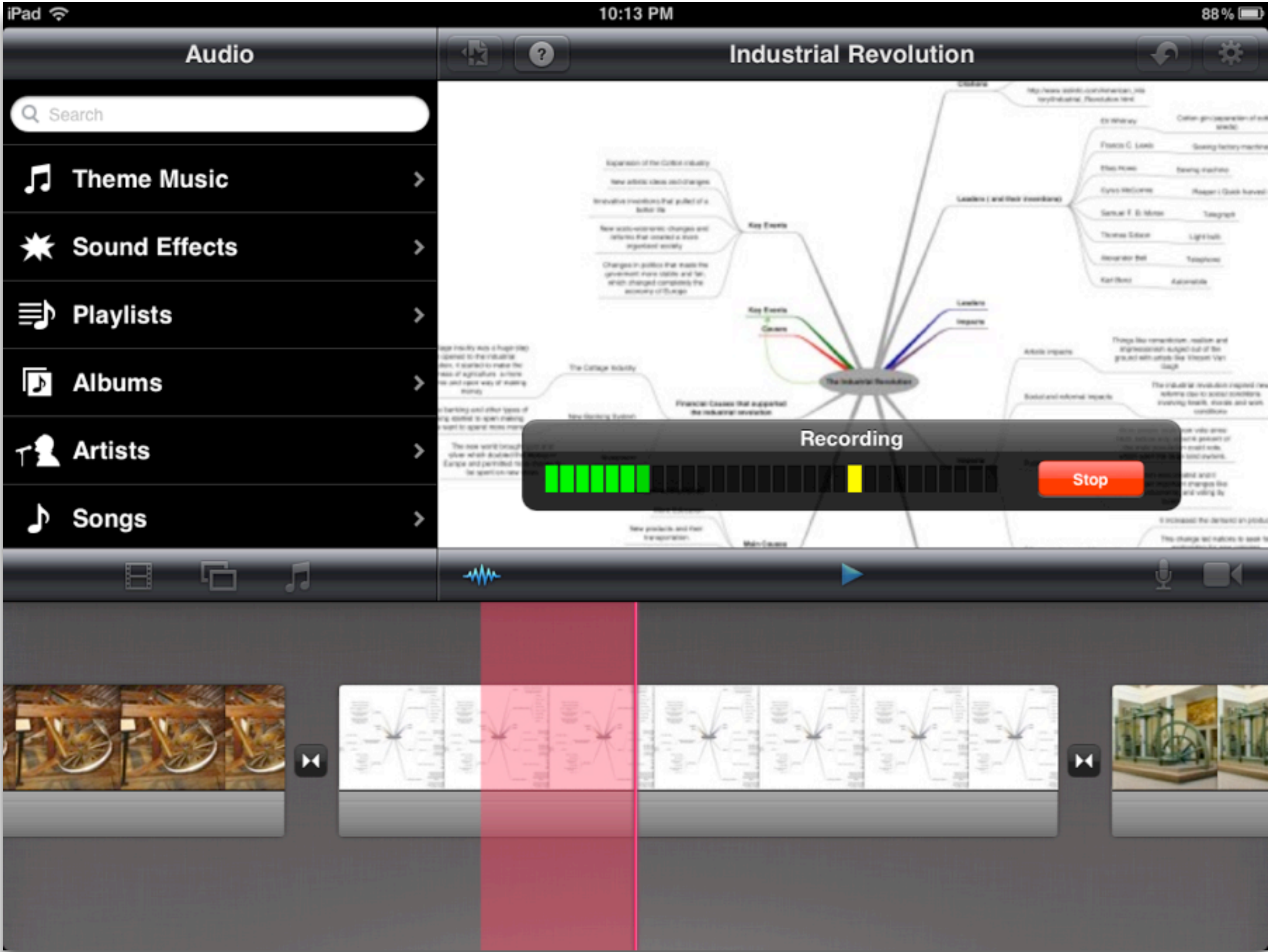
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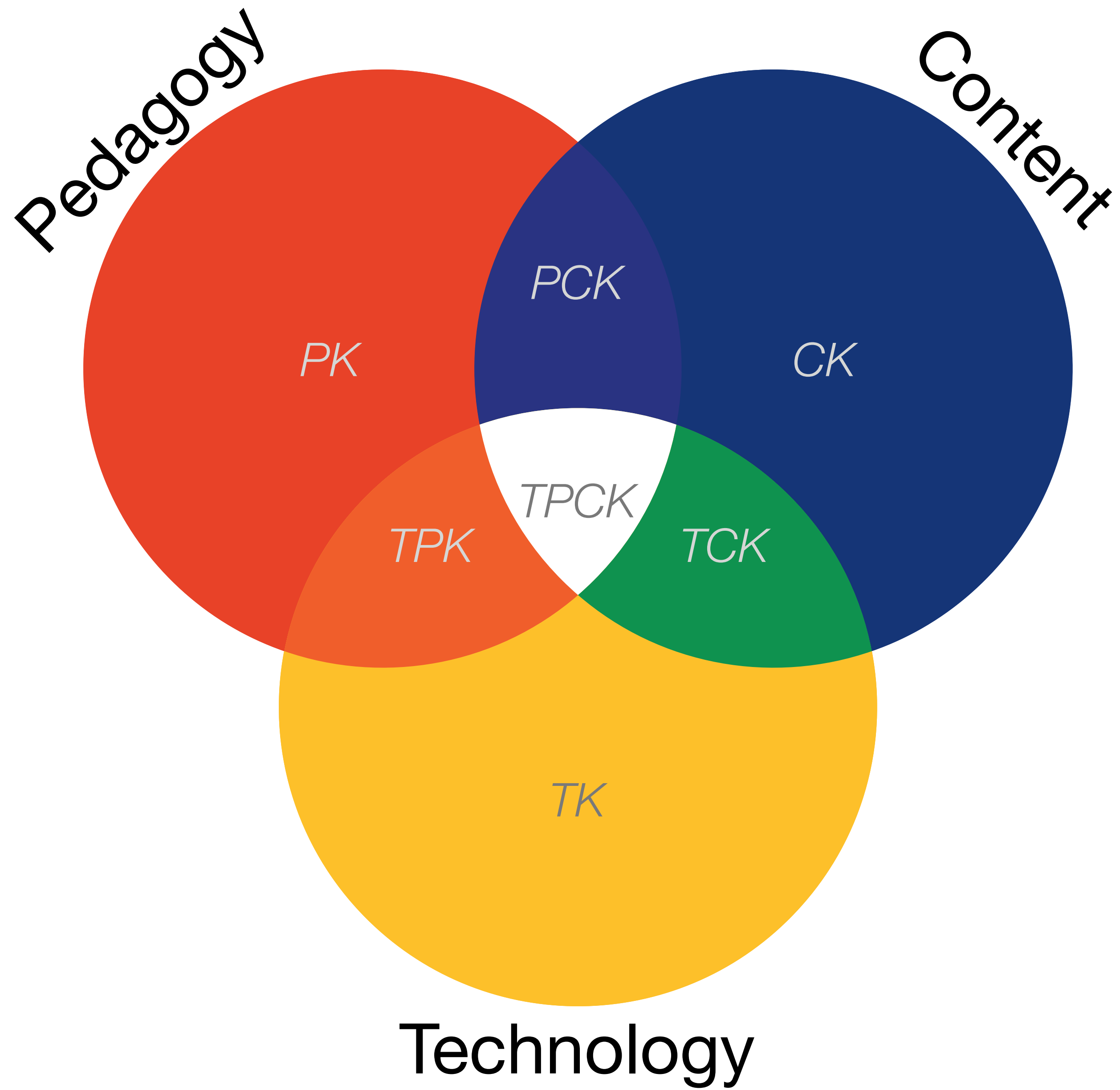
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# Substitution






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





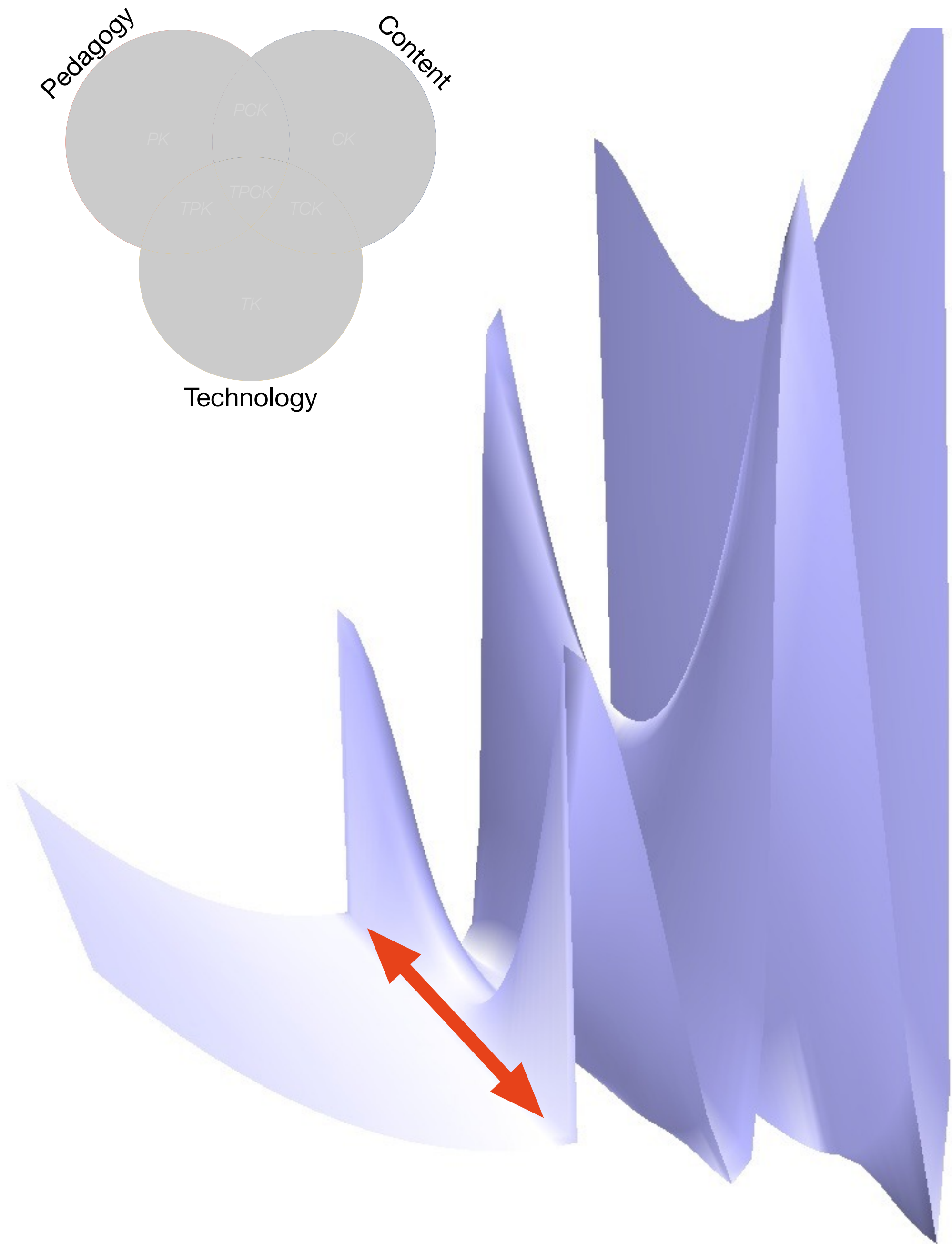


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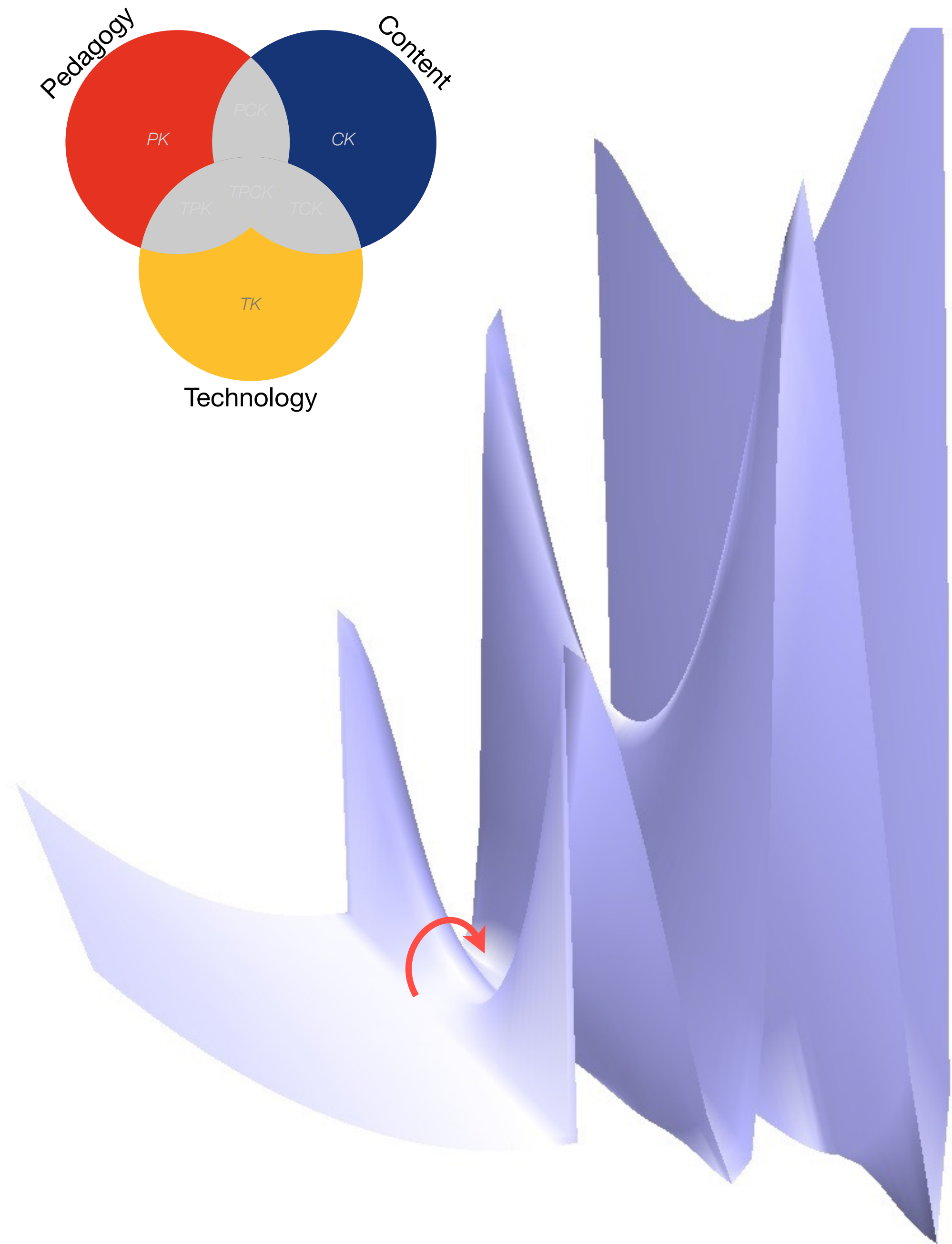


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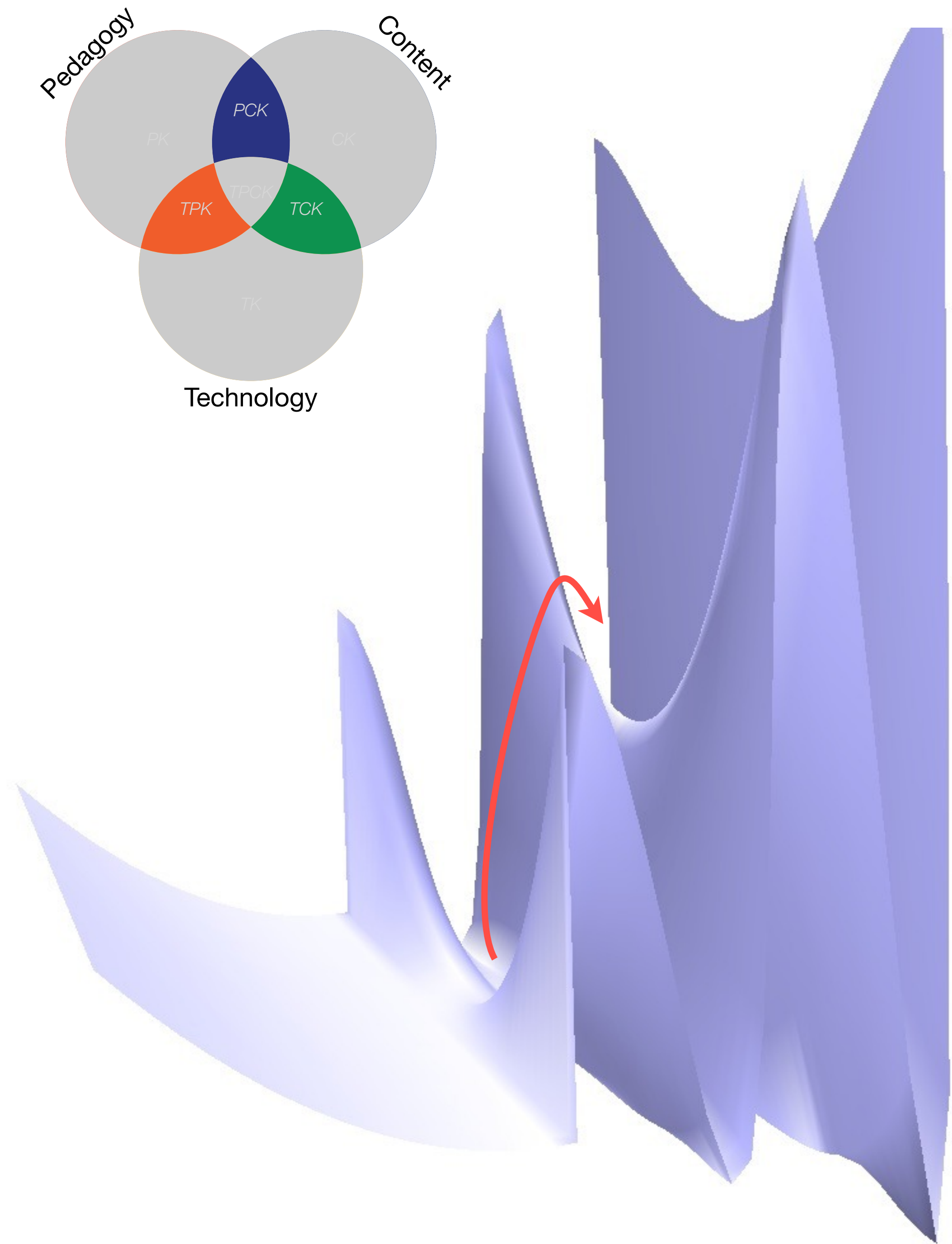


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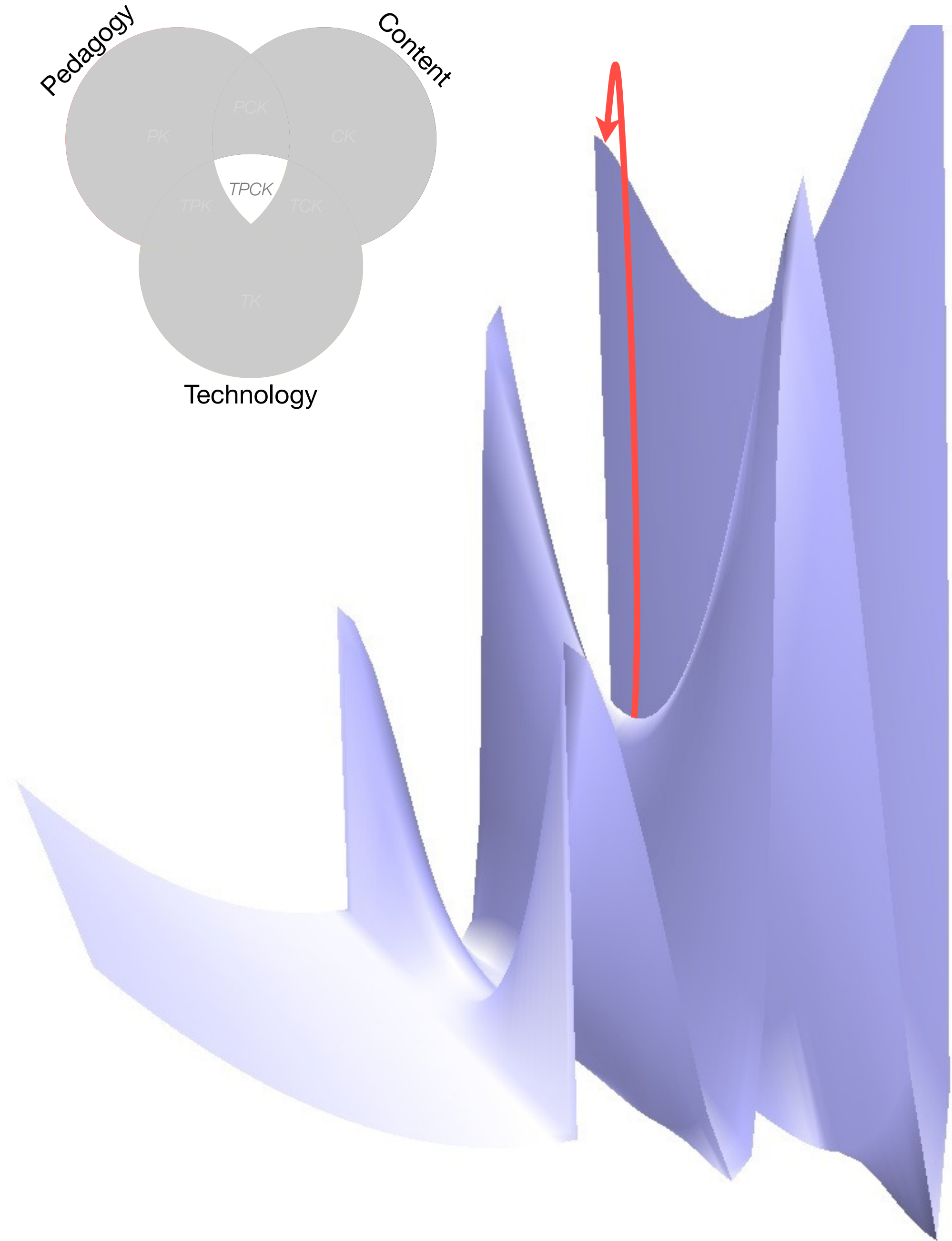


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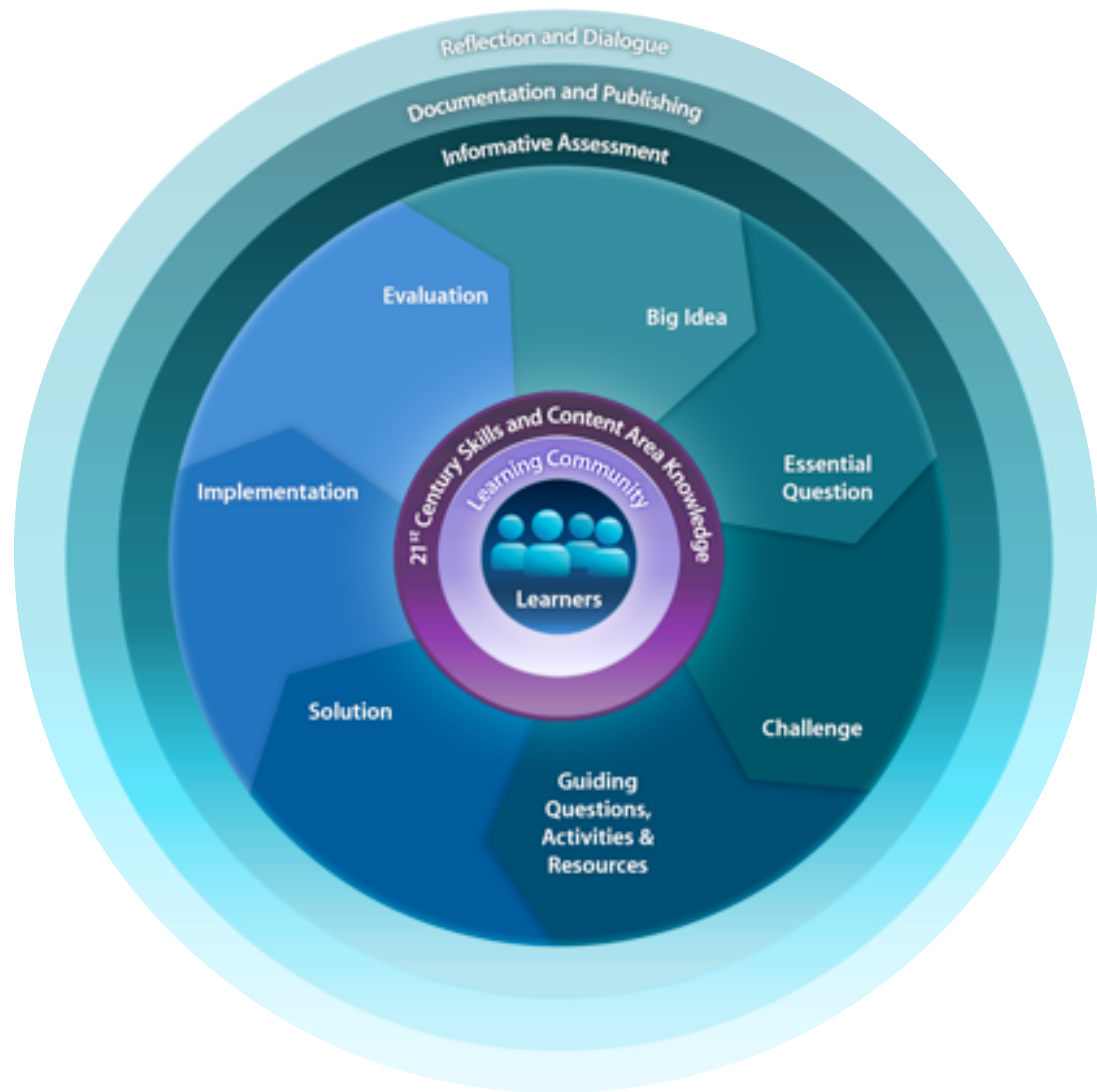
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Study	SAMR Classification	Description	Effect Size
<b>Algebra I</b> <i>Effectiveness of Cognitive Tutor Algebra I at Scale</i> , by John F. Pane, Beth Ann Griffin, Daniel F. McCaffrey, Rita Karam	<b>S to A</b>	<b>S:</b> Computerized algebra drills, some tied to real-world scenarios <b>A:</b> Tools for basic visualization; adaptive response to student progress	<b>≈ 0.2</b> 50th perc. → 58th perc.
<b>Earth Science</b> <i>Using Laptops to Facilitate Middle School Science Learning: The Results of Hard Fun</i> , by Alexis M. Berry, Sarah E. Wintle	<b>A to M</b>	<b>A:</b> Interactive tools for concept exploration and visualization <b>M:</b> Narrated animation as final project	<b>≈ 0.6</b> 50th perc. → 73rd perc. (≈ 1.4 a month later) (50th perc. → 92nd perc.)





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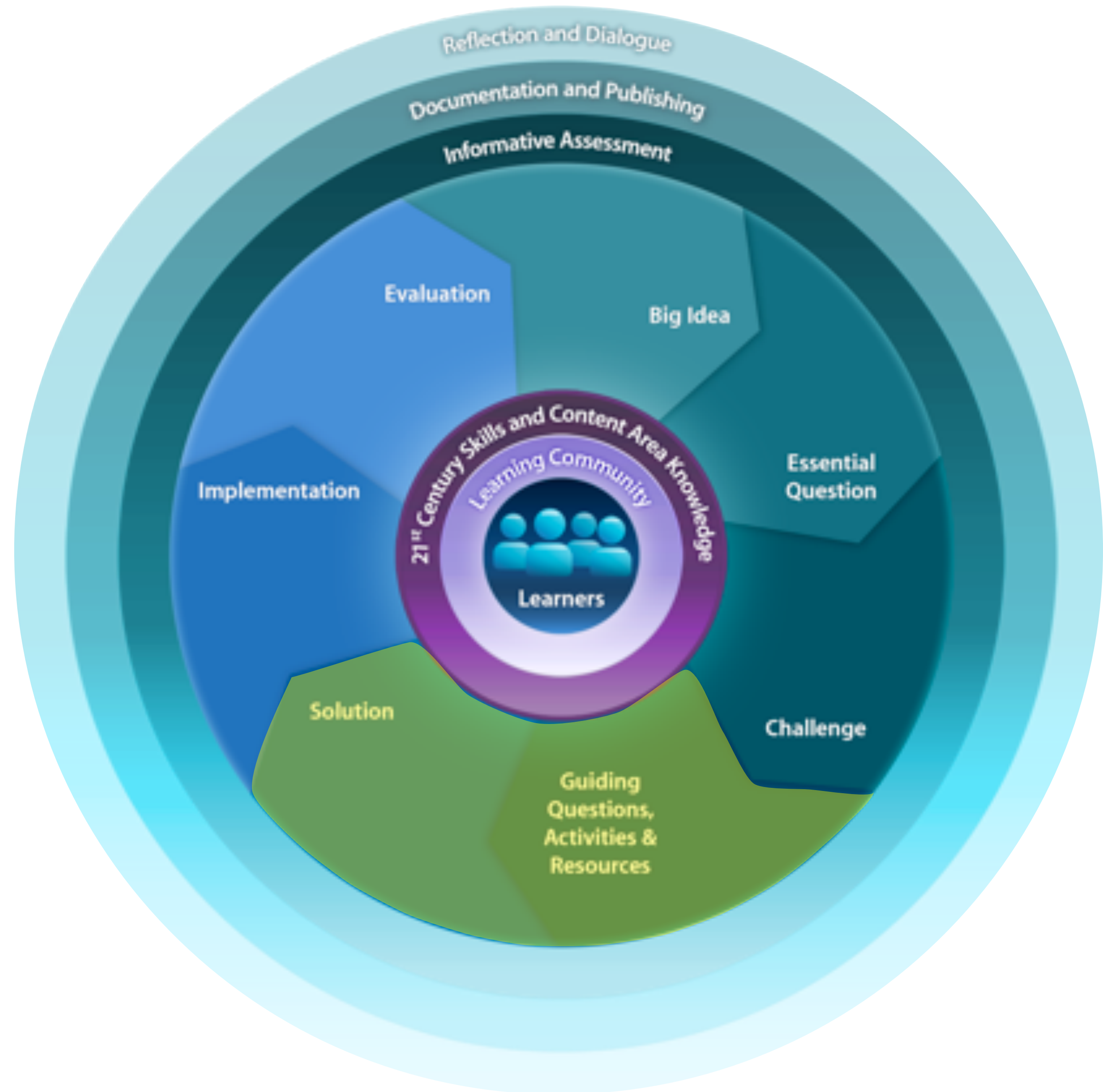
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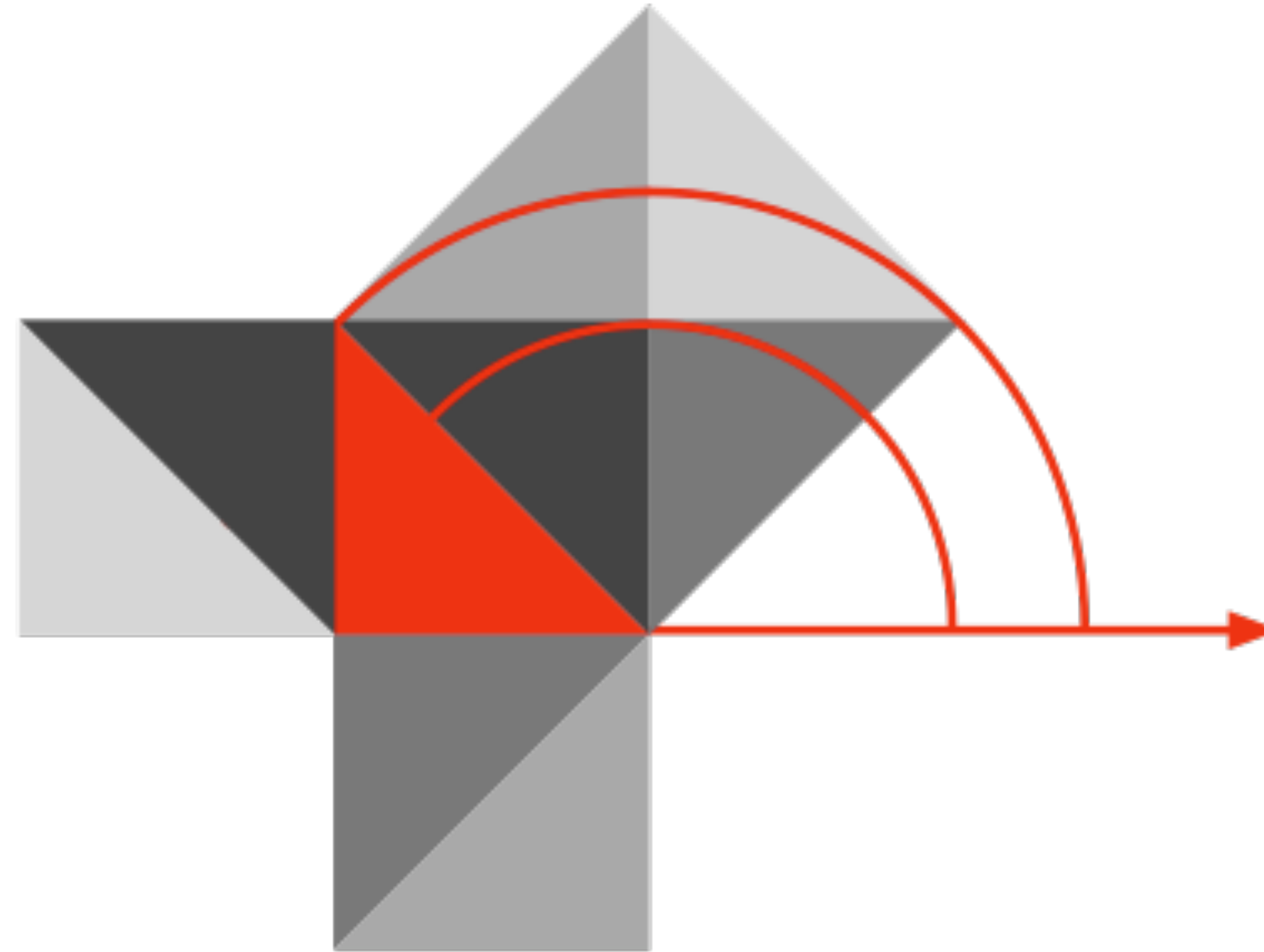
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# Hippasus

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