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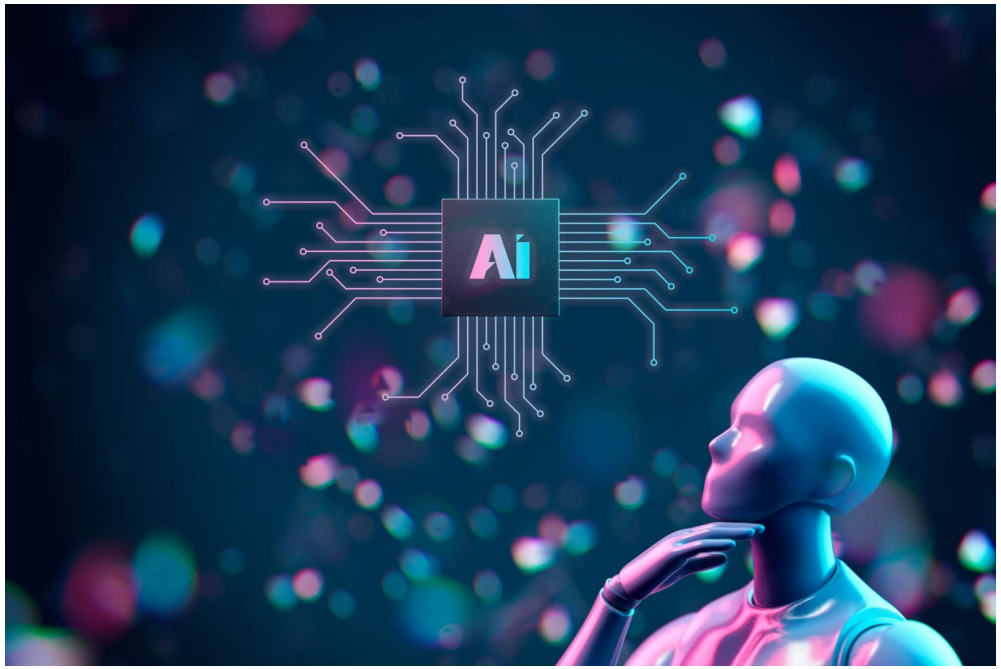
AI in K-12 Education



Leslie Eaves, PBL Program Director

Driving Questions

How might the Pillars of AI Use in K-12 Instruction inform legislative decisions?

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Table Discussion

What is AI?

Opportunities	Cautions

At your tables, discuss…

- How would you define Artificial Intelligence?
- What are opportunities that AI provides?
- What cautions do we need to consider?

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Initial Considerations

Changing Educational and Workforce Landscape: How do we prepare students for a changing workforce and future careers?

Role of AI in Student Engagement: How do we use AI to support solid pedagogy and thinking and not to circumvent it?

Need for Clear AI Guidelines: What guidelines are needed to ensure ethical and responsible use of AI?

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Our Process: K-12 Instruction AI Subcommittee

1. Developed a model for thinking about adult skills and aptitudes for use of AI in K-12 Instruction.
2. Interviewed educators in various levels of k-12 instruction.
3. Reviewed and analyzed publications relating to AI in K-12 instruction.

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Four Pillars of AI Use in the Classroom

How might AI enhance teaching and learning?

Increasing Cognitive Demand	Streamlining Teacher Work	Supporting Personalized Learning	Developing Future AI Users

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Four Pillars of AI Use in the Classroom

Opportunities

Cautions

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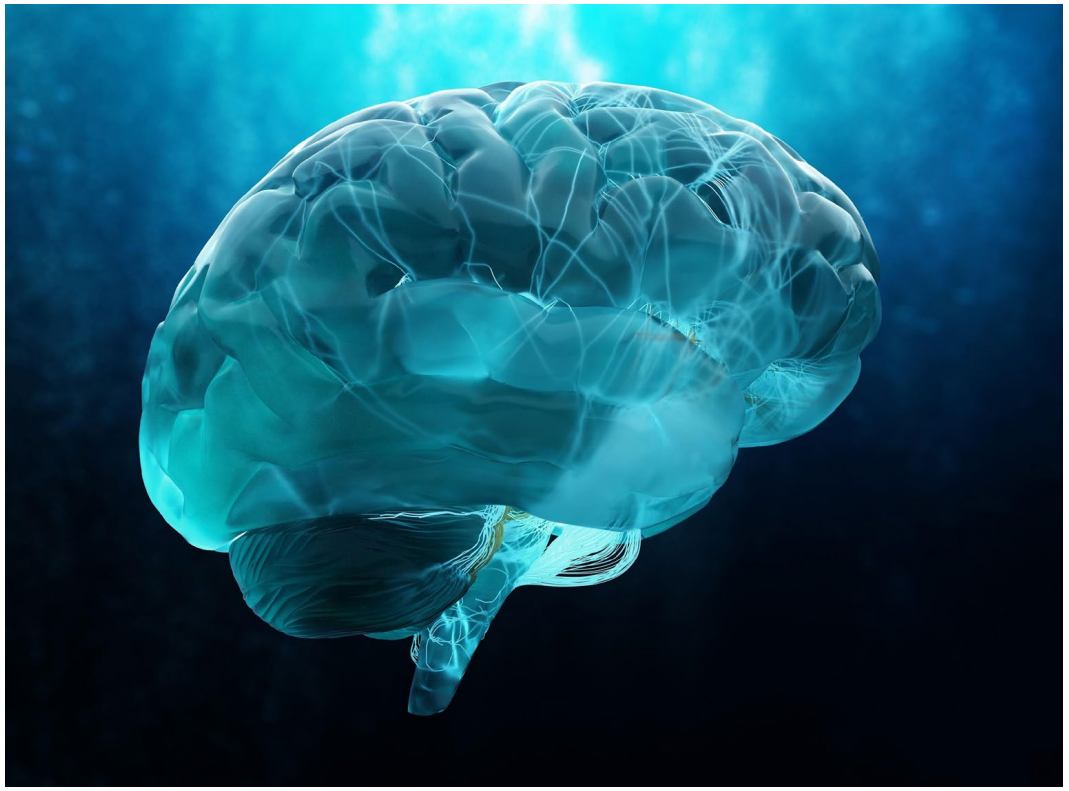
Pillar 1: Enhancing Cognitive Demand with AI

Creating Engaging, High-Level Tasks

Increased Task Complexity
AI can assist in creating tasks that encourage strategic thinking, aligning with Hess's Cognitive Rigor Matrix.

Supporting Student Creativity
AI is an initial tool for brainstorming, but students must add unique creativity to produce final work.

Focus on Ethics and Process
Students learn ethical AI use, ensuring AI complements but does not replace human creativity.



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Increasing Cognitive Demand
Engaging, Authentic Learning Tasks

	DOK 1: Recall and Reproduction	DOK 2: Skills and Concepts	DOK 3: Strategic Thinking	DOK 4: Extended Thinking
Remember				
Understand				
Apply				
Analyze				
Evaluate				
Create				

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Pillar 2: Streamlining Teacher Administrative Work

Reducing Administrative Burden with AI

Lesson and Unit Planning Assistance

AI provides quick suggestions for lesson and unit plans, helping teachers with specific pedagogical frameworks.

Administrative Task Support

AI aids in communication with parents, translating materials, and managing schedules, reducing day-to-day burdens.

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Notes from the Field

This pillar is a starting point for schools because it only requires adult access to AI

- Lesson and unit planning
- Grouping
- Letters and emails
- Translation
- Resource creation
- Text leveling or creation

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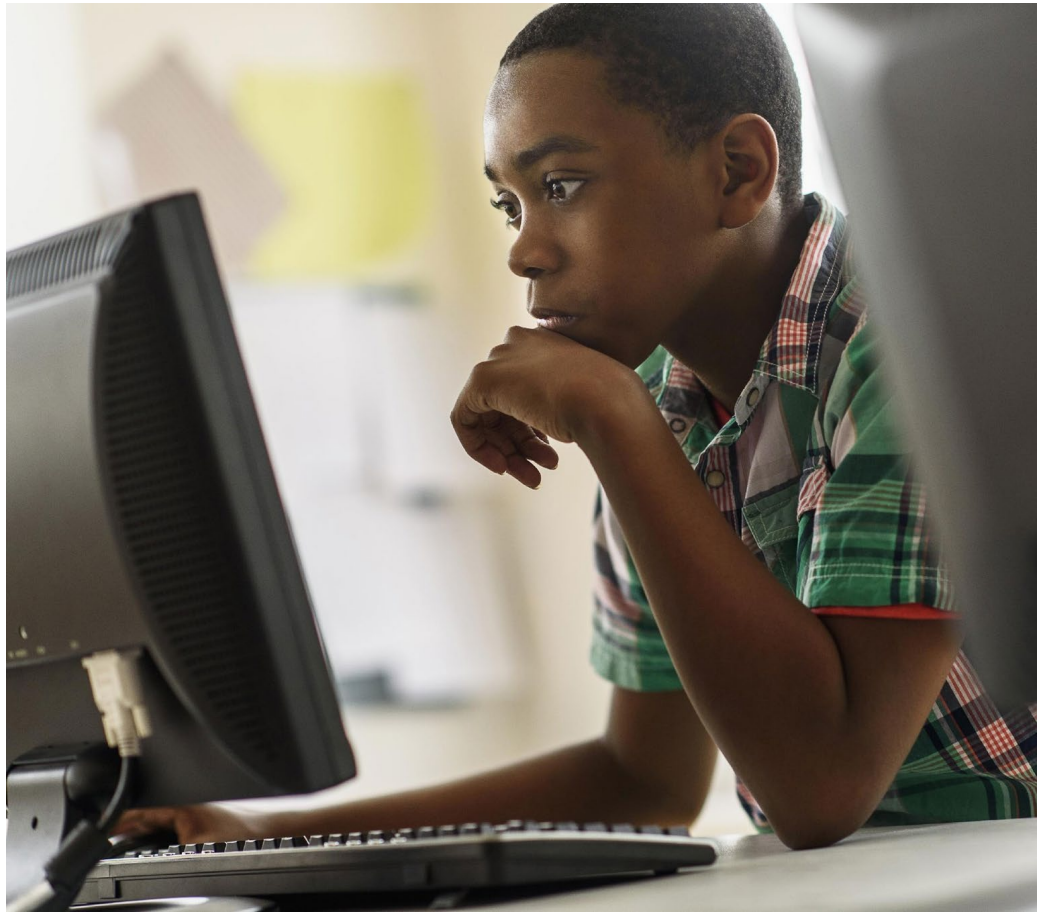
Pillar 3: Supporting Personalized Learning with AI

Tailoring Education to Individual Needs

Adaptive Learning Platforms: AI-driven platforms adjust content and difficulty based on individual student performance, promoting engagement and inclusivity.

Supporting Special Needs: AI tools offer customized support for students with disabilities, enhancing accessibility and participation.

Real-Time Feedback and Recommendations: AI provides instant feedback and suggests resources tailored to each student's learning journey.



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Notes from the Field: Individualizing & Personalizing Learning

Socratic questioning with teacher-created AI chatbot

As-needed tutoring support - in class or at home

Help with research process and finding resources

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Pillars 1 - 3 Table Discussion

Assign each pillar to people at your table - ***only Pillars 1 - 3***

Review your pillar's opportunities and cautions

Discuss:

- How might these pillar inform our work?
- What are strengths we can leverage? (opportunities)
- What are potential challenges we need to address? (cautions)

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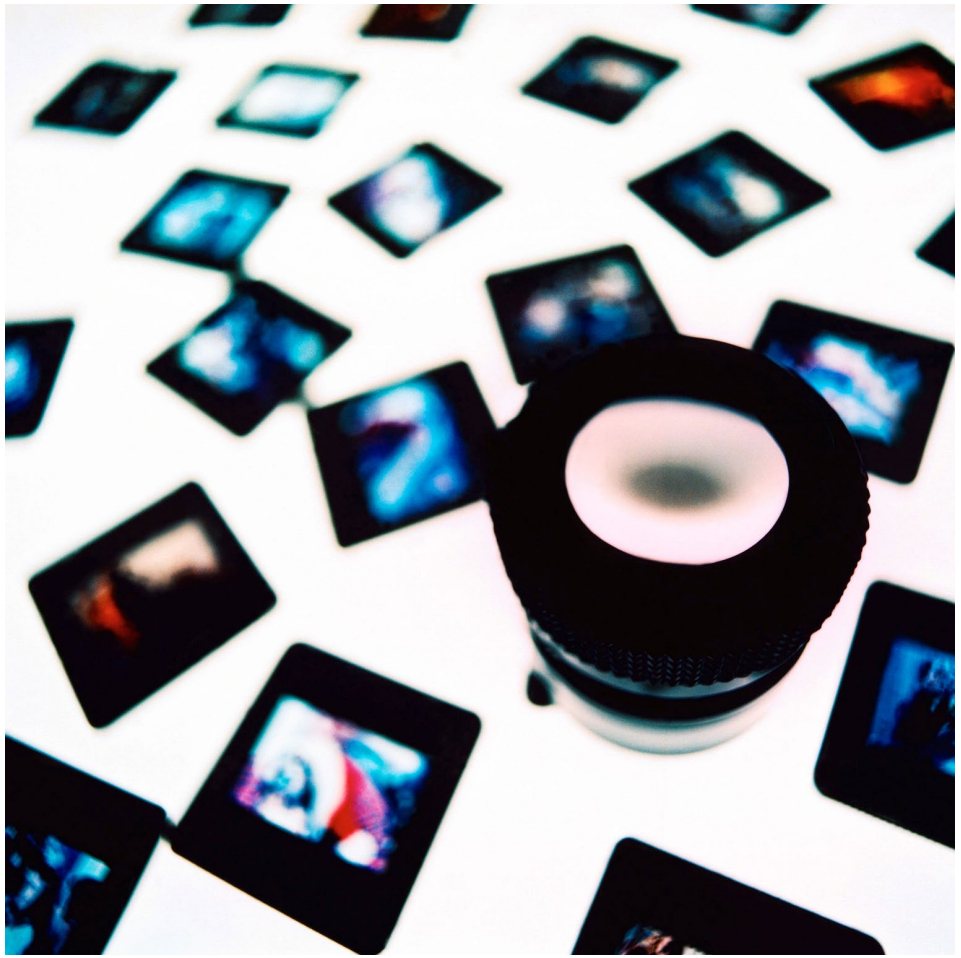
Career Connections



Cards at your tables have images that represent different careers

How do you see AI impacting and transforming the careers represented in your cards?

What might be the economic impact of these shifts or transformations?

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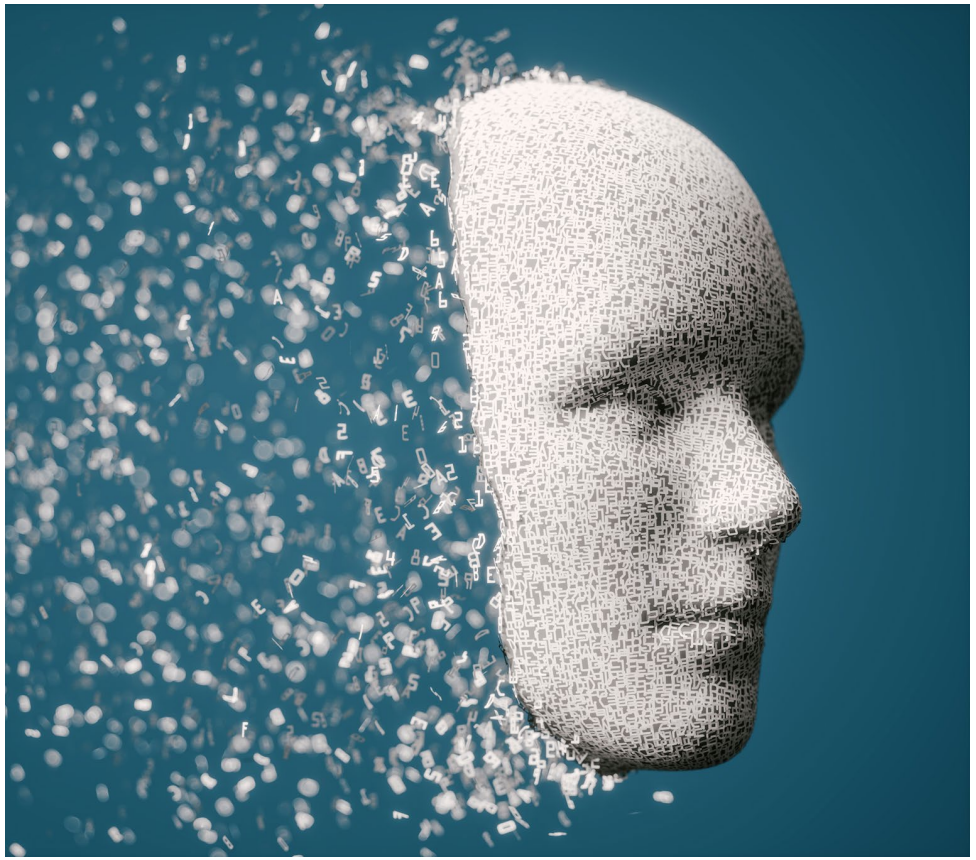
Pillar 4: Developing Ethical and Proficient AI Users

Building Responsibility in AI Use



Promoting Ethical AI Use: Teaching students to use AI responsibly by understanding ethical implications and avoiding misuse.

Data Privacy Awareness: Instructing students on data privacy risks, including the importance of secure data handling in AI applications.

Critical Media Literacy: Helping students discern AI-generated content from authentic sources, reducing the spread of misinformation.

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Pillar 4: Table Discussion

Review the Pillar 4 Opportunities & Cautions

Discuss - add to your previous notes

- How might this pillar inform our work?
- How do the other pillars interconnect and support this pillar?
- What are strengths we can leverage?
- What are potential challenges we need to address?

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AI Tool Procurement Process

Design	Procurement	Deployment & Implementation	Monitor & Evaluation
Engages a local design team that includes: IT professionals, administrators, and educators Provides the instruction or organizational need for the AI tool.	Examines potential AI tools and interviews vendors. Chooses the tool that best fits the identified goal and the local context	Gets the tool ready for deployment across the local system and network Designs professional develop for users that supports the ethical and effective use of the AI tool	Develops a monitoring and evaluation plan to determine if the needs are met. Solve problems that may arise

Questions are used to guide the process

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Checklist Resources

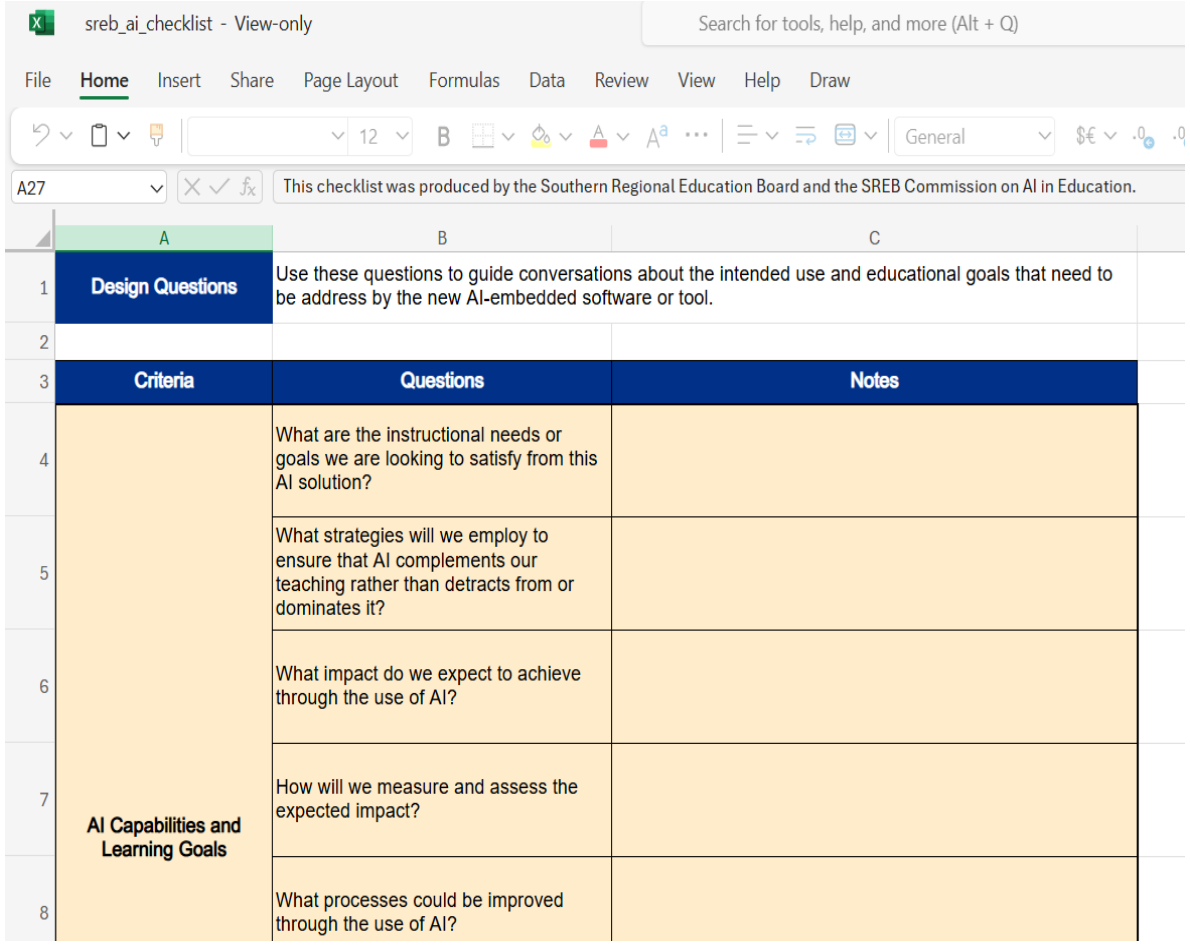
AI Tool Procurement, Implementation and Evaluation

As educational entities seek to incorporate more artificial intelligence tools as part of their educational supports for students, current technology procurement checklists and procedures will need to be updated. While schools, districts and other educational entities that support K-12 education have had to account for local, state and federal guidelines on the use of student data, AI systems also call us to consider how it will be used ethically by educators and students and cautions for the handling of student data within an AI system. Key factors that need to be considered when procuring an AI tool include:

- Intended use to satisfy educational goals or other productivity needs,
- The compliance of federal, state and local guidelines to maintain the security and privacy of users' data and personally identifiable information.
- Ensuring the AI system has been taught using data sets that reflect the student population to help minimize biased information or outcomes, and
- Developing all users on the ethical use of AI-generated content or decisions.
- Ensure that vendors provide a detailed explanation of their AI tool's development process, including the types of data, sources, and preprocessing methods used. This will help assess the tool's functionality and suitability.

Considering this, the AI in Education Commission's K-12 Instruction subcommittee reviewed several frameworks and recommendations for integrating AI into K-12 education. Workforce EdTech's AI-Integration Framework has a framework that supports the above needs and an easy-to-use tool for examining potential AI solutions. Their framework consists of six categories to consider when determining the best use for an AI product:

- **AI Capabilities and Learning Goals** - Ensures that the technology aligns with educational goals within the learning environment and utilizes the current infrastructure with minimal costs or adjustments.



	A	B	C
1	Design Questions	Use these questions to guide conversations about the intended use and educational goals that need to be address by the new AI-embedded software or tool.	
2			
3	Criteria	Questions	Notes
4	AI Capabilities and Learning Goals	What are the instructional needs or goals we are looking to satisfy from this AI solution?	
5		What strategies will we employ to ensure that AI complements our teaching rather than detracts from or dominates it?	
6		What impact do we expect to achieve through the use of AI?	
7		How will we measure and assess the expected impact?	
8		What processes could be improved through the use of AI?	

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Professional Development Guidances

Consideration 1:
A professional learning plan that builds in complexity of AI use over time.

Consideration 2:
Adult Learning Best Practices for High-Quality Professional Learning

Consideration 3:
Expectations for educator and students ethical and responsible use

Consideration 4:
Incorporate AI career readiness outcomes

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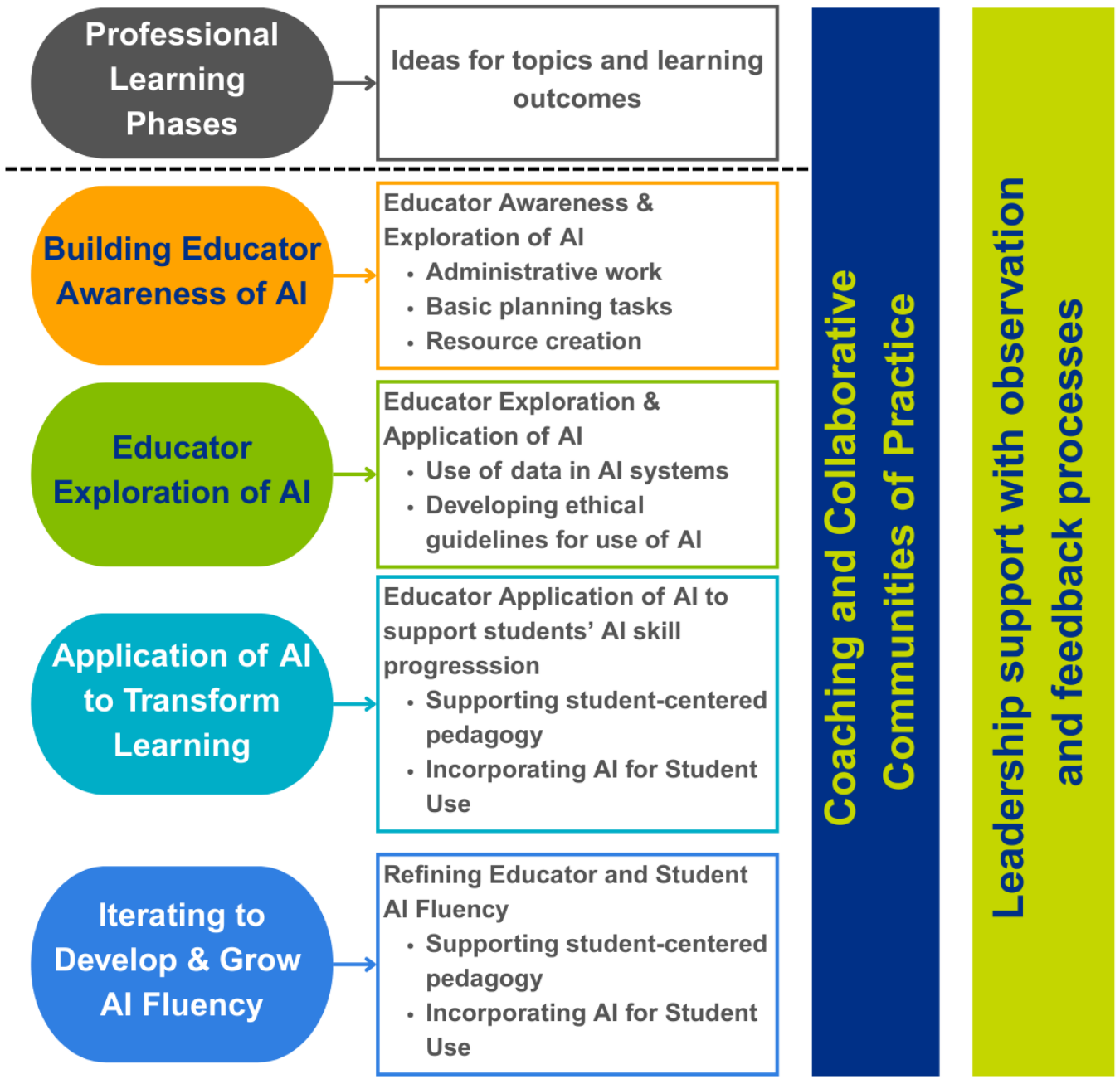
Phased Approach to Upskilling Educators



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For more information:

https://www.sreb.org/topic-ai-education-0

https://www.sreb.org/SchoolImprovement

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