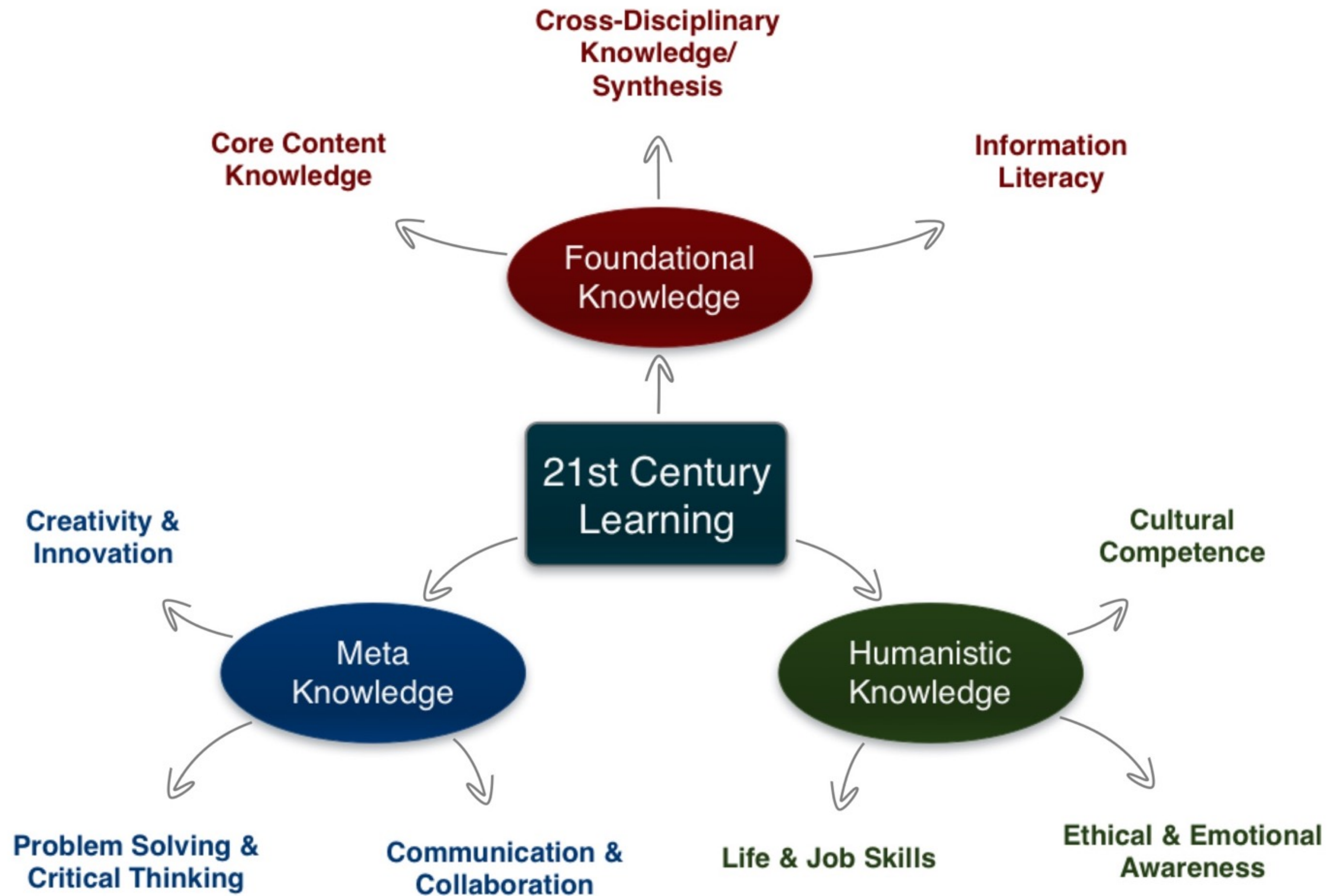


# Education Leadership and the 21st Century Context

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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*

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### **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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The screenshot shows the MIT OpenCourseWare website interface. At the top, there's a navigation bar with 'MIT OPEN COURSEWARE' and 'MASSACHUSETTS INSTITUTE OF TECHNOLOGY'. Below this is a search bar and a 'Donate Now' button. The main content area is titled 'System Dynamics Self Study'. It includes a sidebar with links to 'COURSE HOME', 'SYLLABUS', 'READINGS', 'ASSIGNMENTS', and 'DOWNLOAD COURSE MATERIALS'. The main content features a graph showing 'Heroin stock', 'Price', 'Number of drug busts', and 'Revenue-raising crime' over time. To the right of the graph, there's a section for 'Instructor(s)' (Prof. Jay Forrester), 'MIT Course Number' (15.988), 'As Taught In' (Fall 1998 - Spring 1999), and 'Level' (Undergraduate / Graduate). There's also a 'CITE THIS COURSE' button. On the far right, there's a 'Discover, Learn, Support OCW' section with a grid of course thumbnails and a 'Find out how' link.

The screenshot shows a video player interface. The video content is titled '4.1 The Unperturbed Carbon Cycle: Stocks and Flows'. It features a diagram of the carbon cycle with labels for 'Atmosphere (830)', 'Photosynthesis', 'Plant respiration', 'Plant biomass (550)', 'Net terrestrial uptake 3', 'Soil carbon', 'Microbial respiration and decomposition', and 'Soil (2300)'. To the right of the diagram, there are two chemical equations: 'Photosynthesis: Solar Energy + CO<sub>2</sub> + H<sub>2</sub>O + nutrients → CH<sub>2</sub>O + O<sub>2</sub>' and 'Respiration & Decay: CH<sub>2</sub>O + O<sub>2</sub> → Energy + CO<sub>2</sub> + H<sub>2</sub>O + nutrients'. The video player has a progress bar at the bottom showing 3:15 / 10:12.



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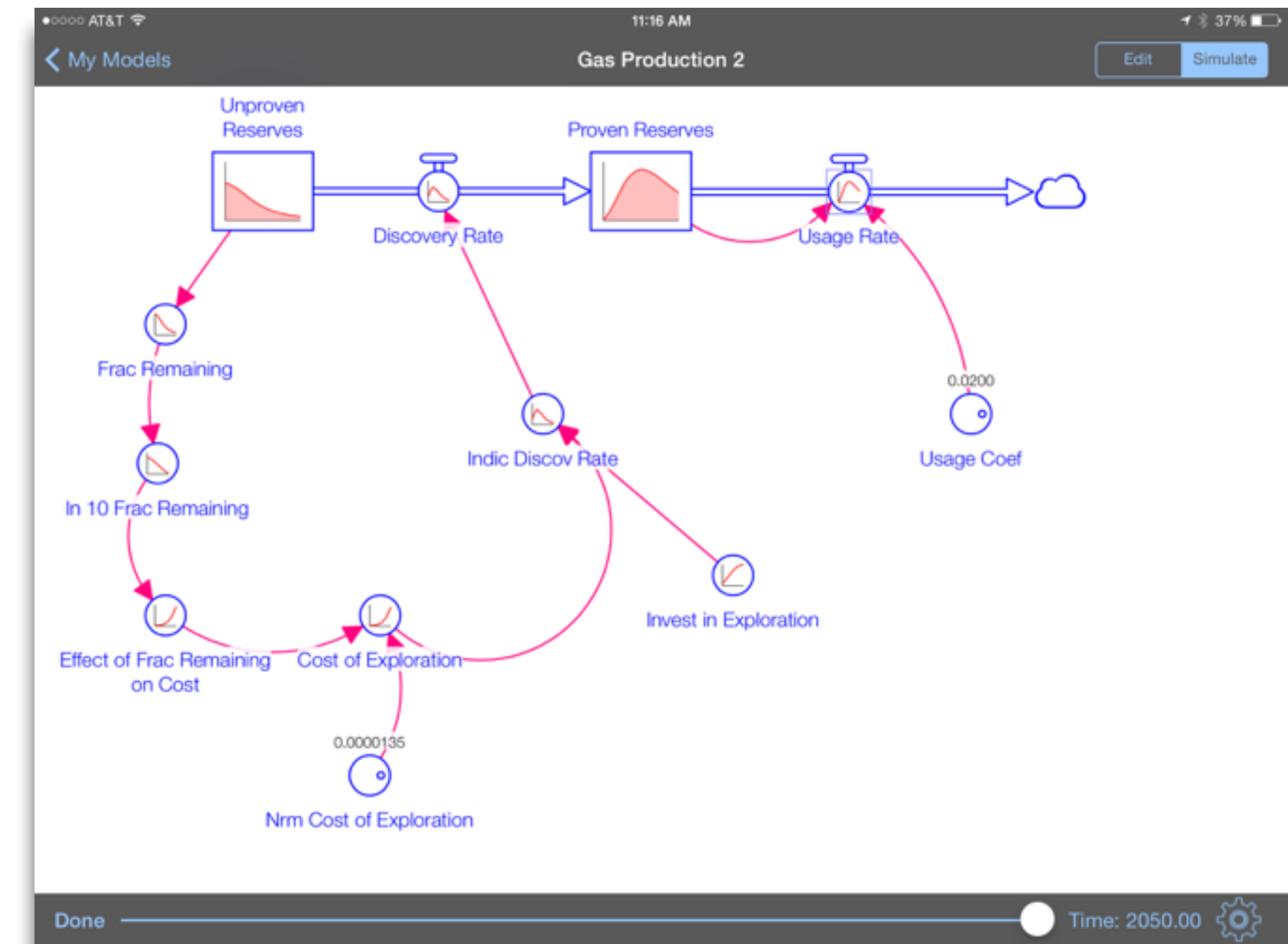
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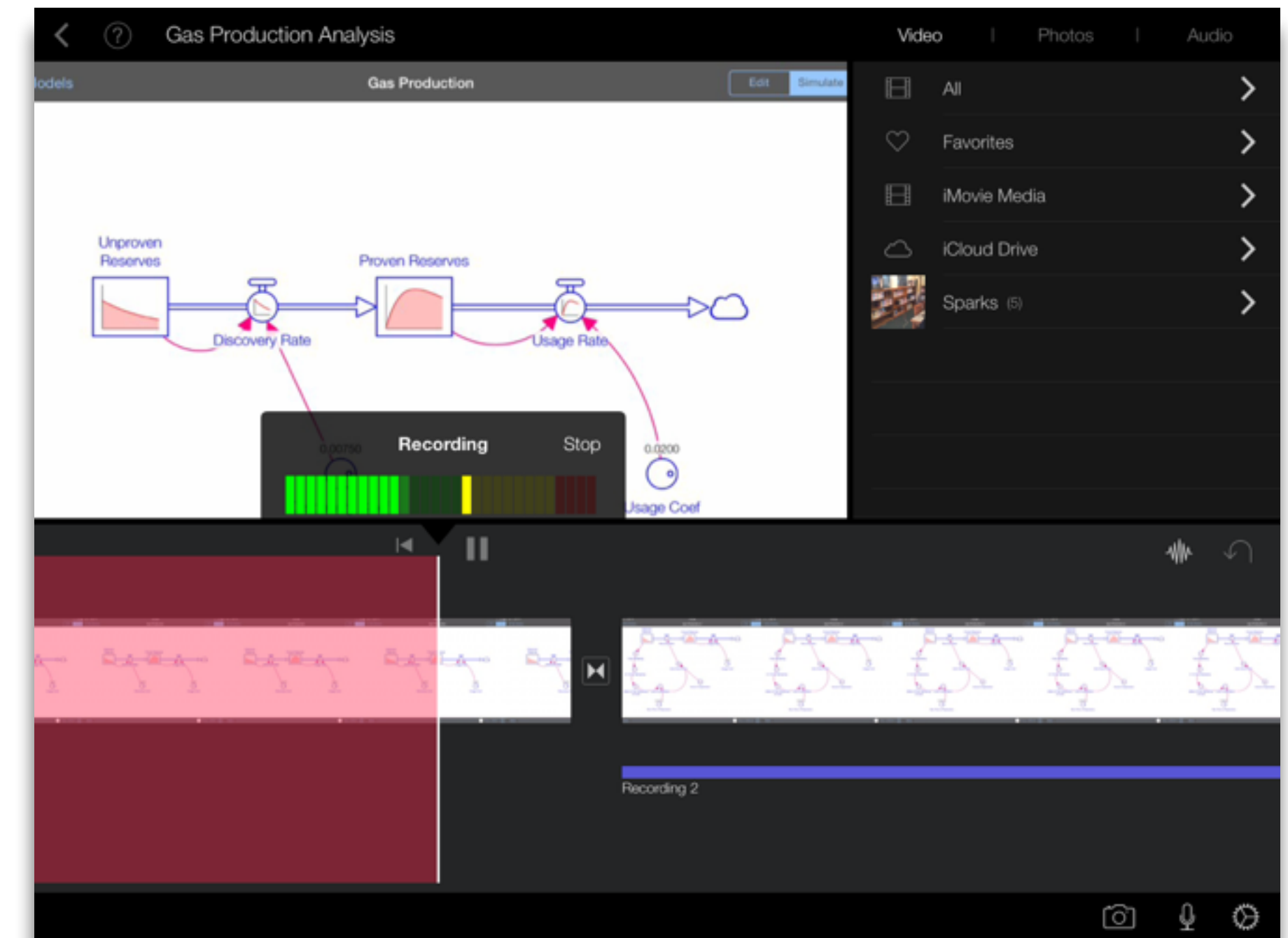
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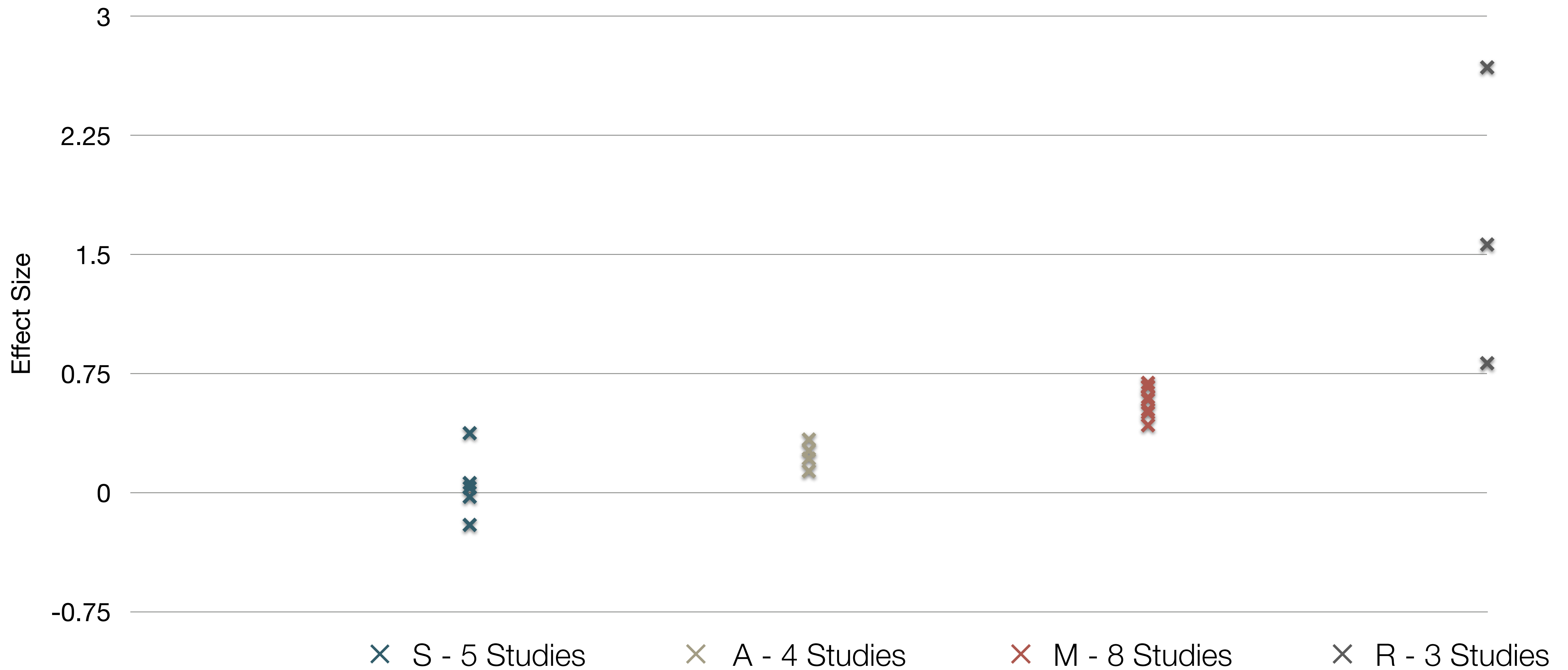
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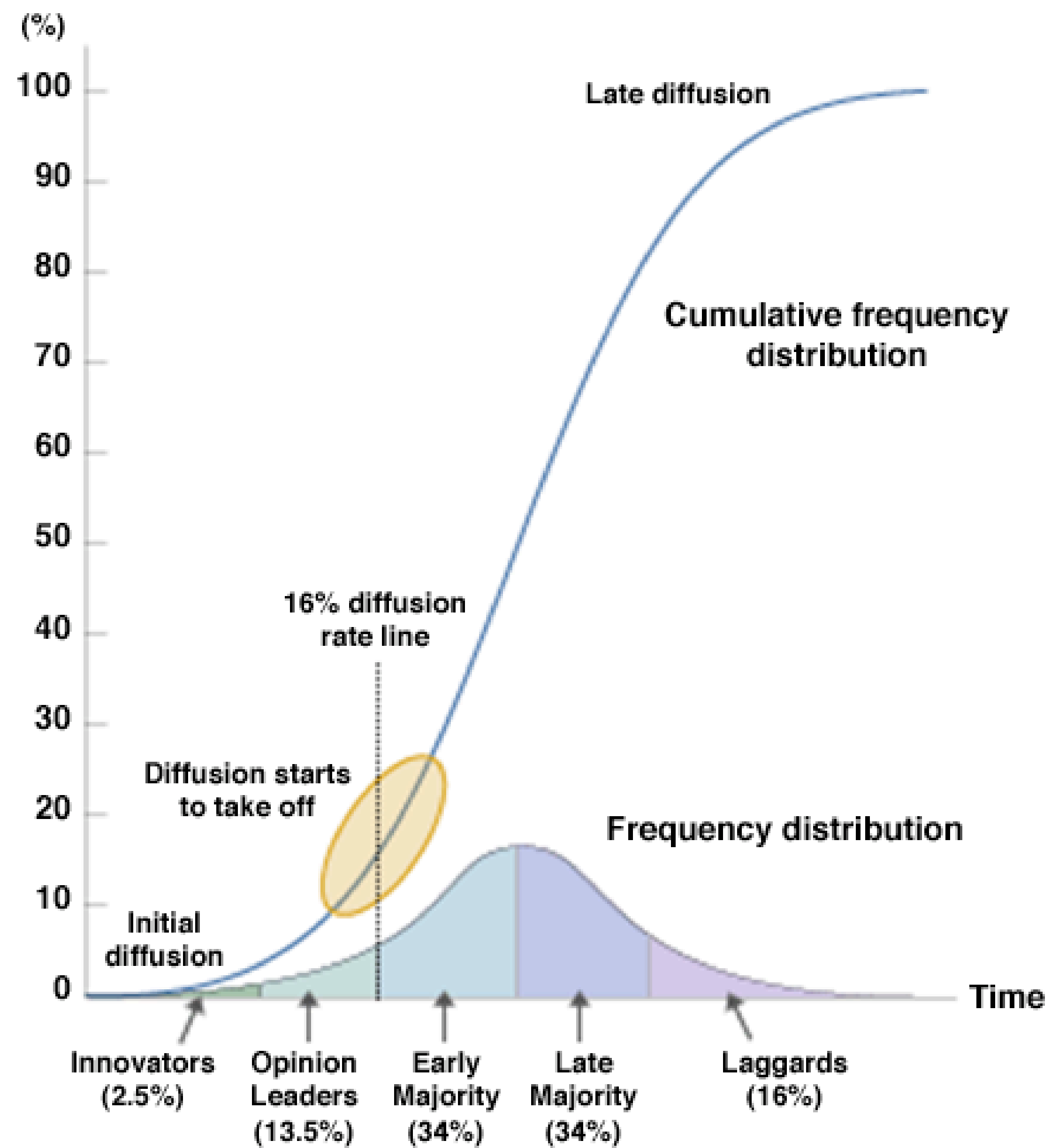
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Horizon Report > 2014 K-12 Edition



Key Trends Driving Ed Tech Adoption	
Fast (1-2 yrs.)	Rethinking the Roles of Teachers Shift to Deeper Learning Approaches
Mid-Range (3-5 yrs.)	Increasing Focus on OER Increasing Use of Hybrid Learning Designs
Long-Range (5+ yrs.)	Rapid Acceleration of Intuitive Technology Rethinking How Schools Work

Important Ed Tech Developments	
Adoption: 1 yr. or less	BYOD Cloud Computing
Adoption: 2-3 yrs.	Games and Gamification Learning Analytics
Adoption: 4-5 yrs.	The Internet of Things Wearable Technology

Significant Challenges Impeding Ed Tech Adoption		
Solvable <i>understand and know how to solve</i>	Difficult <i>understand but solutions are elusive</i>	Wicked <i>complex to define, much less address</i>
Authentic Learning Opportunities Integrating Personalized Learning	Complex Thinking & Communication Safety of Student Data	Competition from New Models of Ed Keeping Formal Education Relevant



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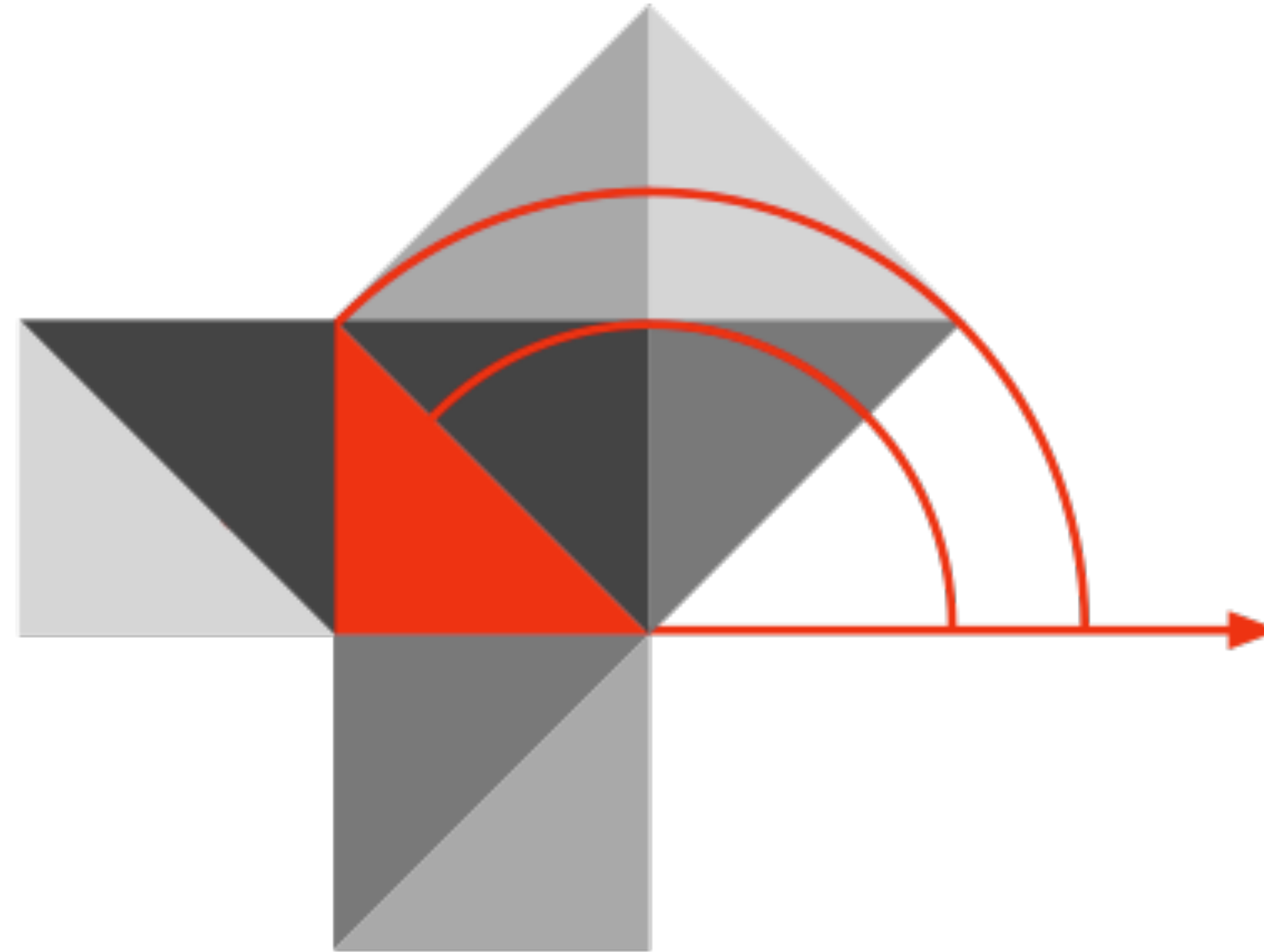
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# Hippasus

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