


新北市109年度國中小科技輔助自主學習實施計畫

「教育雲」創新教案設計

服務學校	新北市板橋區文德國小	設計者	陳秀樺
領域/科目	英語領域	實施年級	六年級
單元名稱	How do you go to school?	總節數	共三節·120分鐘
行動載具 作業系統	□Android 系統 □Chrome 系統 □iOS 系統 ■Windows 系統		
設計依據			
學習 重點	學習 表現	<p>【語言能力】</p> <p>【◎1-III-6】 能聽懂課堂中所學的字詞。</p> <p>【◎1-III-9】 能聽懂簡易句型的句子。</p> <p>【2-III-7】 能作簡易的回答和描述。</p> <p>【◎3-III-1】 能辨識課堂中所學的字詞。</p> <p>【學習態度方法及策略】</p> <p>【◎6-III-2】樂於參與課堂中各類練習活動，不畏犯錯。</p> <p>【文化理解】</p> <p>【8-III-4】 能了解外國風土民情。</p> <p>【邏輯思考判斷及創造力】</p> <p>【◎9-III-1】 能夠將所學字詞做簡易歸類。</p>	核心 素養
	學習 內容	<p>【語言知識】</p> <p>【Ac-III-4】國小階段所學字詞（能聽讀說30字詞，必須拼寫180字詞）。</p> <p>【Ad-III-2】簡易、常用的句型結構。</p> <p>【溝通功能】</p> <p>【B-III-2】國小階段所學字詞及句型的生活溝通。</p>	
議題 融入	實質 內涵	國 E1 了解我國與世界其他國家的文化特質。	
	融入 學習 重點	學生能藉由繪本 <i>This is the way we go to school</i> ，理解世界各國學生擁有不同地理環境與人文變化，所搭乘的交通工具隨之相異。	

教材來源	翰林版 Dino on the go 7 第二單元 How do you go to school?
教學設備/ 資源	硬體設備：Surface 電腦 27台、單槍、喇叭、互動式電子白板
使用軟體、 數位資源或 APP 內容	軟體 app&網站： Whiteboardfi  Wordwall  Teams  Seesaw  Padlet  COOL ENGLISH  Cospace 

課程設計架構圖

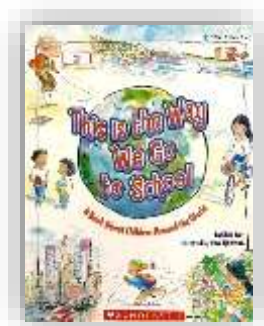


具體學習目標

1. 從創作設計作品能提升學習英語文的興趣，培養積極的學習態度。
2. 能自主建構有效的英語文學習方法，強化自學能力，奠定持續學習的基礎。
3. 學生能夠完成各學習站任務：
 - (1)能聽辨交通工具並且能以Whiteboard.fi繪製正確的圖案。
 - (2)能使用wordwall拼寫本單元字詞 (ex.scooter)，精熟後能使用cool English作自主探索學習。
 - (3)能操作wordwall並熟練本單元應用句型 How do you go to school? I go to school by car. 以及 Does he/she go to school by boat? Yes, he/she does. He/She goes to school by boat. Does he/she go to school by taxi? No, he/ she doesn't. He/She goes to school by bike.
 - (4)運用「Google 圖片」搜尋交通工具圖並錄製對話，上傳到Seesaw。
 - (5)設計虛擬人物及對話應用於Cospace中。
 - (6)簡介自己的虛擬世界，並觀看同學的虛擬世界，並使用Padlet互評。

How do you go to school 教學活動設計

教學活動內容及實施方式	時間	使用軟體、數位資源或 APP 內容及素養導向評量
<p style="text-align: center;">【第一節】</p> <p>● 引起動機Warm-Up</p> <p>1. 教師進行提問「Ask a friend this Question. How do you go to school?」學生進行一對一的訪問、使用Whiteboard.fi寫下答案及分享。(Questioning)「How does the other students in the world go to school?」(Predicting)「How do you know about it?」教師進一步拋出問題，學生進行分組討論及分享。</p> <p>2. 學生使用Google網站查詢，並使用教育雲登入於Padlet，上傳搜尋到的圖片、文字或網頁、影片，並比較之前想像的跟現在查到資料的差異。</p> <p>3. 教師巡視行間，視需要給予指導與協助。</p> <p>4. 教師請各組至台上分享，並引導學生讀出單字。</p> <p>● 發展活動Presentation & Practice</p> <p>Wordwall – transportation practices</p> <p>1. 學生使用教育雲登入Microsoft Teams平台，透過團隊連結進入Wordwall練習單字拼寫。</p> <p>2. 學生須進行自我練習任務直至達成任務指定時間及答對題數，精熟組學生可以挑戰最短作答時間為目標進行練習。</p> <p>● 統整與總結Reinforcement & Wrap-Up</p> <p>1. 教師請學生同時開始進行任務並計算所花秒數，激勵所有學生挑戰自我。</p>	<p>12'</p> <p>15'</p> <p>10'</p> <p>3'</p>	<p>Whiteboardfi  ★Oral assessment 學生能以適當英語回應並且能拼寫出正確的英文交通工具語詞</p> <p>Padlet  ★Real assessment 學生實作並能互學、比較、最後分享自己及他人作品。</p> <p>Wordwall  ★IRS assessment 學生能正確配對並拼出單字正確位置</p>
<p style="text-align: center;">【第二節】</p> <p>● 引起動機Warm-Up</p> <p>● Countries and transportation (融入國際教育議題)</p> <p>1. 教師介紹繪本This is how we go to school，請小組成員依圖片提式猜測學生的交通工具以及學生來自何國？</p> <p>2. 教師將How does he/ she go to school? 句型帶入，學生使用Wordwall複習此本繪本中所提到的交通工具並進行積分競賽，使學生達成精熟，學生將任務達成的結果截圖，利用Microsoft Teams平台貼上任務完成的憑證回報給教師。</p> <p>● 發展活動Presentation & Practice</p> <p>1. 教師展示Seesaw Choice board的使用方式，請學生搜尋圖片，請學生搜集完畢後錄音，用drawing功能上傳作品至作業區。</p>	<p>15'</p> <p>15'</p>	<p>Wordwall  ★IRS assessment 學生能理解句型並且能找出正確句型克漏字解答</p> <p>Teams  ★Real assessment 學生於時限內完成任務並貼截圖</p> <p>Seesaw  ★Oral assessment 學生實作並能練習口語的正確性</p>



2. 學生使用**教育雲**登入Seesaw，將圖片結合口語錄音後，可結合繪圖自行操作，創作獨特的Choice board。

● **統整與總結Reinforcement & Wrap-Up**

1. 學生使用Padlet將自己的作品放上去，其他人可以在評論區留言並且給予星等。
2. 教師引導學生以正向語言給予建議及回饋。

【第三節】

● **引起動機Warm-Up**

1. 教師請學生使用**教育雲**登入Cool English平台，觀看課程動畫後，完成聽力指定任務，隨即進行字彙精熟任務(皆為限時任務，學生未完成可回家自行完成。)
2. 教師將Does he/she go to school by car? Yes, he/she does. No, he/she doesn't. 句型帶入後，請學生使用左右手分辨Wh Questions & Yes/No Questions.
3. 請學生由**教育雲**登入Cospace，利用互動空間創造第三人稱，並且將已學會的交通工具融入虛擬人物或動物對話之中。
4. 已編輯完成對話的學生可利用Cospace內建編碼程序，進行動作coding的編輯及細部修飾。

● **統整與總結Reinforcement & Wrap-Up**

1. 學生互相參閱同學創作的Cospace虛擬世界，並將最喜歡的三個作品拍照放上Padlet，並給予星等及評語。
2. 教師引導學生以正向語言給予建議及回饋。

10'

Padlet



★ self-evaluation
學生互評，可以相互欣賞並給予正向回饋

10'

COOL ENGLISH

★ Real assessment
學生實作完成閱讀及聽力任務
★ Oral assessment
學生口語表達

3'

Cospace



★ Real assessment
學生創作出不同的虛擬世界，並結合英語對話。

20'

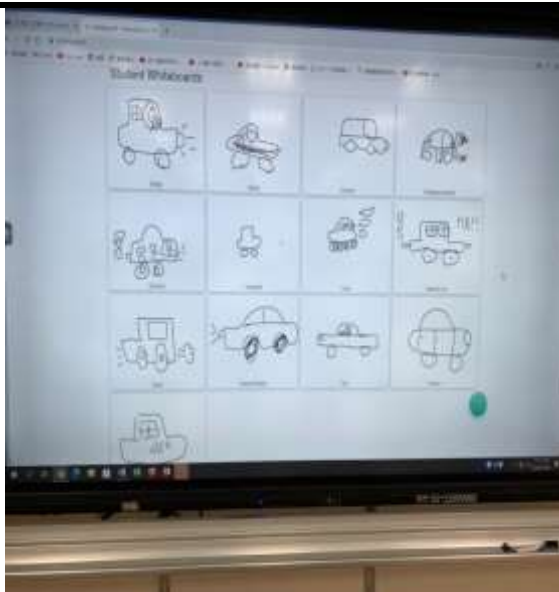
7'

Padlet



★ self-evaluation
學生互評，可以相互欣賞並給予正向回饋

教學歷程



說明: 學生分組創作以 Whiteboard. fi 繪製後於智慧白板呈現各國交通工具。



說明: 學生端以 Whiteboard. fi 繪製各國學生上學方式。



說明：學生以 Wordwall 進行拼字及句型練習，同時登錄任務結果。



說明：學生使用 Seesaw 將登錄至 Teams 的任務結果上傳作業區。



說明：學生利用 Google 圖片搜尋，並上傳圖片至 Seesaw 加上口語錄音。



說明：學生使用 Seesaw Choice board 將口語錄音用 drawing 功能上傳至作業區。



說明：學生使用 Padlet 搜尋交通工具，呈現於智慧白板上。



說明：學生端使用 Padlet 進行互相檢視並且修正句子的現況。

教學歷程



說明：學生使用 Cool English 觀看聽力及閱讀動畫內容。



說明：學生使用 Cool English 進行聽力及閱讀測驗。



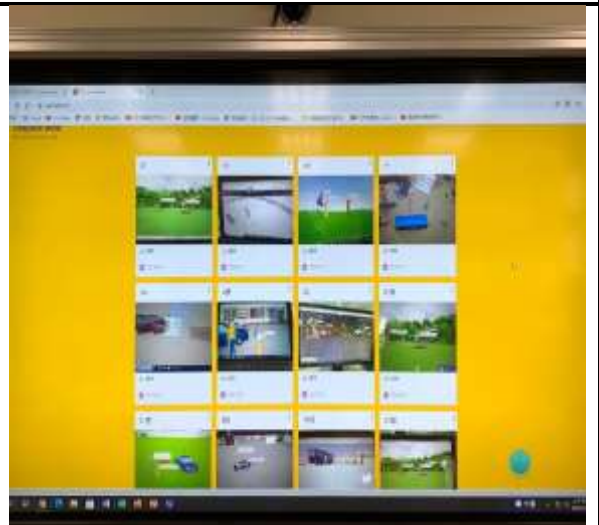
說明：學生端呈現 Cool English 檢測歷程與結果。



說明：教師訓練資訊種子學生用 Cospace 的功能及基礎操作，以便同儕互學。



說明：學生使用 Cospace 進行虛擬世界與人物設計並呈現正確的交通工具與對話。



說明：學生端使用 Padlet 進行互評的現況，以及相互介紹虛擬作品。

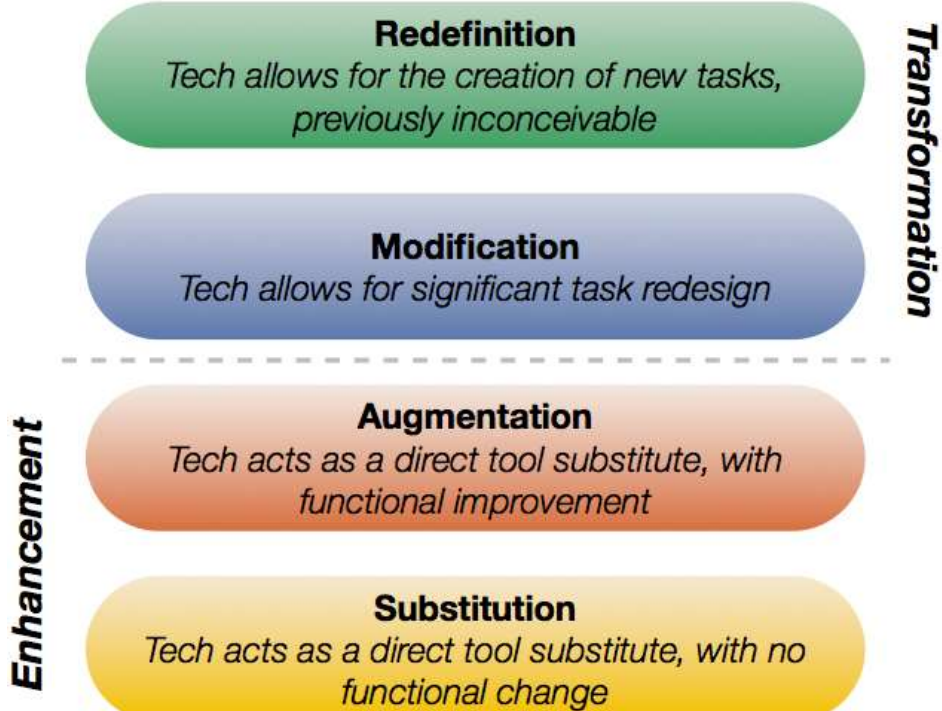


說明：學生虛擬世界作品展示1。



說明：學生虛擬世界作品展示2。

教學心得與省思



本課程根據 Ruben Puentedura 提出 SAMR 模型來評估科技工具的應用價值四個層面進行思考，分別是替代 (Substitution)、改善 (Augmentation)、重新設計 (Modification) 及、重新創造 (Redefinition)。對應於 Bloom 的認知技能，越高層級就越接近高層次思考及創作。

課程中使用 Wordwall 提供學生個體練習及精熟，相當於替代 (Substitution)，Whiteboard.fi 進行學生相互的溝通與口語應用相當於改善 (Augmentation)，使用 Padlet 進行團體與個人的資訊共享與互評相當於改善 (Augmentation)，而當學生精熟後，使用 Cool English 增加學習廣度及深度相當於重新設計 (Modification)，並提供自學的空間，最後學生用 Cospace 進行創作相當於重新設計 (Redefinition)，除針對學生的認知歷程有高層次的運用外，更重視及促使學生間正向回饋的產生，促使素養導向學習歷程。

本課程尤注重學生運用行動載具的正向學習體驗，雖新世代學童處於科技日新月異的世界，但並非每位學生對於行動載具都能迅速上手，也因此教師的引導與各組的資訊種子成員更顯重要，藉由同儕間互助，讓每位學生都能暢遊於虛擬平台中，享受自學的樂趣。

	<p>國小學童普遍對各國文化了解不深，因此透過網路搜尋資料以及同儕間的分 享，讓他國事務對於學生而言不再是個虛幻的概念，進而提升學生國際觀，此外，教師也在資料搜尋的過程中帶入媒體識讀的概念，培養學生對於所見資訊的批判思考能力。</p> <p>過往傳統課程較缺乏學生對於英語使用的真實情境模擬，本課程著力於學生在真實語境中實踐所學，實作發揮創意之餘也替未來現實生活使用鋪路，盼未來課程可加入學生與英語人士的真實互動機會，達成溝通無國界的美好願景。</p> <p>課程中我們觀察學生在使用行動載具的學習專注度較傳統教學高，但也更易感到刺激過度而疲乏，因此傳統教學與行動載具的搭配與平衡才是我們致力的方向，由於不同學生對於不同教學方式的適應度不甚相同，因此多元的嘗試更易讓每位學生找到自己學習的道路，人人都能成為課堂的主人，創造美好的課堂風景。</p> <p>課程尾聲，如何延續學生返家自學的續航力一直是我們思考著的問題，或許透過於課堂上介紹不同的虛擬平台及課堂未完成、欲完成的任務動力，燃起學生的學習力，也透過師生溝通(聯絡簿通知單、Line 群組)邀請家長從平台一同了解自主學習的樣貌，進而協助孩子建立積極學習的環境，家長於此同時汲取新知，創造雙贏局面。</p>
<p>參 考 資 料</p>	<ol style="list-style-type: none"> 1. Ruben R. Puentedura. Transformation, Technology, and Education. (2006) Online at: http://hippasus.com/resources/tte/ 2. 王千倬，「資訊科技融入教學」推廣政策之敘說研究 (2010) 3. 楊雯蕙，行動載具 (平板電腦) 融入高中歷史教學的初探 — 以「中國近代史教材」為例(2016) 4. 林加振，我的學習我做主：Wordwall Choice Board 的五種差異化教學 玩法 (2020)
<p>附 錄</p>	<p>SAMR and TPCK: A Hands-On Approach to Classroom Practice (by Ruben R. Puentedura, Ph.D.)</p>

SAMR and TPCK: A Hands-On Approach to Classroom Practice

Ruben R. Puentedura, Ph.D.

Phase 1: Building a Basic SAMR Ladder

Transformation

Redefinition

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

Modification

Tech allows for significant task redesign




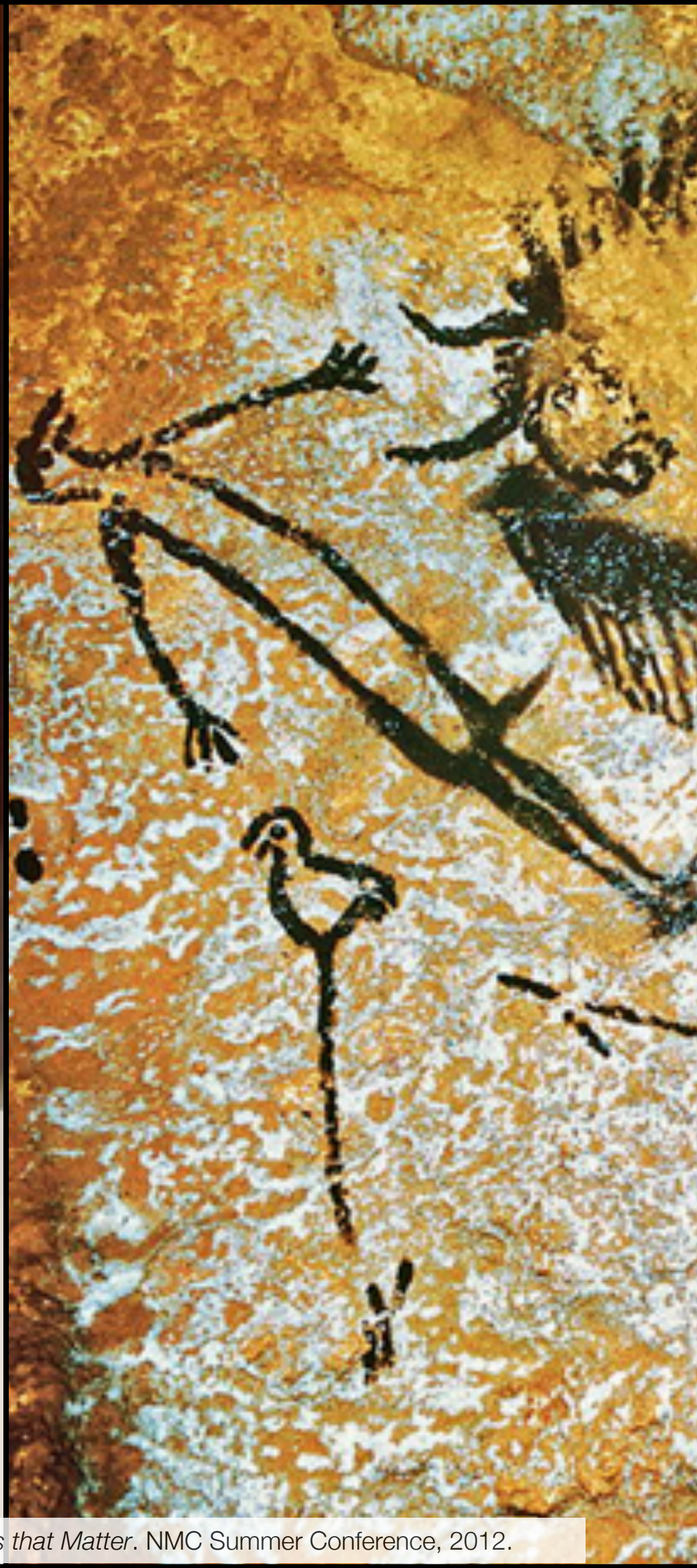

Augmentation

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

Substitution

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

Enhancement

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

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

Surveying Seymour Papert's Four Expectations

- **Expectation 1:** suitably designed formative/summative assessment rubrics will show improvement when compared to traditional instruction.
- **Expectation 2:** students will show more instances of work at progressively higher levels of Bloom's Taxonomy.
- **Expectation 3:** student work will demonstrate more – and more varied – critical thinking cognitive skills, particularly in areas related to the examination of their own thinking processes.
- **Expectation 4:** student daily life will reflect the introduction of the technology. This includes (but is not limited to) directly observable aspects such as reduction in student attrition, increase in engagement with civic processes in their community, and engagement with communities beyond their own.

Bloom's Taxonomy: Cognitive Processes

Anderson & Krathwohl (2001)	Characteristic Processes	
Remember	<ul style="list-style-type: none"> • Recalling memorized knowledge • Recognizing correspondences between memorized knowledge and new material 	
Understand	<ul style="list-style-type: none"> • Paraphrasing materials • Exemplifying concepts, principles • Classifying items • Summarizing materials 	<ul style="list-style-type: none"> • Extrapolating principles • Comparing items
Apply	<ul style="list-style-type: none"> • Applying a procedure to a familiar task • Using a procedure to solve an unfamiliar, but typed task 	
Analyze	<ul style="list-style-type: none"> • Distinguishing relevant/irrelevant or important/unimportant portions of material • Integrating heterogeneous elements into a structure • Attributing intent in materials 	
Evaluate	<ul style="list-style-type: none"> • Testing for consistency, appropriateness, and effectiveness in principles and procedures • Critiquing the consistency, appropriateness, and effectiveness of principles and procedures, basing the critique upon appropriate tests 	
Create	<ul style="list-style-type: none"> • Generating multiple hypotheses based on given criteria • Designing a procedure to accomplish an untyped task • Inventing a product to accomplish an untyped task 	

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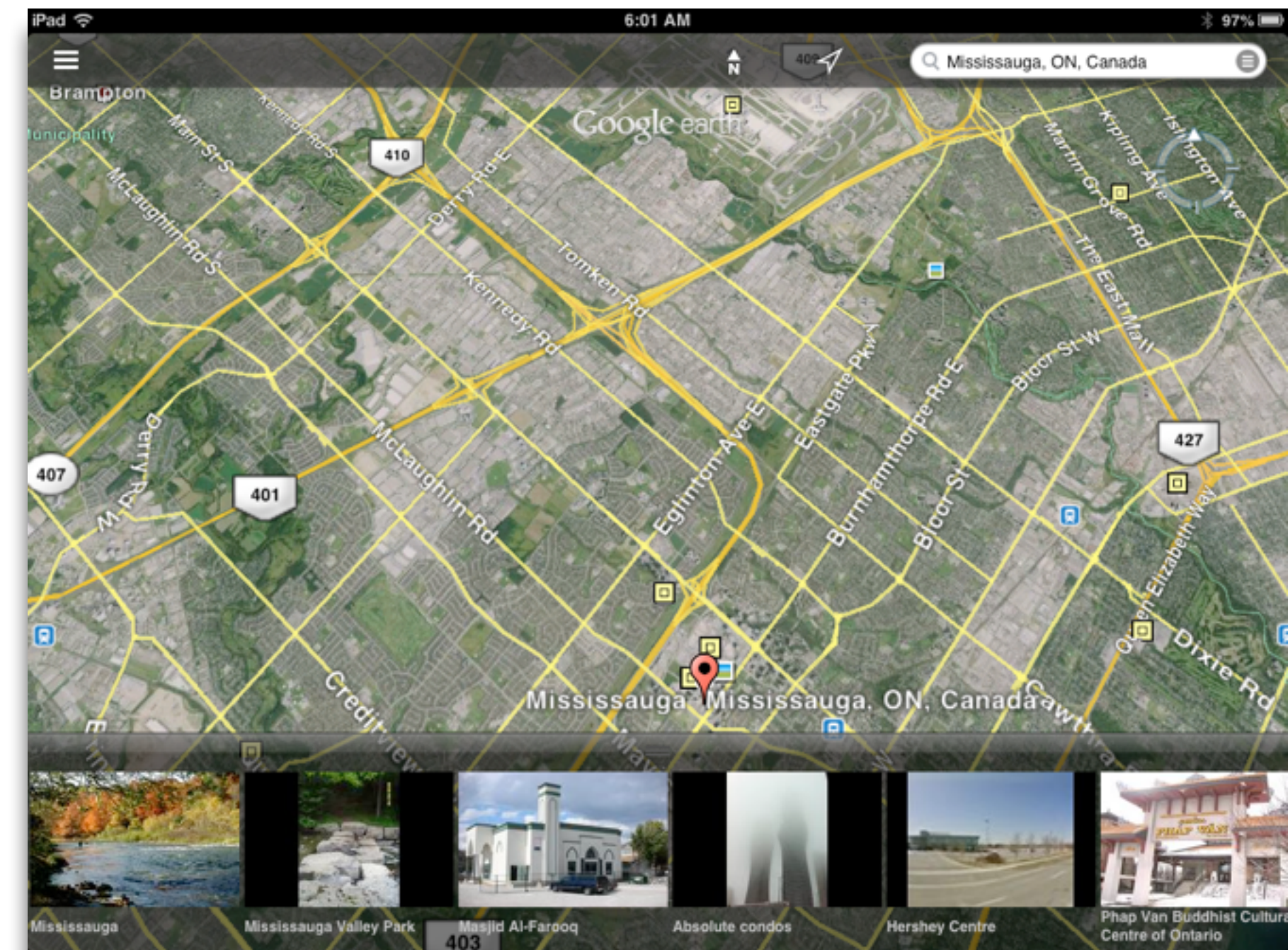
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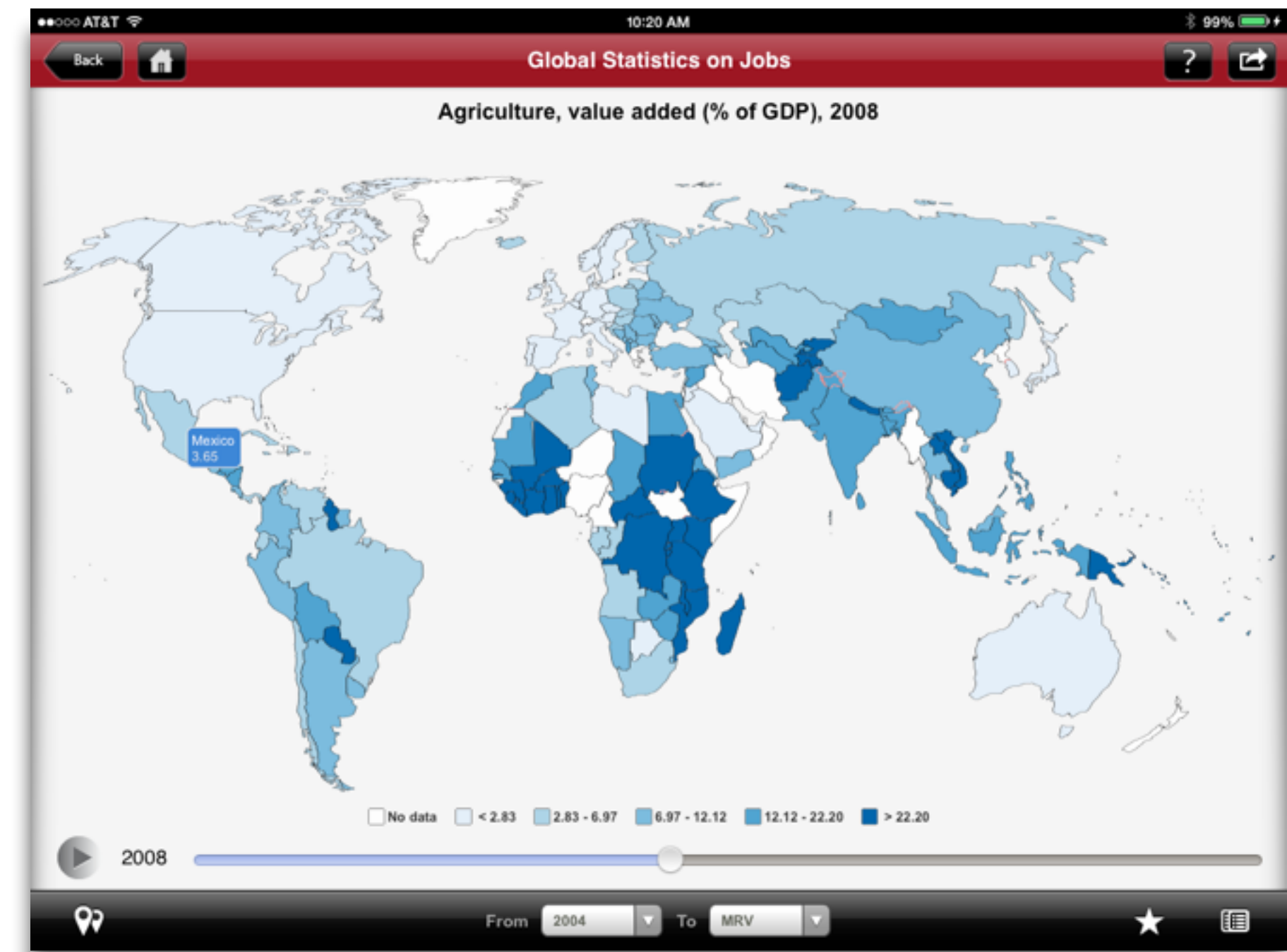
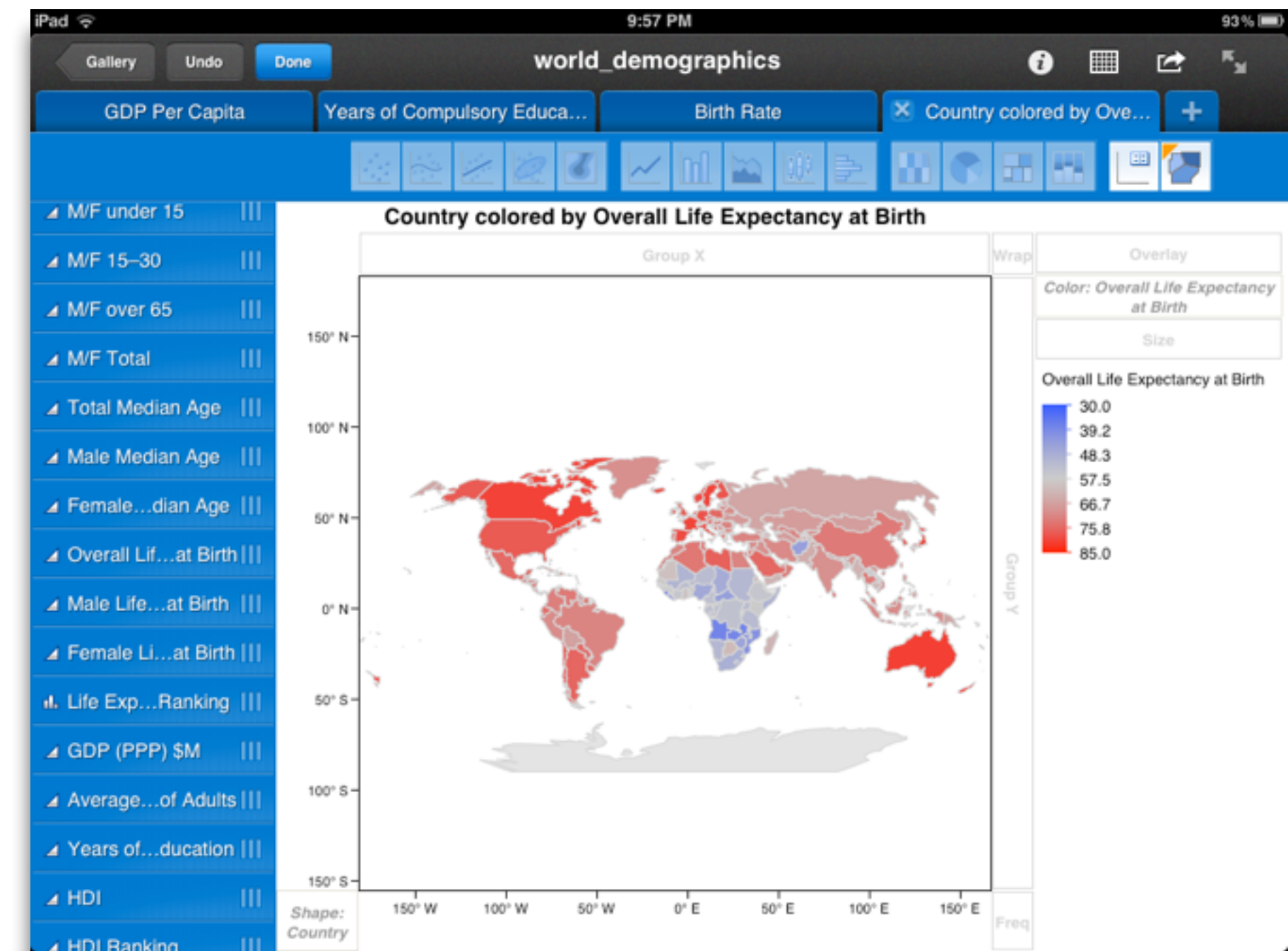
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Create

Evaluate

The screenshot shows the Kiva website interface. At the top, there's a navigation bar with 'Lend', 'About', 'Community', 'Updates', and 'My Portfolio'. Below this, 'Featured Categories' are displayed: 'Start-ups' (55 loans), 'Rural Communities' (21 loans), and 'Youth' (32 loans). A 'Choose a Borrower' section shows 2,024 loans available, with a search bar and filters. The selected borrower is 'Mirafior' from the Philippines, with a 7% interest rate and a \$350 loan amount. The description states: 'A loan of \$350 helps Mirafior to purchase additional livestock and vaccines for her'.

The screenshot shows an iPad app titled 'Anatomy of a Loan'. The top part features a line graph with data points for Mexico, Canada, and the United States from 1995 to 2006. Below the graph, there's a section titled 'COFFEE CONSUMPTION IS STILL RISING, THOUGH' with an image of a coffee cup. The bottom part of the screen shows a loan profile for 'Juan Carlos' with a 6% interest rate and a \$25 loan amount. The description states: 'A loan of \$25 helps Juan Carlos to buy fertilizers'. The app has a toolbar at the bottom with various icons for navigation and editing.



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?

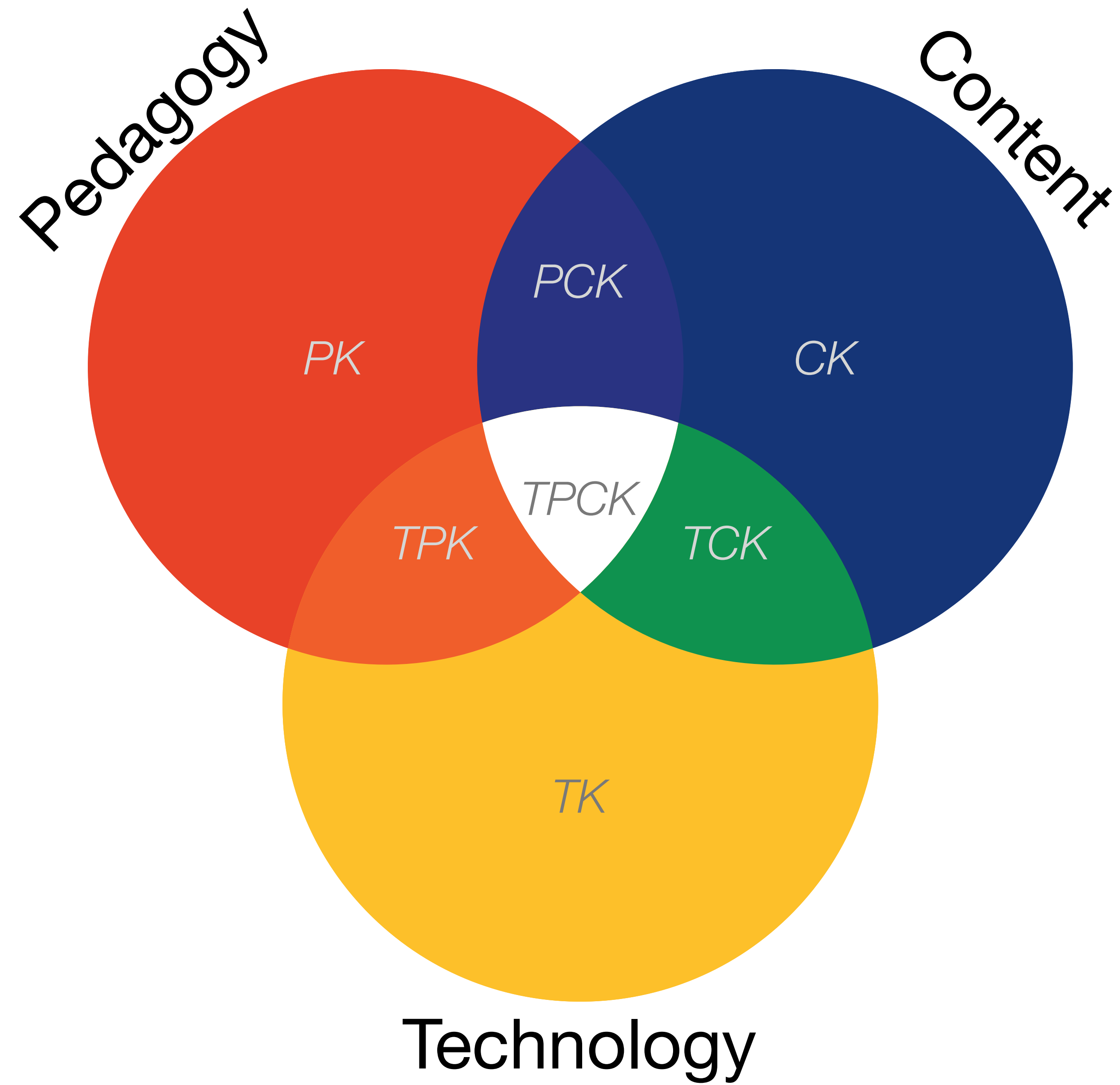
- **Barriers to Your Students' Progress:**

- 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?

Phase 2: Adding in TPCK



Redefinition

Tech allows for the creation of new tasks, previously inconceivable

Modification

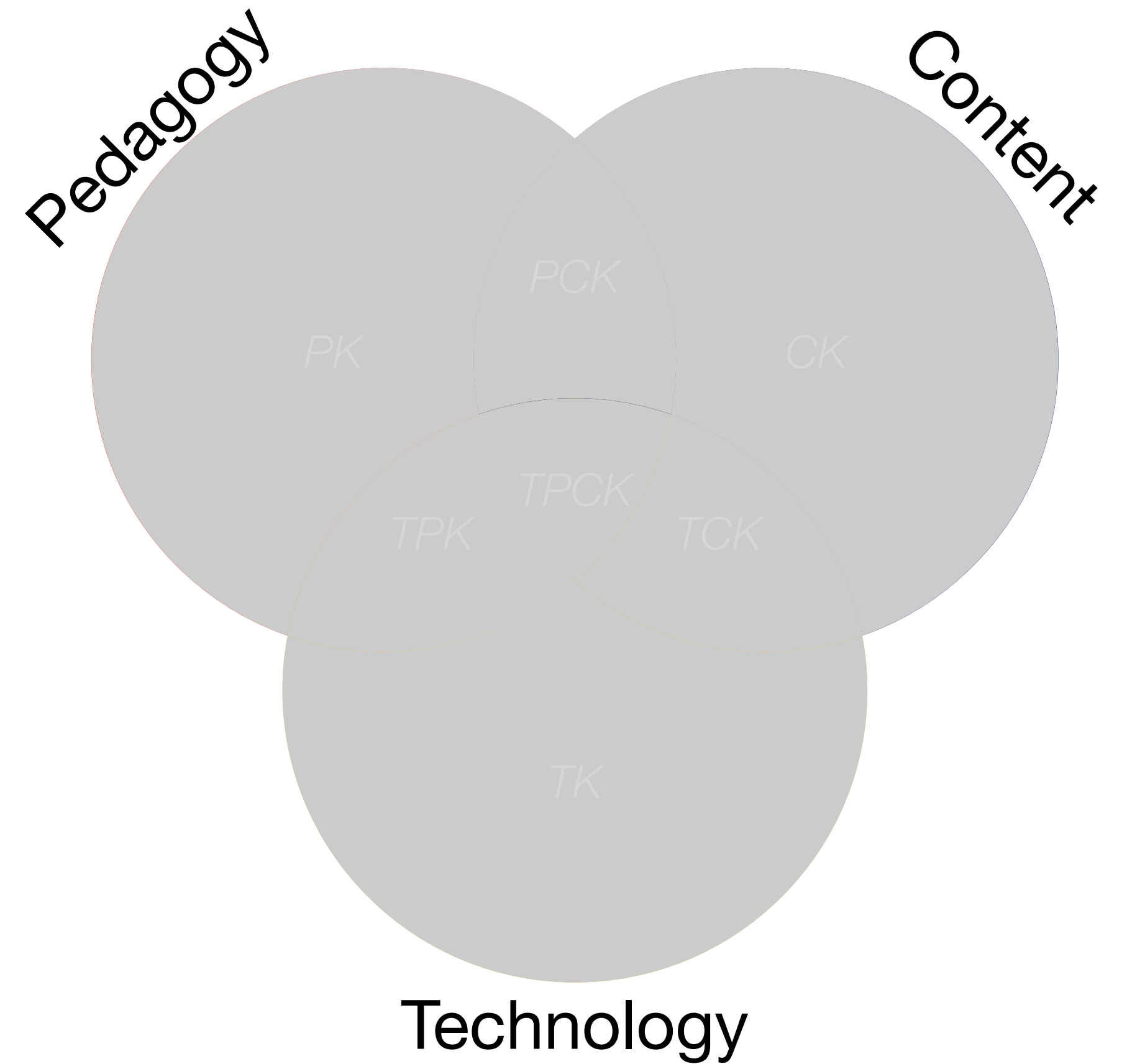
Tech allows for significant task redesign

Augmentation

Tech acts as a direct tool substitute, with functional improvement

Substitution

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



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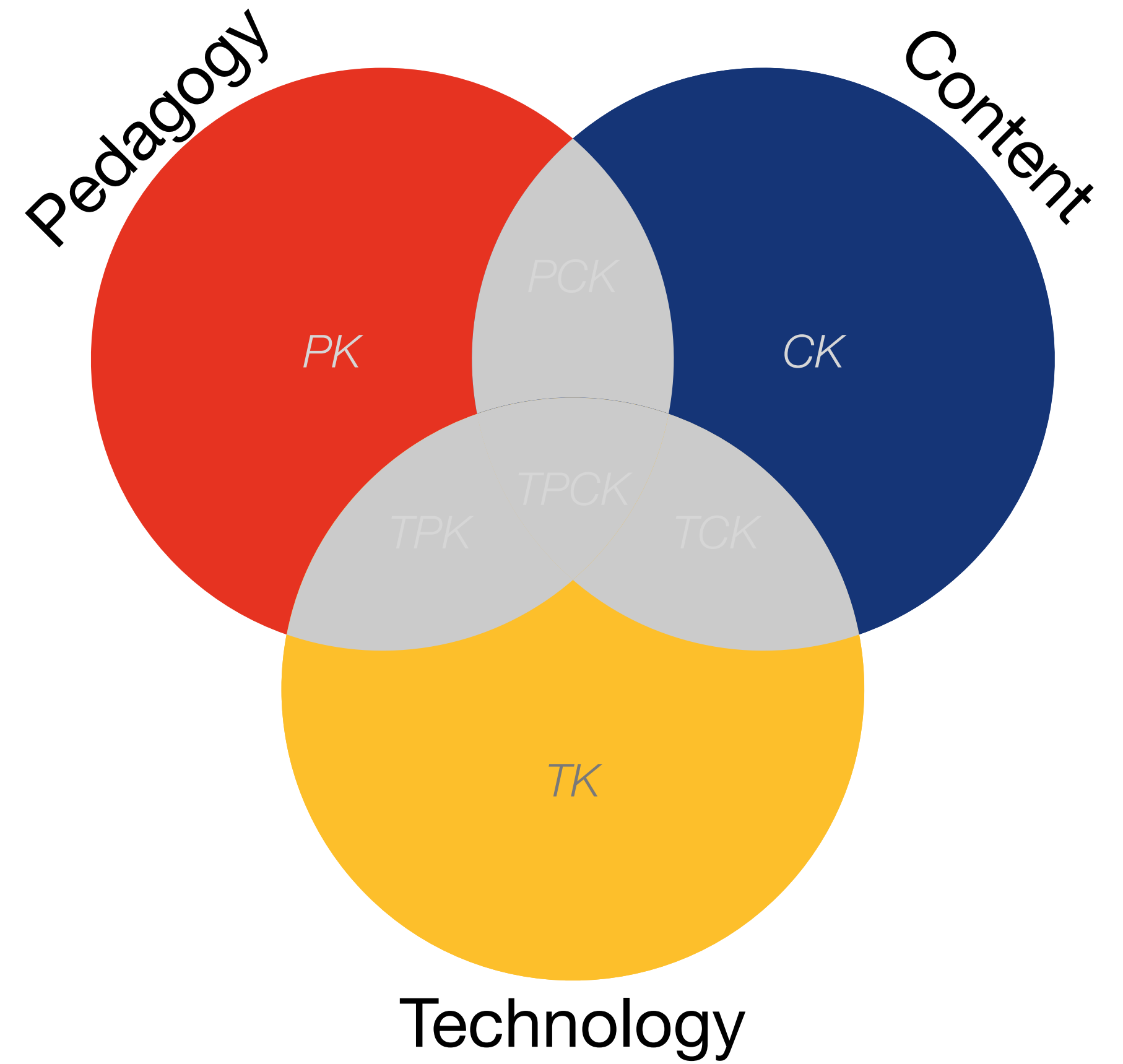
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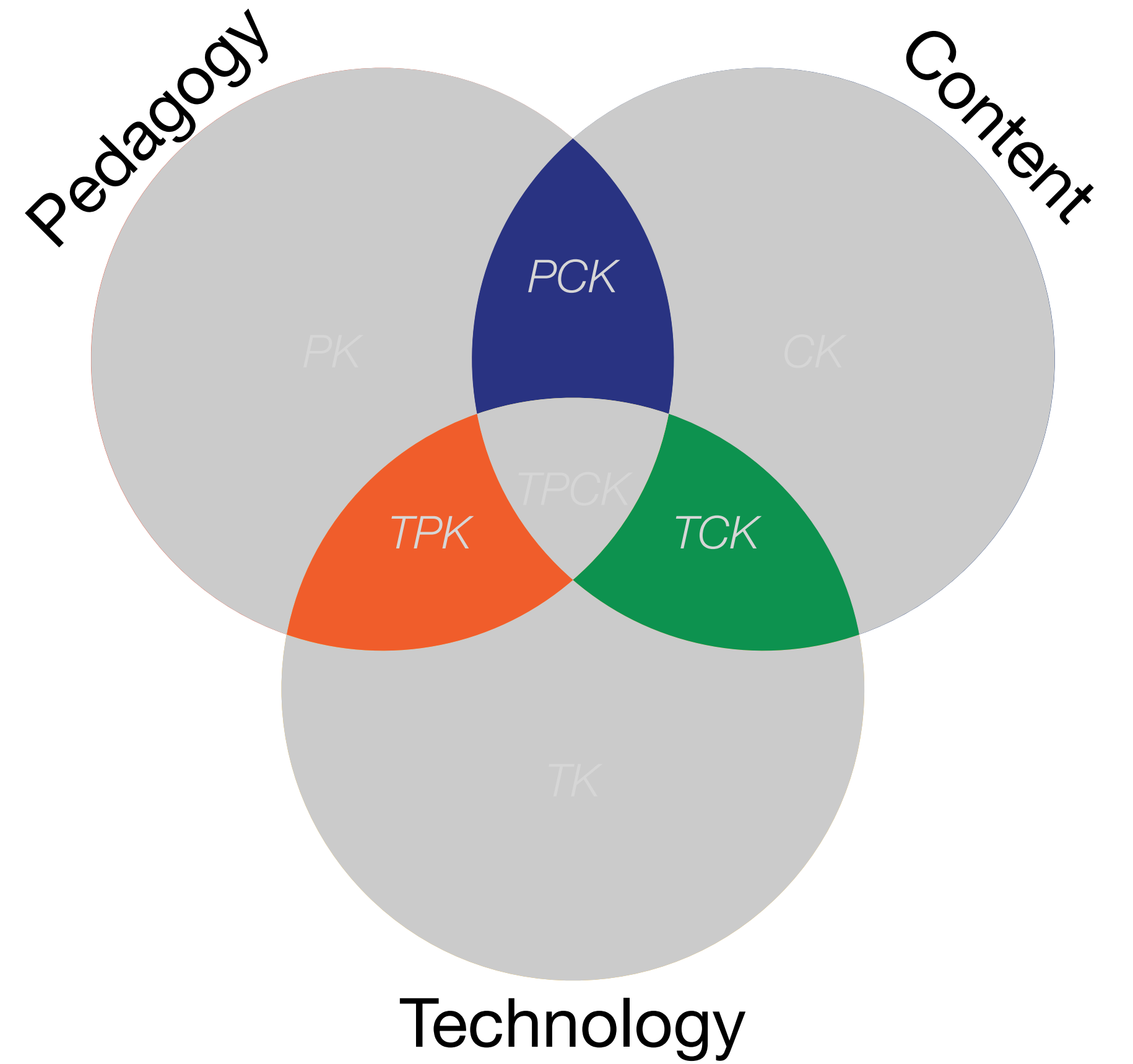
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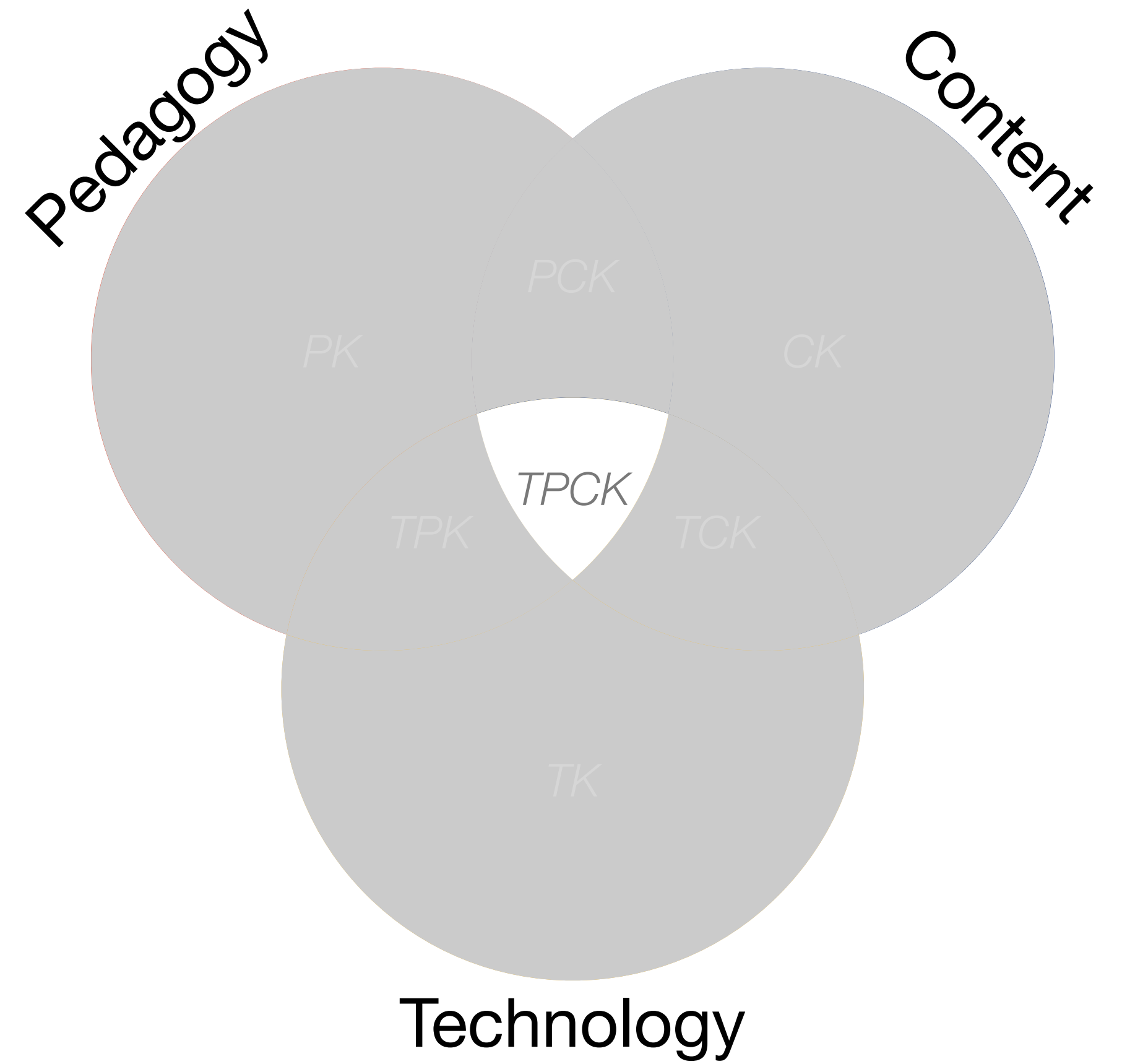


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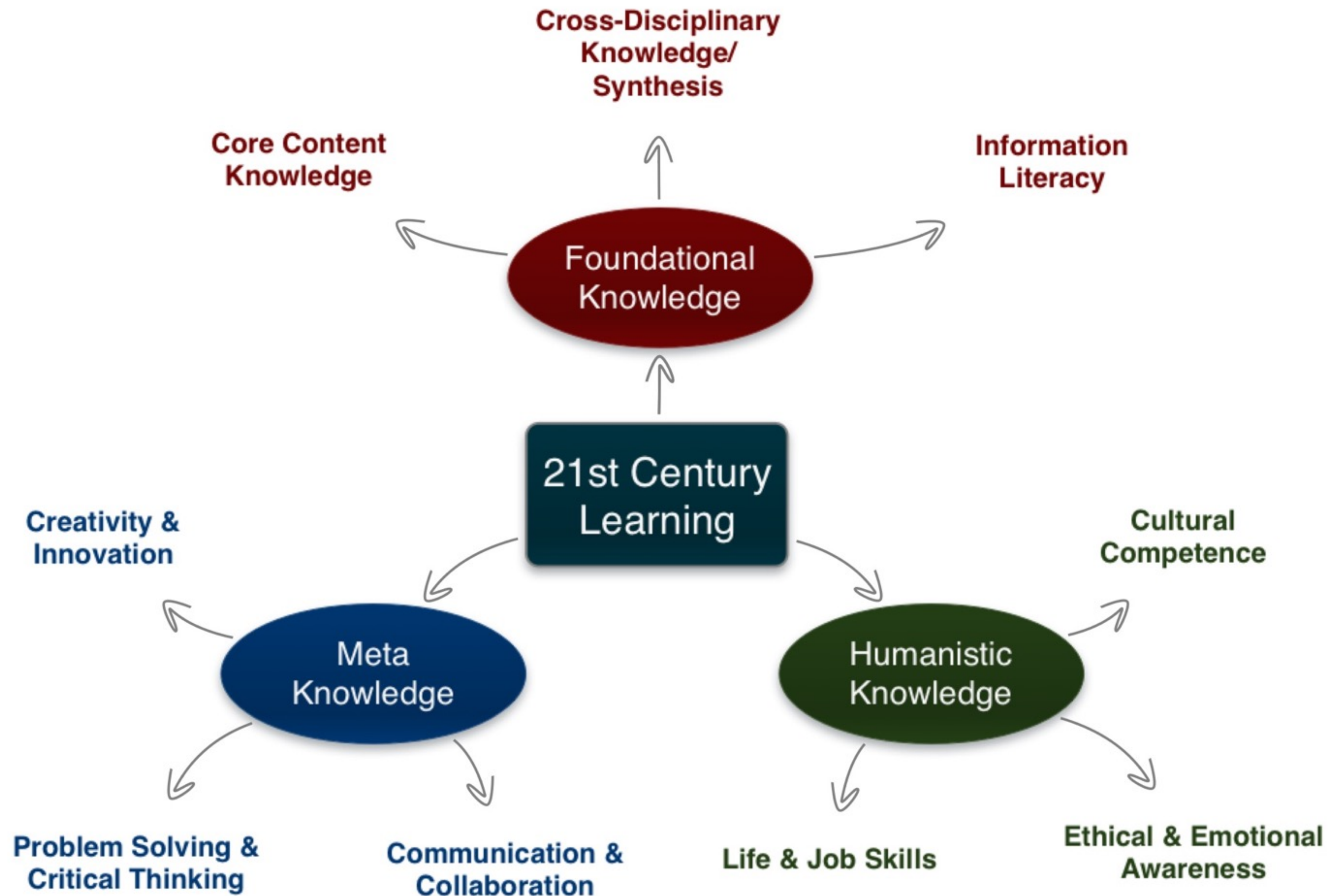
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Phase 3: Responding to 21st Century Learning Needs



Phase 4: Thinking About Trends and Challenges

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

understand and know how to solve

Authentic Learning Opportunities
Integrating Personalized Learning

Difficult

understand but solutions are elusive

Complex Thinking & Communication
Safety of Student Data

Wicked

complex to define, much less address

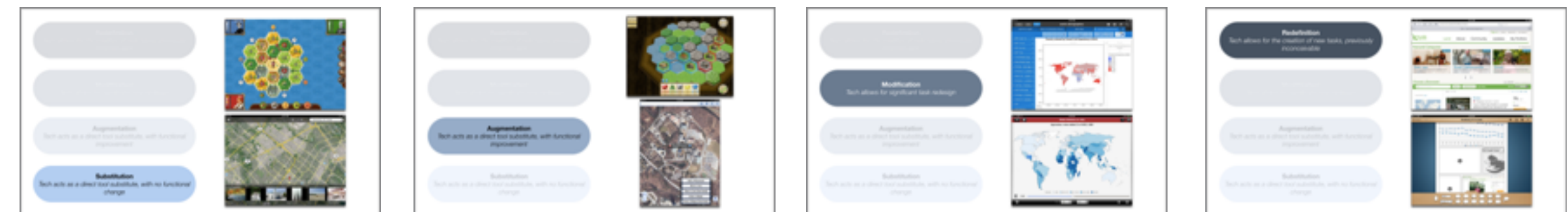
Competition from New Models of Ed
Keeping Formal Education Relevant

Key Trends Driving Ed Tech Adoption

Fast (1-2 yrs.)	Rethinking the Roles of Teachers Shift to Deeper Learning Approaches
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Important Ed Tech Developments

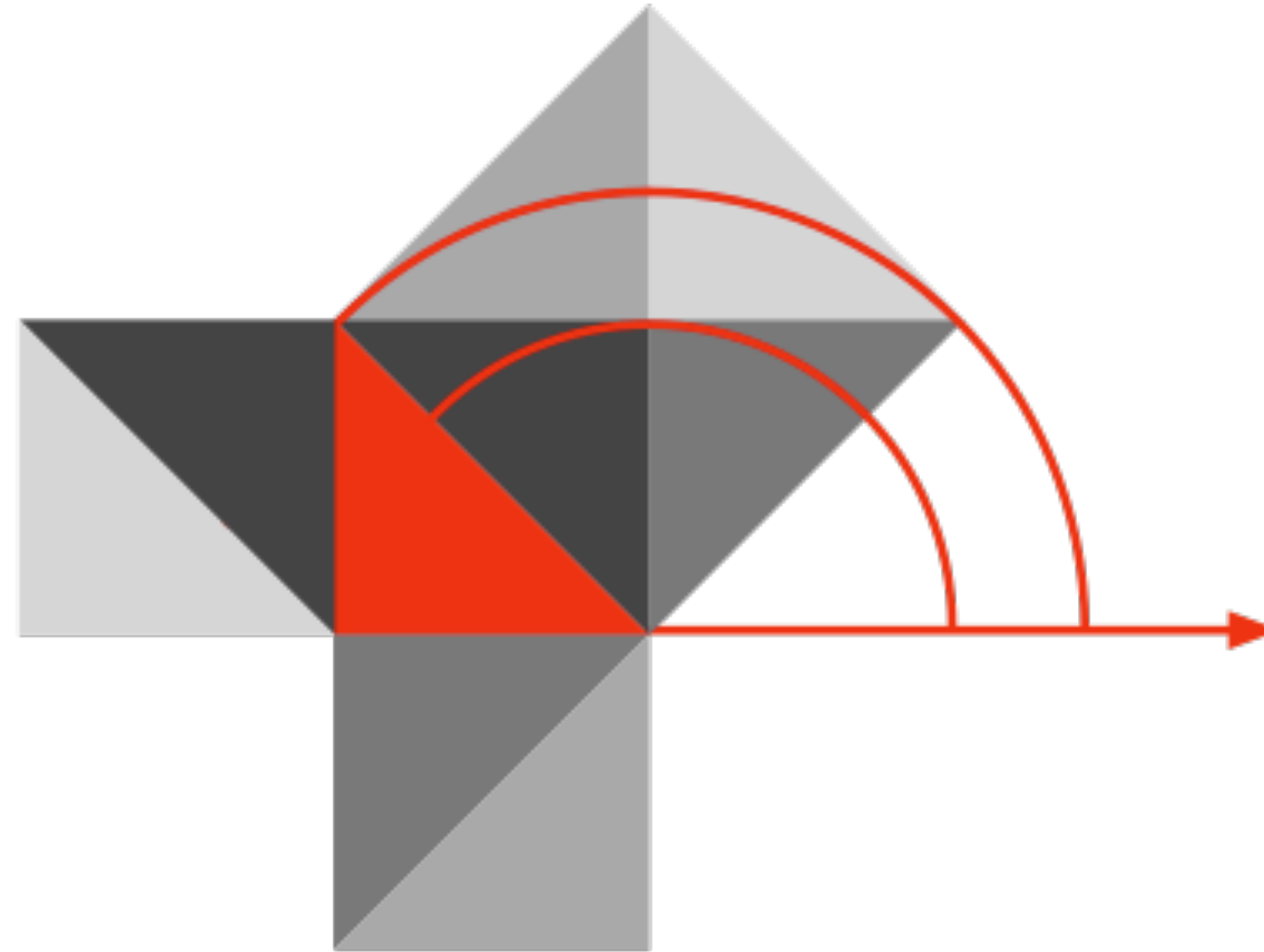
Adoption: 1 yr. or less	BYOD Cloud Computing
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Significant Challenges Impeding Ed Tech Adoption

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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