

CONSIDERATIONS

Learning Systems

*Opportunities and Challenges of
Artificial Intelligence-Enhanced Education*

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 Bellwether





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Introduction

Generative artificial intelligence (GenAI) advancements have prompted both excitement and concern about how AI could be used in education. From streamlining administrative tasks to personalized resources for students with learning differences to reimagining staffing models, AI offers a spectrum of possibilities. However, its integration requires careful consideration of both potential benefits and inherent risks.

This three-part series, developed through consultations with experts and practitioners, aims to take a holistic approach, analyzing the opportunities, risks, and considerations surrounding AI in education in the following ways:

Foundations

The Landscape of Artificial Intelligence in K-12 Education

An introductory guide exploring AI developments, capabilities, potential impacts, and current usage.

Considerations

Opportunities and Challenges of Artificial Intelligence-Enhanced Education

A deep dive into the broader ecosystem, including technology platforms, policy landscapes, and stakeholder experiences.

Applications

Artificial Intelligence Use Cases

An outline of how AI could potentially be used in education, detailing opportunities and risks for each use case.



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Key Takeaways

Insights From the Learning Systems Series

The education sector has an opportunity to shape its future as GenAI technology is developing. Proactive planning allows thoughtful integration of AI's potential benefits to carefully address its challenges and prepare for emerging capabilities. To help education stakeholders navigate this complex and evolving landscape, Bellwether offers the following recommendations to build strong capacity, resilient infrastructure, and thoughtful design.

Building Strong Capacity

To safely and effectively incorporate AI, the education sector must invest in the development of knowledge, skills, and diversity of leaders and contributors. **Capacity-building effort is not just beneficial — it is critical.** While these efforts require a meaningful investment of time, talent, and resources, without them, the education sector faces barriers to progress. Even though capacity-building around AI may not rise to high urgency for individual organizations, funders and policymakers can and should incentivize the system so that there is meaningful progress over time.

1. Strengthening AI literacy.

Administrators, teachers, students, and families alike need to build understanding of AI's capabilities, limitations, and implications so that communities can make informed decisions about AI and effectively choose where to (and not to) integrate AI into learning environments. AI literacy also extends into the thoughtful teaching of AI — what students should know and be able to do related to being prepared for the workforce of the 2030s.

2. Enabling the development of policies and guidelines.

Comprehensive and flexible policies and guidelines are essential to wider AI adoption but have been slow to develop, notably at the federal and state levels. As of August 2024, approximately half of states have yet to provide AI guidance. State and local education leaders would benefit from collaboration opportunities, including with industry leaders, as they develop and refine their policies.

Building Strong Capacity *(continued)*

| | |
|--|---|
| 3. Bridging educators, developers, and researchers. | <p>Currently, there is a gap between teams building AI tools and education practitioners. Fostering strong partnerships, especially in development and design stages, can ensure AI tools are safe, effective, and relevant for education purposes, aligned with pedagogical principles, and grounded in research about how students learn. Partnerships will increase the likelihood of well-designed solutions, thereby enabling the realization of AI's transformative potential in education.</p> |
| 4. Expanding sectorwide capabilities. | <p>The rapid advancement of AI in education has surfaced a significant gap between current capabilities and needed expertise. To bridge this chasm, the sector needs to expand capacity across the entire educational ecosystem, addressing needs such as data privacy, ethical implementation, procurement, and other challenges surfaced throughout this three-part series. This expansion can take multiple forms: Existing education organizations can develop AI competencies, AI experts from other sectors can be encouraged to apply their knowledge to educational contexts, and new organizations can be established to address emerging needs. Addressing these gaps in the education sector is crucial for developing comprehensive, education-specific AI solutions that incremental improvements in existing structures may not be able to achieve.</p> |
| 5. Diversifying voices at the table. | <p>Degree attainment data suggest that the current AI field is not yet reflective of the diverse students and educators across the country. Diversification of voices involved in AI-related dialogues and decisions can promote more inclusive AI solutions that benefit all students. This includes conversations with and among AI developers, solution builders, and researchers as well as authentic engagement with diverse educators, students, and families who will be most impacted by decision-making processes.</p> |

Building Resilient Infrastructure

In the excitement of thinking about how AI can be used, there is the potential to overlook the importance of a robust, secure, and nimble infrastructure. **Strong data and research not only enhance the quality of AI outputs but also serve as a crucial safeguard, particularly in protecting sensitive student data.** Investing in resilient infrastructure is essential for realizing AI's benefits while mitigating its risks, ensuring that enthusiasm for innovation is matched by a commitment to security and quality.

| | |
|---|---|
| 6. Robust data infrastructure. | Implementing AI widely throughout a system or organization will require a secure, high-quality data infrastructure. This includes ensuring data quality and usability, system interoperability, robust security measures, well-planned change management processes, and reliable internet connectivity. |
| 7. More quality datasets and new benchmarks. | To enhance the quality of AI outputs, there is an opportunity to develop more high-quality, education-specific datasets for fine-tuning AI models for tailored uses. Additionally, establishing education benchmarks for AI tools can incentivize and align the market around quality and effectiveness. |
| 8. Continued research and learning. | Ongoing research is needed to understand what works and what does not work in AI-enhanced education. By continuously evaluating the impact of AI tools and methodologies and building from existing learning science research, developers can refine their approaches and ensure that AI enhances learning outcomes for all students. |

Building Thoughtful Design

As developers create AI tools for education, it is important to prioritize purposeful design that considers the diverse needs of all students while maintaining the essential role of human interaction. **Thoughtful design goes beyond technological capabilities, focusing on clear educational objectives and research-based approaches.**

9. Purposeful, inclusive, and research-backed AI design.

As opposed to leading with the technology, AI tools must be designed with a clear purpose. From the early stages of product development, tools designed for widespread adoption should consider the needs of all students, inclusive of students with learning differences and multilingual learners. The lower barriers to entry to create AI tools also offer the opportunity to develop highly tailored tools that can focus on the unique needs of specific groups of students. Tools should also be grounded in learning sciences research to increase the likelihood they will improve student outcomes.

10. Intentional human-AI relationship.

It is important to recognize both the opportunities and limitations of AI and human cognition. While AI can be transformative, educators and students must also nurture human skills through deep learning experiences, opportunities for critical thinking, and authentic human interactions so that AI amplifies — not detracts from — meaningful learning experiences.

As stakeholders look to incorporate AI into education, they should leverage past insights for future innovation. While AI presents new opportunities in education, the valuable lessons from prior innovation attempts must not be overlooked. Innovation lies not just in the technology but notably in its change management, implementation, and long-term sustainability. This approach to AI integration in education demands significant effort and resources, but it is essential for creating an educational ecosystem that leverages AI's potential while prioritizing student needs and learning outcomes.



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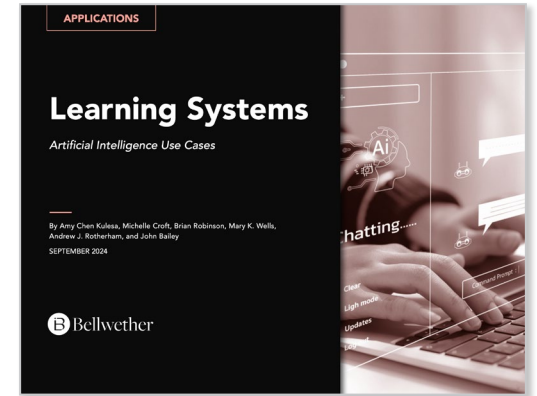
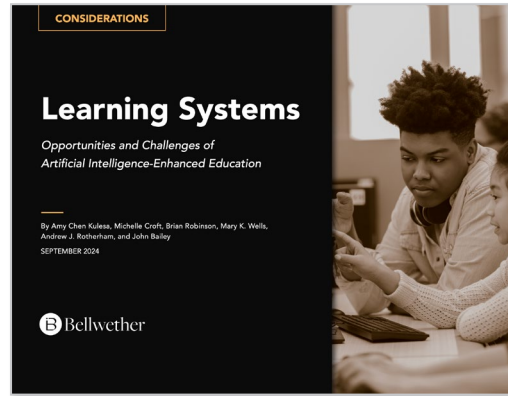
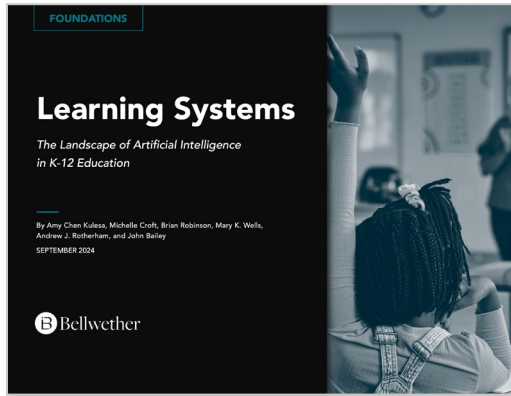
Overview

This report builds upon the material in [Learning Systems: The Landscape of Artificial Intelligence in K-12 Education](#) to provide a more detailed look at the broader ecosystem surrounding AI in education, with an emphasis on quality and equity.

Specifically, this report describes:

1. The characteristics of the large language models (LLMs) and ed tech products of today, particularly around quality.
2. The policy landscape for gaps and emerging policies that prioritize equity and quality.
3. How educators and students are experiencing AI and what is needed to support appropriate adoption and use of AI.

This report is part **two** in a series that looks holistically at AI's impact on learning systems in education.



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An outline of how AI could potentially be used in education, detailing opportunities and risks for each use case.

Trends and challenges in technology, policy, and teacher interest are important in scaling AI in education.

Platform

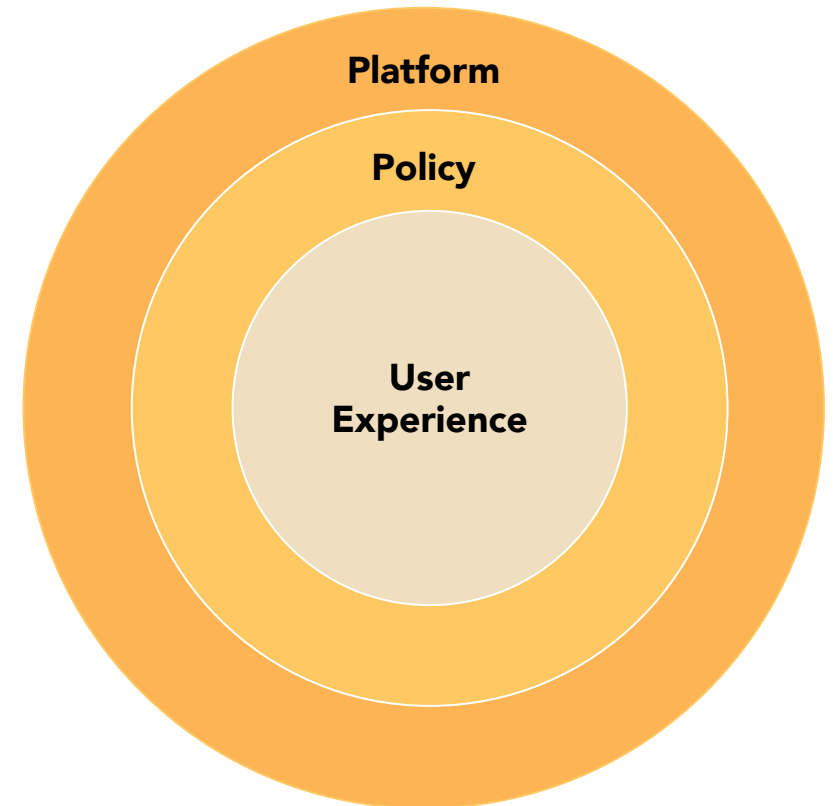
What are the characteristics of LLMs and ed tech products today? What's required for quality LLMs and AI products?

Policy

What are federal, state, and local policies? Where are there gaps? What are examples of emerging policies, especially ones that prioritize equity and quality?

User Experience

How are educators and students experiencing the use of AI on the ground? What are the perceptions and barriers? How does the education sector support educators and young people to discern equitable and quality AI?





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Newer AI tools must contend with learnings from past ed tech reforms.

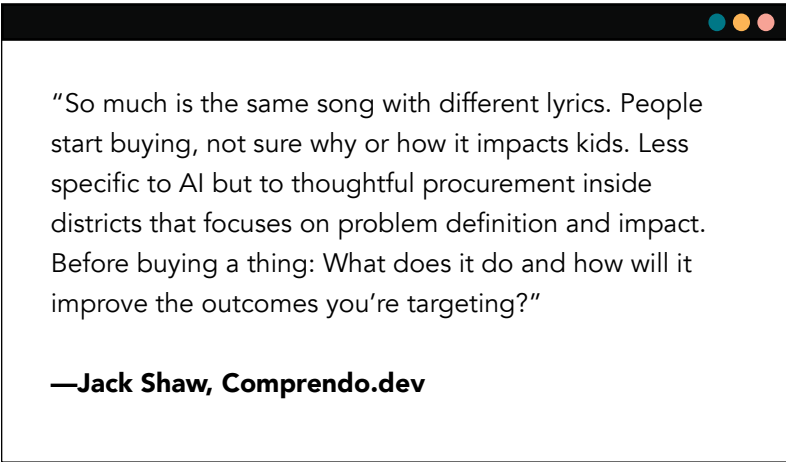
Past initiatives involving technology, such as personalized learning, had a mixed impact. Experts expressed concern that AI in education may face similar difficulties due to perennial challenges with technology and education.

Purchasing Decisions

- Limited capacity and/or strategy to align the district's needs with what the technology solution offers.
- What scales and sells may not be high quality.

Implementation

- Products on their own do not make change.
- Educators must be supported in implementing new initiatives.



“So much is the same song with different lyrics. People start buying, not sure why or how it impacts kids. Less specific to AI but to thoughtful procurement inside districts that focuses on problem definition and impact. Before buying a thing: What does it do and how will it improve the outcomes you’re targeting?”

—Jack Shaw, [Compendo.dev](#)

AI may be different than past ed tech because the technology is more expansive.

AI technology is still nascent and is rapidly advancing. Even in its early stages, there are greater potential applications with AI than with previous ed tech. Some differences with AI include:

- **Speed:** Dramatically accelerates content creation and customization.
- **Modalities:** Incorporating audio and video increases potential uses as well as opportunities for accessibility tools (e.g., audio descriptions).
- **Language-Based:** Uses natural language to interact with the system instead of relying on formulas, menus, or coding.
- **Use of "Agents:"** Specialized AI systems that act autonomously and problem-solve to accomplish a task.

What Are Agents?

GPTs, Google Gems, and Anthropic's Claude Projects are precursors to agents. In the near future, teachers may have a lesson plan agent, a curriculum agent, and a tutoring agent. Teachers could ask the agents to do tasks such as taking a piece of curriculum, creating a lesson plan, and developing a tutoring session for a student.

Examples in Other Industries

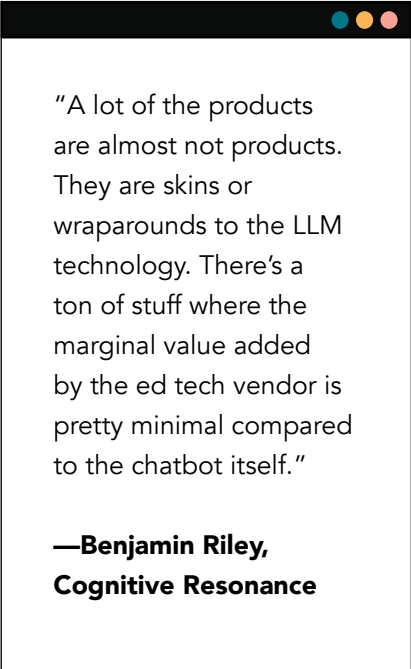
Hippocratic AI: A health care agent that supports administrative nurse tasks such as intake calls.

Devin: An AI agent that can independently plan, execute, and complete complex software engineering tasks.

However, much of the current AI ed tech is built using big tech's models without clear, durable value propositions.

Because training LLMs is extremely resource intensive, most ed tech products are “wrappers” around the few big models. Besides adding only marginal value for users, there is a market risk that the large technology companies may add features that will make the smaller ed tech vendors obsolete, making it important for smaller providers to add value. That value can come from:

- **Fine-Tuning:** Refining the models based on high-quality and education-specific datasets could increase the quality and outputs of the tools.
- **Proximity:** Limited depth of education expertise within most larger technology companies.
- **Flexibility:** Having flexibility to be driven by different back-end LLMs so that it is not reliant on one, thereby both mitigating risks and saving costs.
- **Customization:** Greater ability to customize data and tools for education users.
- **Safety:** Enhanced guardrails that restrict the use of AI to what is appropriate for students and education.
- **Cost:** Lower costs to users, especially if subsidized by initial seed capital or philanthropy.
- **Mission-Driven Focus:** Ability to prioritize mission and the public infrastructure instead of prioritizing profits.



“A lot of the products are almost not products. They are skins or wraparounds to the LLM technology. There’s a ton of stuff where the marginal value added by the ed tech vendor is pretty minimal compared to the chatbot itself.”

—**Benjamin Riley,**
Cognitive Resonance

The ed tech value propositions may be tested soon, as big LLM players are looking to expand into education.

In May 2024, three big tech companies — Google, Microsoft, and OpenAI — all announced new initiatives within education.

| | Google <i>LearnLM</i> | Microsoft <i>Khan Academy</i> | OpenAI <i>ChatGPT Edu</i> |
|-------------------------|--|---|--|
| Date | May 14, 2024 | May 21, 2024 | May 30, 2024 |
| Underlying Model | Google's Gemini 1.0 | Phi-3 | ChatGPT-4o |
| Goal | Conversational tutor | Math tutoring | University-specific GPTs |
| Key Features | <ul style="list-style-type: none"> • Uses content across Google products, including YouTube, Gemini apps, Circle to Search, and Google Classroom. | <ul style="list-style-type: none"> • Phi-3 is a small language model (SLM), which may be more cost efficient and easier to train for the purposes of tutoring. • Planning to incorporate feedback based on students' written notes. | <ul style="list-style-type: none"> • Offers customization and data privacy capabilities. • Includes text, vision, and data analysis. |

While large companies have significant resources and technological expertise, there remains opportunity to strengthen connections between developers and education practitioners.

However, the way the underlying AI models are constructed contributes to concerns about their use.

Building Models

- **Data Bias:** AI models can inherit biases from training data; AI models trained in data inherit existing bias across racial, cultural, gender, language, political, and even pedagogical differences.
- **Over/Under-Fitting:** AI models may be too specialized or too generalized to address new, unknown situations.
- **Reproducibility Issues:** Hard to replicate AI model results.
- **Environmental Impact:** High energy costs are needed for training models.

Bad Actors

- **Misinformation (Intentional and Unintentional):** AI models can be used to generate convincing but fake content, including images, audio, and video “deepfakes.”
- **Spam/Bots:** Bad actors can use AI tools to develop a greater volume of malicious content or code that may also be higher quality.

Nature of Output

- **Opacity:** Most AI models are “black boxes” and provide no insight into how outputs are generated; even model developers do not fully understand why models act the way they do.
- **Accuracy:** AI models can provide inaccurate or misleading output, which are sometimes called “hallucinations.” The chance for errors increases when there is limited high-quality data on a topic.

Ownership of Work

- **Cheating:** AI models can facilitate academic dishonesty.
- **Copyright and Intellectual Property (IP) Violations:** There is undefined legal ground for when an AI model trained on copyrighted material or IP may violate laws or lead to confusion.
- **Worker Value-Add:** As more work is supported — or done — by AI tools, it may change how companies compensate or employ workers.

Bias — A Significant Concern in Education That Is Difficult to Address

Efforts to offset existing biases are building in a set of new counter-biases and it is difficult to predict how they will play out, given the opacity and complexity of AI models.

However, bias has long been present in education, with or without AI.

“The use of AI in decision-making can reduce human subjectivity, but it can also do the exact opposite when AI systems are powered by biased datasets and algorithms, producing discriminatory outcomes at scale and posing immense risks to businesses and societies.”

—UNESCO

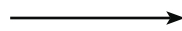
There are ways to improve the accuracy and minimize errors and biases; approaches require better data.

| | Retrieval-Augmented Generation (RAG) | Fine-Tuning an LLM |
|--------------------|---|---|
| What Is It? | Combines retrieval-based (i.e., fetches relevant data from a large database) and generation-based models (i.e., uses retrieved information to generate responses) to improve the quality of responses. | Uses a specific dataset or task to improve upon an LLM to adapt it for a particular application. This process adjusts the model's parameters to better suit the new data. |
| Strengths | <ul style="list-style-type: none"> • Accesses up-to-date information. • Reduces hallucination by grounding responses in retrieved facts. • More cost-effective. • Greater versatility in tasks (e.g., answering questions, chatbots, content generation). | <ul style="list-style-type: none"> • Specializes in a specific task. • Tailored to a specific domain or application (e.g., medicine or education). • Improves accuracy by focusing on relevant patterns and knowledge. |
| Weaknesses | <ul style="list-style-type: none"> • More complex infrastructure. • Needs quality data for relevant, non-biased responses. | <ul style="list-style-type: none"> • More costly due to substantial computational resources and time. • Needs quality data for relevant, non-biased responses. • Over-specialization can reduce its versatility. |

Both methods require quality data. Per a RAND study, "many AI projects fail because the organization lacks the necessary data to adequately train an effective AI model." Current education data infrastructure can benefit from better data.

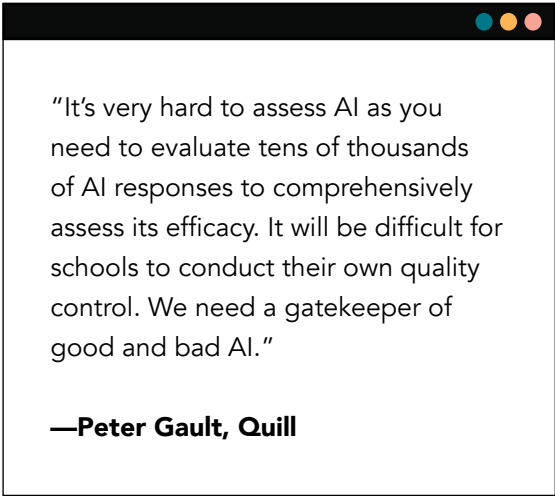
Benchmarks and “arenas” are used to evaluate or improve quality; education-specific examples are limited.

The Challenge in Measuring AI Model Quality



The Solution in the Tech Industry

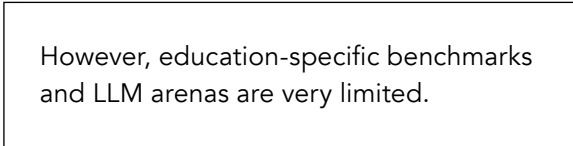
AI outputs are not predictable or static, making traditional ways of measuring quality, such as rubrics, no longer viable.



“It’s very hard to assess AI as you need to evaluate tens of thousands of AI responses to comprehensively assess its efficacy. It will be difficult for schools to conduct their own quality control. We need a gatekeeper of good and bad AI.”

—Peter Gault, Quill

- **Benchmarks:** A set of standardized tests or tasks to evaluate performance and accuracy. Benchmarks rely on high-quality data to allow for comparisons. For example, grade system benchmarks could be the overall agreement with a human rater, or agreement on certain features such as grammar, language use, or reasoning.
- **LLM Arenas:** Online tech and academic communities have developed an open platform to evaluate LLMs by human preference in the real world.



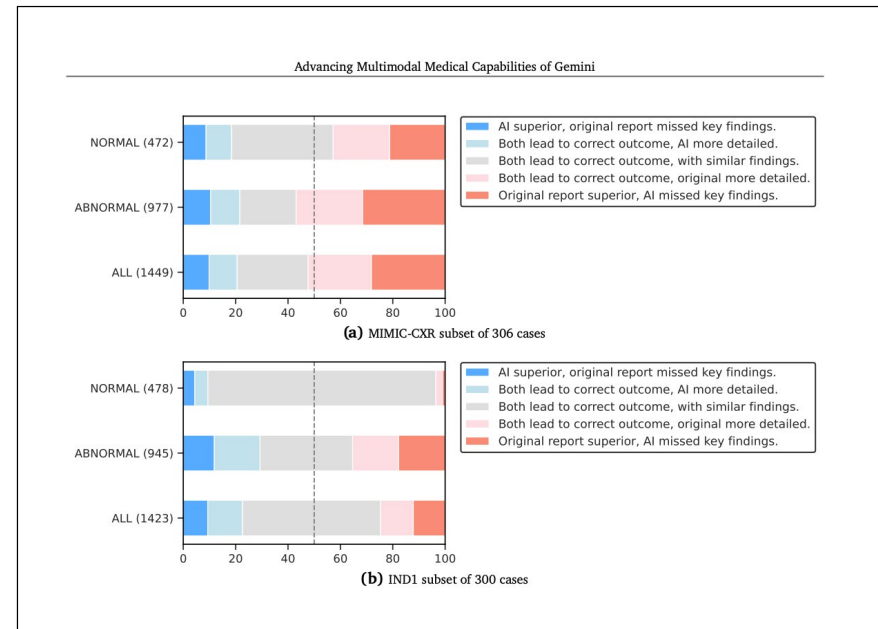
However, education-specific benchmarks and LLM arenas are very limited.

An example from medicine illustrates the value and possibility of high-quality data.

Google developed Med-Gemini by fine-tuning Gemini using a mix of public and private datasets to evaluate medical images (e.g., skin lesions, chest X-rays). Examples of the datasets include:

- **Slake-VQA:** Bilingual dataset annotated by physicians with images, question-answer pairs.
- **PMC-OA:** More than 2 million image-caption pairs from scientific papers.
- **Computed tomography (CT) images:** More than 750,000 CT studies with radiology reports from three major hospital regions in the U.S.

Using the fine-tuning and benchmarks, Med-Gemini was able to accurately classify nearly three-fourths of head and neck CT studies cases, even when presented with abnormal images.

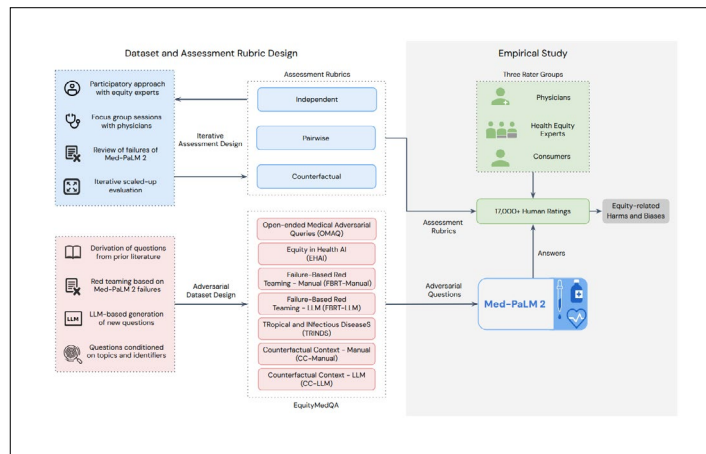


The medical field also provides an example for possibilities of building more equitable tools.

Google's Health Equity Initiative provides examples that education could follow.

Toolbox for Surfacing Health Equity Harms and Biases in LLMs

Creates a framework to assess if medical LLMs are perpetuating biases using an iterative, participatory approach involving physicians, health equity experts, and consumers.



The HEAL Framework

Outlines a process to avoid creating and reinforcing bias, including:

- Understanding factors linked to health inequities.
- Identifying and measuring preexisting health disparities.
- Measuring performance for each subgroup.
- Assessing the likelihood that the tool prioritizes performance.

More Representative Datasets

The HEAL framework led to the creation of an open-access dermatology dataset based on two skin-tone scales to represent a broader collection of conditions and skin types.

In education, public access to high-quality data is a barrier to improving and testing the LLMs.

Improving and testing the LLMs requires **high-quality data**. There are public datasets available for fine-tuning and benchmarks, but the datasets are older, limited in grade levels, and do not have subgroup breakdowns.



Automated student assessment prize dataset and short answer scoring dataset.



30 International Mathematical Olympiad geometry problems from 2000 to 2022.

LLEMMMA ■

Math data built from a mix of math-related text and code.



20 math datasets that cover different grades, question types, and difficulty levels, available in English and Chinese.

Organizations with greater access to student data, such as assessment vendors, may be at an advantage in developing more robust systems.

“Other public datasets are described as ‘opaque, lack documentation, and are likely biased.’”

—**Mark Schneider, U.S. Department of Education Institute of Education Sciences Former Commissioner**

Beyond concerns about model quality, there are concerns regarding poor product designs.

Improved models are insufficient to develop robust AI tools. Similar to ed tech products of the past, not all AI products are well designed. Many products have not thoughtfully integrated AI and do not have a research base grounded in learning sciences.*

Design For a Purpose

“AI projects fail because the organization focuses more on using the latest and greatest technology than on solving real problems for their intended users.”

—**RAND, 2024**

Design For *All* Students

“A lot of ed tech is not designed to support learners who struggle cognitively and socially.”

—**Dan Meyer, Amplify**

Design Built Upon Research

“Any innovation needs to be grounded in the research for teaching and learning, especially for students with learning differences and multilingual learners. This is true for anything but especially for AI due to the speed. It’s a land-grab moment for AI companies with people trying to sell what they can. We need to make sure we’re scaling something we believe in, something that’s beneficial for all students.”

—**Cameron White and Erin Stark, NewSchools**

Though limited, there are emerging products with thoughtful designs.

Design For a Purpose



A clearly articulated theory of action of how the tool will impact outcomes.

Example: Immediate, sentence-level feedback will help students to become better readers and writers.

Design For All Students



Grounded in Universal Design for Learning, a framework “to ensure that all learners can access and participate in meaningful, challenging learning opportunities.”

Example: Interactive tools that provide clear alternative text can enhance learning for all students by offering multiple representations.

Design Built Upon Research

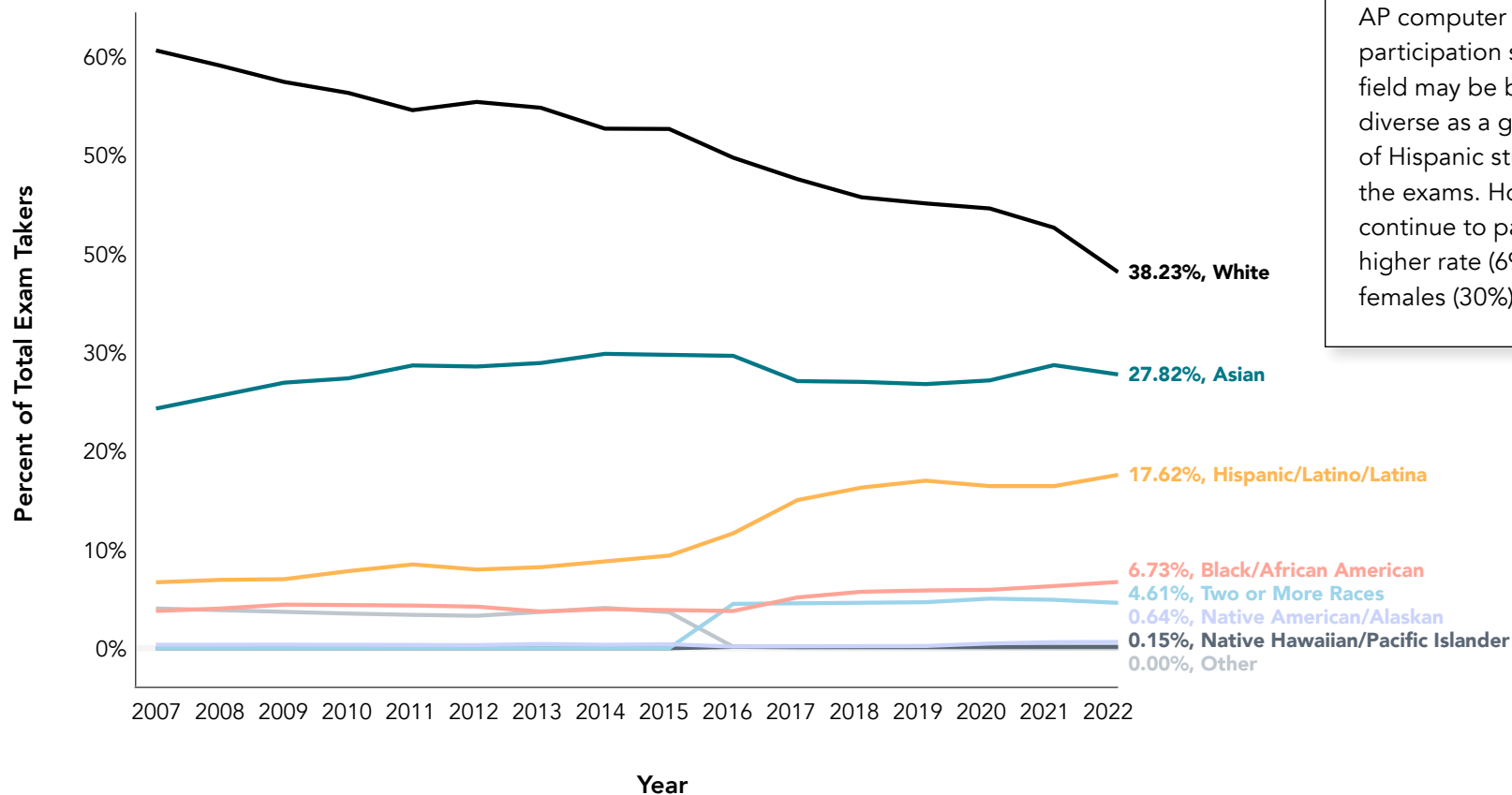


Based on high-quality learning science research of what works to positively impact student outcomes.

Example: Expand access to grade-level content standards across different language and reading levels.

Thoughtful and inclusive design benefits from diverse perspectives; indicators suggest that the AI field has the potential to become more diverse.

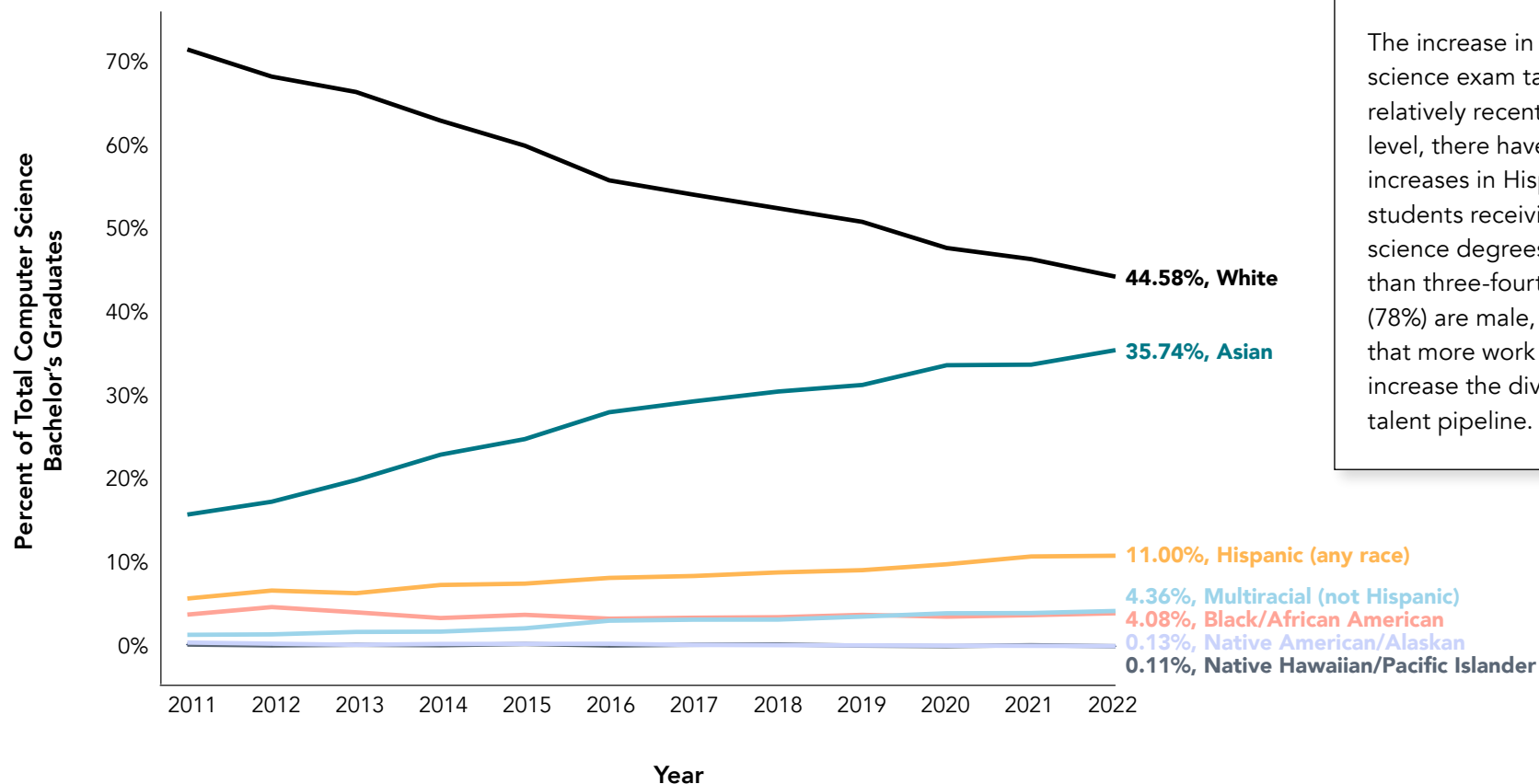
Advanced Placement (AP) Computer Science Exams Taken By Race/Ethnicity, 2007-2022



At the high school level, AP computer science exam participation suggests that the field may be becoming more diverse as a greater percentage of Hispanic students are taking the exams. However, males continue to participate at a higher rate (69%) compared to females (30%).

However, the increased diversity at the high school level has not yet reached postsecondary.

Ethnicity of New Resident Computer Science Bachelor's Graduates in the U.S. and Canada, 2011-2022



The increase in AP computer science exam taking is still relatively recent. At the college level, there have been slight increases in Hispanic and Black students receiving computer science degrees. Similarly, more than three-fourths of graduates (78%) are male, indicating that more work is needed to increase the diversity of the AI talent pipeline.



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Policy has yet to catch up with AI's rapid growth in many sectors, but particularly in education.

Policy often lags behind innovation.

- Sometimes the lag is *beneficial* — laws, regulations, and policies can be better informed about potential risks and benefits.
- Sometimes the lag is a *barrier* — it may delay adoption or fail to guard against inappropriate use.

Federal Level

- Greatest opportunity to provide oversight of LLMs and AI generally.
- Potential to eliminate the patchwork of AI laws coming up from the states by providing a federal framework.

State Level

- Provides guidance on how to properly use AI within an education context, including data privacy and security, teacher training requirements, and how to select tools.
- Guides internal policies on how to use AI within the organization (e.g., making data more accessible, writing assessment reports).

District Level

- Builds upon the state guidance to create district-specific policies (e.g., allowable tools and use of data, educator professional development).
- Engages closely with and addresses concerns from key stakeholders, such as collective bargaining organizations, families, and communities.

Without robust **state** guidance, it can be challenging for **districts** to create policies.

Practitioners want and need strong guidance and policies to navigate AI.

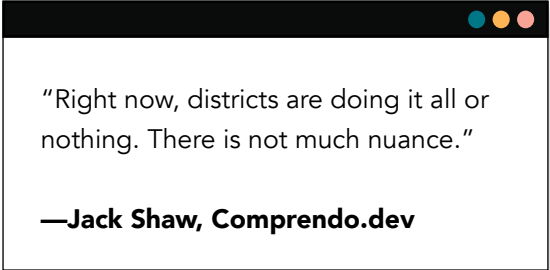
A RAND survey of teachers found that 30% of educators who do not use AI cited a lack of school or district guidance as a barrier to using AI products and tools. Policies are needed to help stakeholders determine appropriate and safe ways to integrate this new technology into schools, especially given the concerns about quality and bias as well as ensuring equitable access. There can be significant consequences to not having a policy in place:

Risks to Students

- **Inconsistent Teacher Policies:** Within a school, AI instructional practices and/or what constitutes an academic violation may vary from class to class.
- **Exposure to Inappropriate Content:** AI instruction and exposure should be developmentally appropriate (i.e., some tools are better suited for older age groups).
- **Equity Gaps:** A widening digital divide among students may develop.

Risks to Schools

- **Data Privacy:** There may be violations of data privacy laws if educators are using tools inappropriately.
- **Efficiency Loss:** A lack of a policy can discourage use, including tools that can make teaching easier.



“Right now, districts are doing it all or nothing. There is not much nuance.”

—**Jack Shaw, Compendo.dev**

K-12 education has distinct data privacy policies that ed tech must adhere to.

Schools are governed by different data privacy laws than the private sector:

Federal Laws

- **Family Educational Rights and Privacy Act (FERPA):** Protects a student's educational record, including the use and release of personally identifiable information (PII).
- **Individuals with Disabilities Education Act (IDEA):** Broader than FERPA in protecting the confidentiality of PII, information, and records for children with disabilities.
- **Protection of Pupil Rights Amendment (PPRA):** Provides parents of K-12 students with rights regarding certain surveys.

Without training and guidance, the different legal frameworks could make it challenging for educators to navigate privacy concerns.

The majority of states have their own data privacy laws that are more restrictive than the federal laws, limiting how student data can be used.

At the federal level, most of the action has been through executive orders.

| | Date Introduced | Executive Order |
|---|------------------------------|--|
| President Trump’s Executive Order and the National AI Initiative Act of 2020 | February 2019; March 2020 | Established the American AI Initiative, which “identified five key lines of effort, including increasing AI research investment, unleashing Federal AI computing and data resources, setting AI technical standards, building America’s AI workforce, and engaging with international allies. These lines of effort were codified into law as part of the National AI Initiative Act of 2020.” |
| President Biden’s Executive Order | October 2023 | Requires the Secretary of Education to “develop resources, policies, and guidance regarding AI. These resources shall address safe, responsible, and nondiscriminatory uses of AI in education, including the impact AI systems have on vulnerable and underserved communities, and shall be developed in consultation with stakeholders as appropriate.” |
| Office of Management and Budget (OMB) Directives | April 2024 | Requires federal agencies to develop and implement “safeguards when using AI in a way that could impact Americans’ rights or safety,” improve transparency about agency AI uses, remove certain barriers to federal agency use of AI, and require chief AI officers and governance boards at each agency. |

Additional federal legislation can support the broader AI landscape; however, significant near-term progress is unlikely.

At least 140 pieces of federal legislation have been proposed to address AI, including two comprehensive bills that could provide a national framework for data privacy. However, political gridlock, especially during an election year, makes passage of any AI legislation unlikely in the near future.

Furthermore, the U.S. Supreme Court's decision to overturn the Chevron doctrine will likely slow down any attempts by Congress or the executive branch to regulate data privacy and AI. Both of the bills below are currently stuck in congressional committees.

- **American Privacy Rights Act:** Bipartisan legislation that seeks to create a federal standard for data privacy. The bill would apply to entities that collect, possess, process, retain, or transfer covered data, including most nonprofit organizations.
- **Kids Online Safety Act:** Legislation aimed at increasing protections for children on online platforms. Although the bill is primarily aimed at social media platforms, it could extend to online education platforms.

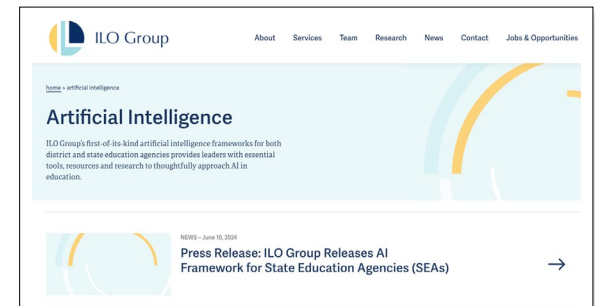
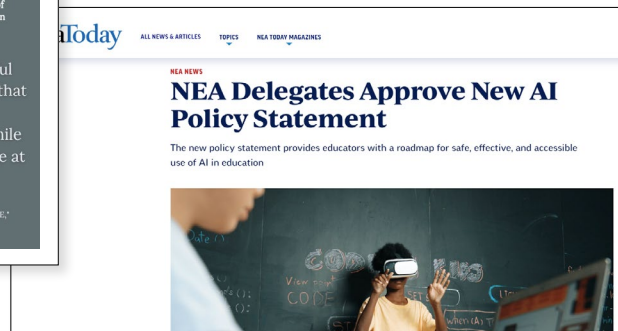
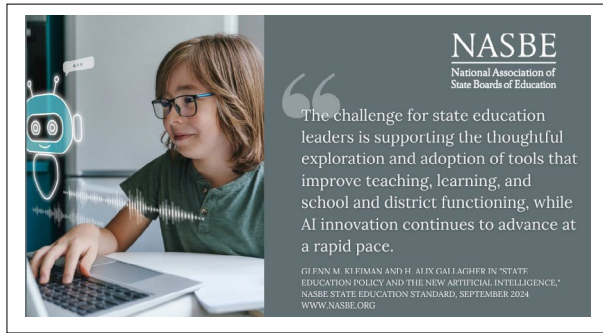
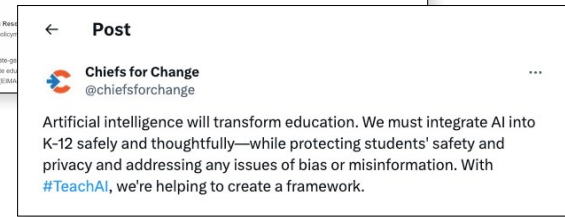
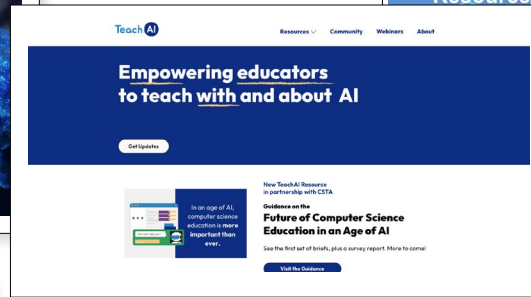
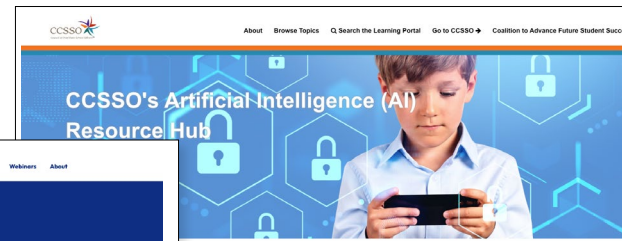
Points of Contention

Points of contention among policymakers and interest groups regarding these proposed bills include:

- A private right of action that would allow consumers to seek financial damages in court.
- Provisions related to civil rights and AI algorithmic protections, such as AI impact assessments and restricting a user's ability to opt out of having their data used for algorithmic decision-making about consequential opportunities (i.e., housing, credit, and employment).
- The preemption of state laws, which could provide more protections than federal law (although child privacy laws would be exempt).

Initiatives are emerging from a range of organizations to support AI in education.

These initiatives include guidance, frameworks, and recommendations to inform and support state and district policy development.



Amid federal uncertainties, states and districts are collaborating with experts to begin developing policies.



Opportunities for states and districts to collaborate with other industry experts are important because they do not have AI expertise and must prioritize other concerns (e.g., teacher shortages and student mental health) over AI.

TeachAI

Thirty-nine states participate in TeachAI's community where one goal is to foster policy adoption. TeachAI recommends that early guidance includes information about:

- Equitable access to AI technology.
- Minimizing bias.
- Using legally and ethically developed training sets and models.
- Adhering to existing privacy and security laws and policies.
- Preserving human decision-making.

EDSAFE AI Alliance

Several school districts have joined EDSAFE AI Policy Labs, a network of peer school districts with shared resources and materials to assist in the development of AI guidance, policies, and problem-solving strategies. Participating districts include:

- New York City Public Schools
- Gwinnett County Public Schools (Georgia)
- Cañon City Schools (Colorado)
- El Segundo, Lynwood, and Santa Ana Unified School Districts (California)

District demand for technical assistance is high. Nearly 180 districts expressed interest in participating in EDSAFE AI Policy Labs, far exceeding the network's current 12-district capacity.

Additionally, there are emerging recommendations and guidance for states and districts from nonprofits ...



Framework for Implementing AI in State Educational Agencies (SEAs)

The framework identifies statewide political, operational, technical, and fiscal considerations such as:

- Forming a task force.
- Creating research agendas.
- Advancing AI and digital literacy.
- Conducting AI readiness assessments.
- Developing funding mechanisms.

The framework also provides states with examples of division-specific AI use cases.



Framework for AI-Powered Learning Environments

The framework is organized across two phases: now until the end of 2025 (learning phase) and 2026-2030 (integration and scaling phase). For the near term, the National Center on Education and the Economy recommends focusing on:

- Promoting AI literacy.
- Enabling student and teacher AI use.
- Emphasizing strong writing, reading, speaking, and critical thinking skills to effectively work with AI.
- Adopting AI adaptive instruction to scaffold students in meeting grade-level proficiency.
- Supporting teachers.
- Using AI to support leaders.

... And from the nation's largest teachers unions.



Policy Statement on the Use of AI in Education

Centered on five principles the National Education Association frames as essential to the question of AI in education:

- Educators must remain at the center of education.
- Evidence-based AI technology must enhance the educational experience.
- There must be ethical development/use of AI technology and strong data protection practices.
- Equitable access to and use of AI tools must be ensured.
- There must be ongoing education with and about AI — AI literacy and agency.



Commonsense Guardrails for Using Advanced Technology in Schools

Draws upon the expertise of classroom educators and school support personnel to provide a living framework to help navigate AI in schools. These guardrails from the American Federation of Teachers are undergirded by six core values:

- Maximize safety and privacy.
- Promote human interaction and individuality.
- Empower educators to make educational decisions.
- Advance equity and fairness.
- Advance democracy.
- Teach digital citizenship and balance.

One widely adopted framework is the EDSAFE AI Framework.

The EDSAFE AI Alliance is a “global coalition of organizations representing stakeholders across the education sector” and coordinated by InnovateEDU. The alliance aims to “build and develop an ecosystem reflecting best practices for AI use in education.” The SAFE framework was developed to further this goal and has been embraced widely in the U.S. and abroad.

| | What Does It Stand For? | What Does It Mean? |
|----------|--|---|
| S | Safety <i>Security, Privacy, Do Not Harm</i> | Prioritize respecting individual privacy rights, securely protecting individual data, and minimizing risks to individuals and society. |
| A | Accountability <i>Defining Stakeholder Responsibilities</i> | Identify who is responsible for creating AI policy and hold users accountable for adhering to those policies and any high-risk decisions made using AI systems. |
| F | Fairness and Transparency <i>Equity, Ethics, and Mitigating Bias</i> | Scrutinize data from AI systems and ensure users are treated equitably in terms of outcomes and experiences. |
| E | Efficacy <i>Improved Learning Outcomes</i> | Identify metrics to evaluate the use and impact of AI technology on improving student learning outcomes. |

State and district guidance for safe AI use is primarily focused on security processes and safe data management.

S

Safety

West Virginia

- In addition to complying with existing data privacy laws, advises educators not to input identifiable student data in public AI models (even if there is parental consent to using a student's data with AI models) and prohibits entering confidential or personally identifiable data into unauthorized AI tools (e.g., those without approved data privacy agreements).
- Encourages schools to implement reasonable security measures, including cataloging AI tools used and the information required, establishing rules for who can use AI tools and for what purposes, maintaining up-to-date information about the technical details and security implications of AI tools used, and ensuring staff are adequately trained on how to use AI tools securely and safely.

California — Santa Ana Unified School District

- Forbids faculty and staff from requiring students to use non-approved AI applications, using non-approved AI-enabled student surveillance systems, or putting any PII into non-approved applications.

Guidance for accountability of AI emphasizes role clarity throughout the system.

A

Accountability

Virginia

- Identifies the specific role of each SEA (K-12 and higher education), which include to create resources, processes for approving the use of AI tools, and training toolkits and workshops.
- Outlines the responsibilities of local educational agencies (LEAs) and educators, including to establish a culture of integrity, follow an acceptable use policy, design assignments and assessments that promote critical thinking and original ideas and human judgment, and clarify the expectations for the use of AI in assignments.

California — El Segundo Unified School District

- Requires that the superintendent (or designee) “establish mechanisms for accountability” for using AI (emerging technologies) with “regular reviews of these systems and their impact on students,” while the (AI)dvisory Team, Technology Advisory Committee, and district technology staff “review vendors and tools for potential data security and usage risks.”
- Parents and students must both sign a Responsible Use Policy form that specifies use obligations and responsibilities before the “student is authorized to use the district’s technological resources,” including GenAI.

State and district guidance regarding fairness in AI is primarily focused on equity of access and experience.

F

Fairness and Transparency

Oregon

- Encourages educators to keep equity implications at the forefront when designing AI policies, including algorithmic bias, the potential for inaccuracy or hallucinations, and equity of access.
- Provides strategies to address the equity impacts of GenAI use, including training educators, students, and families in AI and digital literacy and following Universal Design for Learning guidelines.

Washington — Peninsula School District

- Extends the district's commitment to inclusivity to AI and encourages AI-powered resources to be thoughtfully designed to support all students, including multilingual learners and learners with disabilities.

The largest gap in guidance is around efficacy.

E

Efficacy

At this moment, there is a gap in state and local guidance with respect to efficacy. Of the guidance reviewed, only California's El Segundo Unified School District (whose guidance is aligned with the EDSAFE Framework) mentions efficacy and directs the district to:

“Establish clear metrics and mechanisms for evaluating the effectiveness of AI-powered tools in improving student learning outcomes, including quantitative and qualitative measures, such as student performance data, teacher feedback, and student surveys.”

There is an opportunity to define and measure the impact of AI and ed tech tools on student learning outcomes.

States are issuing guidance on other elements of good AI use, including the need for a human-centered approach.

What is a human-centered approach to AI?

A human-centered approach to AI guidance emphasizes the need to “keep humans in the loop.” With this approach, AI is a tool to support decision-making, increase teacher effectiveness, and enhance student learning. It is not a replacement for teachers in the classroom or human judgment.

State Guidance Example — Washington

Washington’s guidance is centered on a human-centered approach, which is embedded in the state’s philosophy: “... uses of AI should always start with human inquiry and always end with human reflection, human insight, and human empowerment.” Guidance given to districts in furtherance of this approach includes:

- Encouraging AI literacy for students and teachers so that, at a practical level, they can understand how the technology works and why it produces the results that it does.
- Providing professional development and support to teachers to help them integrate AI into their pedagogy, curriculum, and assessment, and facilitate their collaboration and innovation with AI.
- Aligning AI with more effective learning practices and principles, including “supporting learner agency, fostering collaboration, enhancing feedback, and promoting critical thinking.”
- Fact-checking and evaluating the outputs from AI tools to determine how the information should be shared and used.

For districts, some are taking a proactive and flexible approach, given the absence of state guidance.



District Guidance Example — Chicago Public Schools (CPS)

As of July 2024, Illinois had not released any state guidance around the use of AI in public education. As a result, CPS, the largest district in the state, proactively started to work on its own AI initiatives:

- **AI Guidebook:** The district has developed a set of guidance around safe and effective AI use. The guidebook is intentionally not policy, thereby having the flexibility to have more frequent updates, pending technology or state guidance updates.
- **Discrete Use Case:** In sequencing the district's AI initiatives, CPS is beginning with integrating AI features into Skyline (SkAI), the district's math curriculum. Within Skyline, the starting place will be with the curriculum designer team to develop greater in-house content.
- **In-House Control:** CPS is intentionally prioritizing building AI capacity in-house. Vendor partnerships do exist but are more limited to avoid heavy reliance on external capacity.

Experts suggest the AI policy development process be adaptable and inclusive, and lean on existing values.

Considerations For Developing Equitable and Effective AI Policies

- 1. Equitable:** Evaluate AI-related policies with an equity lens to ensure they are anticipating and mitigating potential biases and harms (e.g., vetting AI tools to ensure they are built on fair models that use representative datasets and actively mitigate algorithmic bias).
- 2. Inclusive:** Policies should proactively consider special populations. For example, to support students with disabilities, AI policies and practices must uphold the civil rights of students with disabilities and adhere to considerations around student privacy, transparency and collaboration, responsible procurement, ongoing audits, and rigorous accountability.
- 3. Aligned:** Consult existing technology policies to determine whether new policies specific to AI are needed or if existing policies can be modified to include AI considerations.
- 4. Collaborative:** Involve students, teachers, and community members using or being impacted by decisions made using AI technology.
- 5. Flexible:** Create flexible policies that are reviewed as technology continues to evolve rapidly.

Significant challenges lie ahead for states and districts interested in developing AI policy guidance.

Capacity

- SEAs and LEAs are dealing with many pressing issues, including teacher shortages, responding to COVID-19 pandemic learning loss, declining public school enrollment, and chronic absenteeism.
- There is limited capacity to prioritize developing strong AI policies, especially when it is rapidly and consistently evolving.
- There is also limited talent capacity, as most SEAs and LEAs are not likely to have staff with the skills and expertise to develop strong AI policies on their own.

Equitable Access

- Even though AI tools are currently financially accessible (many models have free options), exposure, use, and development of AI literacy varies by race, age, gender, and educational attainment.
- A legal challenge to the Federal Communications Commission's E-Rate program, which funds technology access and internet services for low-resourced communities, could significantly impact equitable access to AI technology and tools. The case will go before the U.S. Supreme Court in October 2024.

Evidence Base

- AI use and policy should rely on evidence-based methods and practices; however, robust, large-scale independent evidence demonstrating the effectiveness, safety, or benefits of AI in education is limited.

Infrastructure

- Implementing AI widely throughout a district or state public school system will require a robust technical infrastructure, including the quality and usability of underlying data, the interoperability of existing systems, data security, change management and roll-out processes, and internet connectivity.



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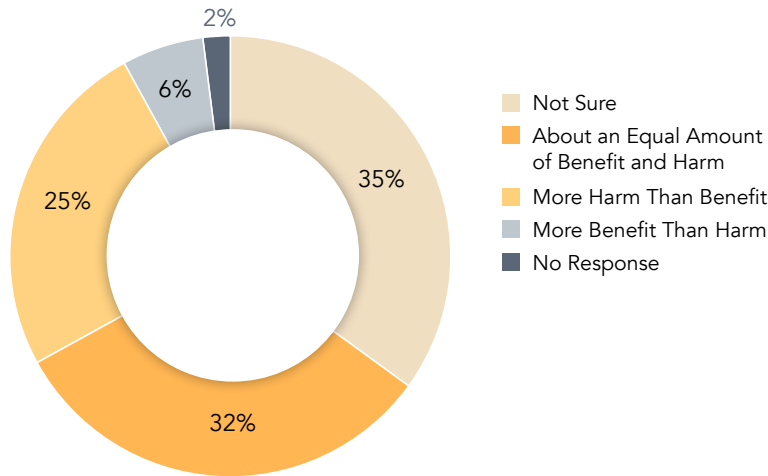
Acknowledgments

About the Authors

About Bellwether

Some teachers are skeptical about the benefits of AI tools in K-12 education.

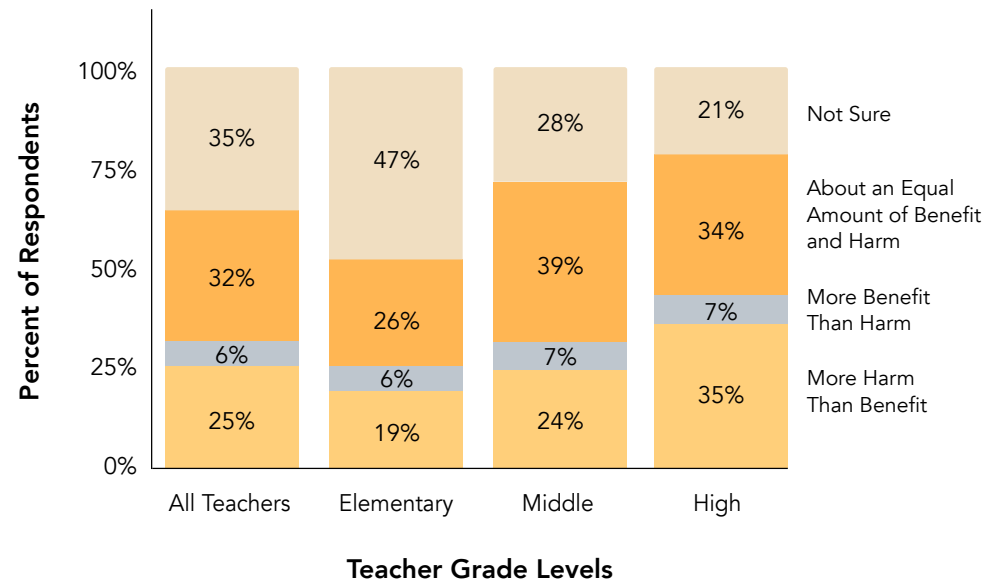
Percent of Public K-12 Teachers Saying There Is Generally _____ When It Comes to the Use of AI Tools in K-12 Education



One quarter of teachers believe there is more harm than benefit in the use of AI tools in K-12 education. The harm concerns overlap with the **more than 40% of teachers** (both who use and do not use AI) who have general concerns about the use of AI in society as a whole.

Teacher age may contribute to this skepticism, as the average teacher is 43.1 years old, which is older than the typical ChatGPT user.

Percent of Public K-12 Teachers Saying There Is Generally _____ When It Comes to the Use of AI Tools in K-12 Education



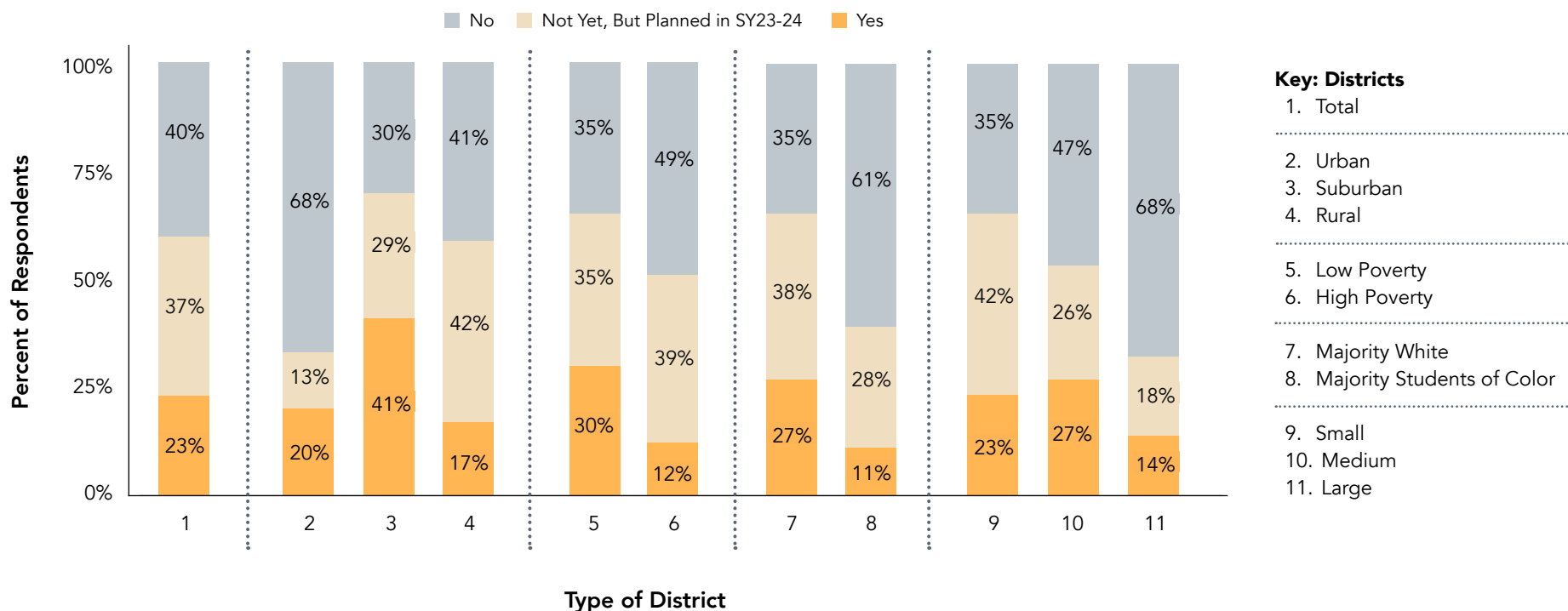
High school teachers reported the most concern about AI tools in K-12 education.

Inequitable access to training may contribute to teacher reluctance to use AI tools.

Districts more likely to serve historically marginalized student populations are less likely to report offering AI training during the past school year.

Percentage of Districts That Have Provided Training (Or Had Plans to Provide Training) to Teachers About AI Use

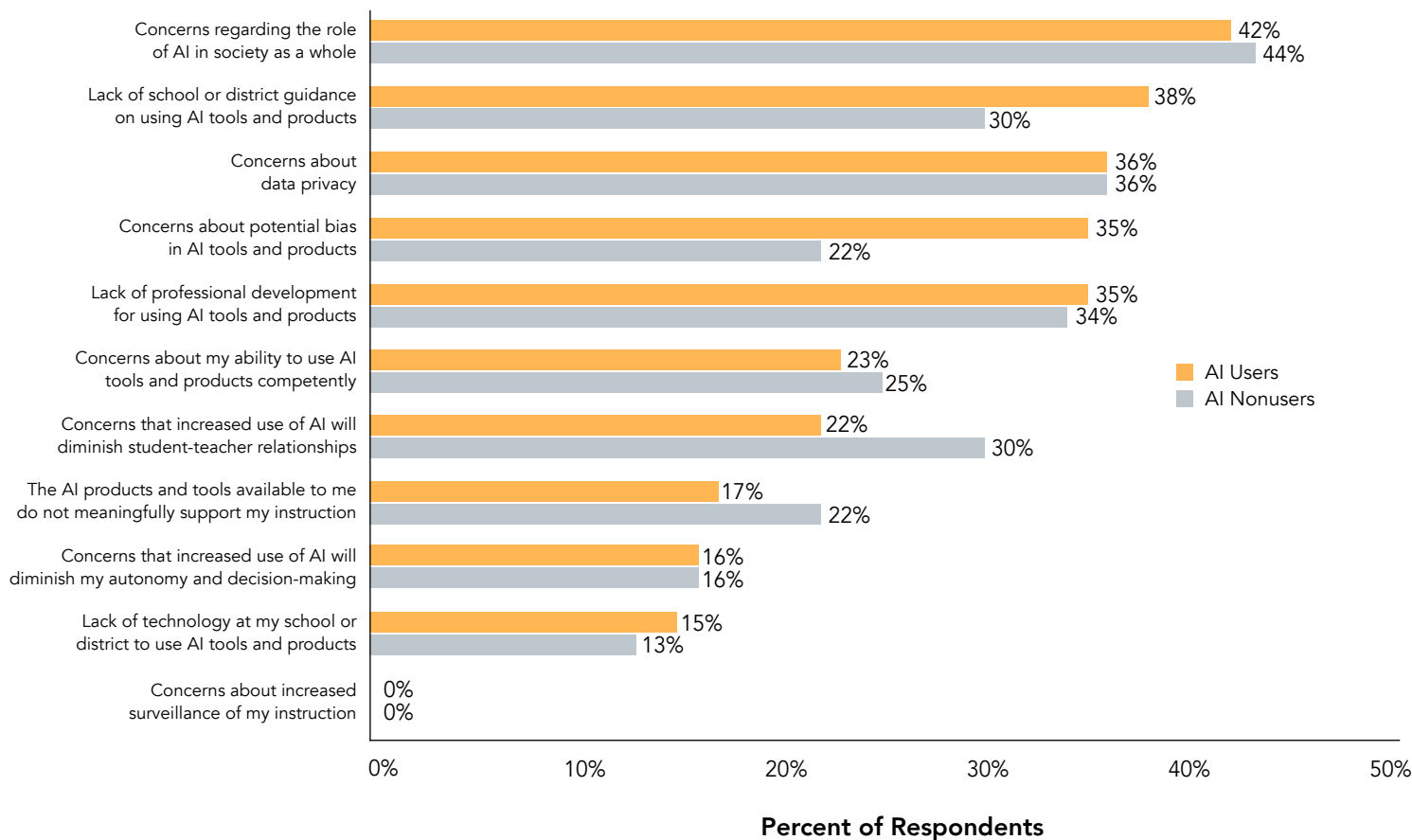
Upcoming district budget constraints have the potential to exacerbate these training inequities.



Efforts to reduce risk may help address some teacher-identified barriers to using AI in the future.

Top-cited barriers to AI use include the role of AI in society, lack of school or district support (i.e., guidance and professional development), and data privacy.

Which of the following do you consider to be the top 3 barriers to expanding your use of AI products and tools in your work as a teacher?



Parent Concern About Data Privacy

A Walton Family Foundation survey found that 95% of parents strongly or somewhat agreed that “the fact that AI could be training itself off of information I put into it makes me more concerned about using it.”

Educators must better understand AI to appropriately select and incorporate AI tools.

Given the risks inherent in AI, all educators must have basic AI literacy. A successful strategy for increasing literacy is to start with the leaders and interested teachers and expand to the whole staff.

Leaders

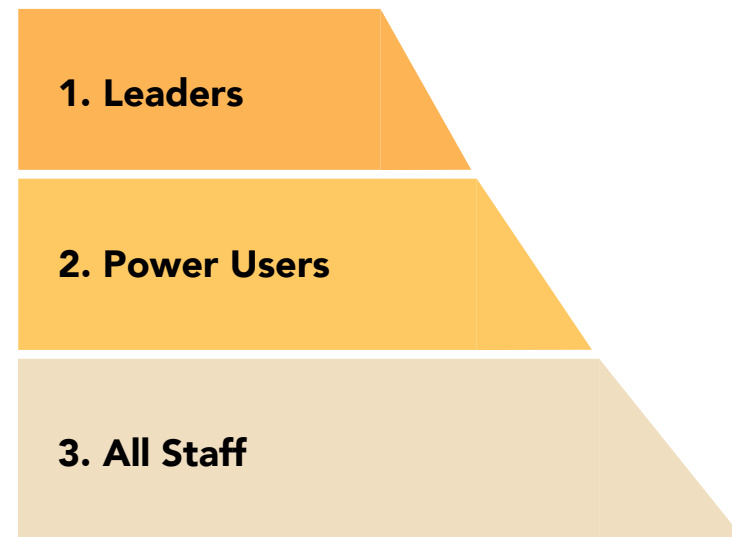
Build understanding of AI to think through use cases and implications.

Power Users

Recruit teachers already using AI to test new tools or serve on an AI leadership team.

All Staff

General training and exposure to AI and AI tools.



“We are purposely going very slow and thoughtfully. How can this make you a better teacher, save you time? Teachers are more reluctant to put something they don’t understand or trust in front of a kid.”

—Josh Clark, Landmark School

For example, some practitioners have been thoughtful about their AI change management.



Washington Leadership Academy

- **Leader Buy-In:** Executive director encouraged the leadership team to experiment with AI and how it could be used to close opportunity gaps.
- **Tailored Training:** Preliminary department-specific training sessions offered for STEM and humanities.
- **Understanding Needs:** Gathered baseline data on staff perception, use, and questions about tools.
- **AI Working Group:** Formed to include leaders, teachers, and senior-year students to serve as “AI ambassadors” to share information about AI and provide one-on-one support on using AI tools.



Summit Public Schools

- **Leader-Led:** On an ongoing basis, executive director experiments with a promising tool, then suggests it to teacher “power users” for further testing.
- **Teacher-Led:** Teachers are out front learning about and trying new tools.

Summit teams maintain a coherent and safe approach to using these tools through a collaborative, non-hierarchical culture and a shared set of AI values and guidelines. This fosters ongoing dialogue between leaders and teachers, structured by organizational principles and an approach to engaging with evolving AI technology.

AI literacy can also help educators select quality tools to support sustainability.

There are four areas of AI literacy for educators. Early adopters recommend starting with general awareness and then building skills so that educators can appropriately use tools.

NOVICE

Awareness and Comfort With AI

Helping teachers understand how and when AI can be used.

Ability to Use All-Purpose LLMs

How to create prompts and evaluate the quality of the output. *Example: [The AI Education Project](#)*

Ability to Use Ed Tech Tools and Apps

How to select, evaluate, and use quality tools. *Example: [Common Sense Media](#)*

Ability to Build Tools

How to create own tools for better customization (i.e., educators as developers and/or educators using ed tech tools to build). *Example: [Playlab](#)*

EXPERT

Practitioners should start with a clear purpose and consider trade-offs between building and buying tools.

| 1. Define Purpose | 2. Evaluate Options | 3. Implement, Learn, and Refine |
|--|---|--|
| <ul style="list-style-type: none">• What specific problem should be addressed (e.g., teacher retention or middle school math proficiency)?• How will success be measured? | <ul style="list-style-type: none">• In consultation with stakeholders, is a tool the best solution to the problem?• What resources and expertise are available internally?• How much control and customization are needed?• What are the cost implications, both initial and ongoing?• How will this solution integrate with existing systems?• How can the change management process foster trust and buy-in? | <ul style="list-style-type: none">• How will the solution be piloted?• How will feedback from a range of stakeholders be gathered?• How will metrics be tracked?• What is the continuous improvement process? |

Selection of AI tools should use existing best practices for evaluating ed tech and consider AI-specific attributes.

Any ed tech tool should have clear value adds aligned with specific areas of impact and should require an additional layer of tech and procurement considerations.

Leading Educators' Value Add of Technology on Teaching Framework



- Value adds from effective tech-enabled practice can include gained capacity, increased effectiveness, and expanded possibilities.
- Areas of impact may include teaching and learning, classroom community and culture, and practice and growth.

Opportunity Labs and F3 Law's Procurement Benchmarks for AI in K-12 Education

"Efficacy: Measures how well AI-powered products and tools achieve their intended educational outcomes, including factual accuracy and elimination of bias, and protects against technological failures that undermine established learning processes."

"Data Security: The protections in place to prevent unauthorized access to or acquisition of personal student and staff information."

"Privacy: The protections in place to demonstrate both compliance with the law and proper ethical use of PII."

"Safety: The protections in place to prevent and minimize online safety threats such as inappropriate content, misinformation, threats of self-harm or threats to others, and cyberbullying."

"Interoperability: Ensures AI tools can integrate and function seamlessly with existing technology systems."

"Access: Ensures equal opportunity for all students and staff to use the technology."

Young people — another key user group — are both excited and concerned about the future of AI.

Forty-one percent of young adults believe the impact of GenAI will be both positive and negative. Some of what excites and concerns young people about AI:

Excites

- Help with schoolwork and assignments in idea generation and support.
- Enable access to information more quickly.
- Reduce the time it takes for tasks.
- Provide opportunity for greater creativity in the arts.
- Create potential potential advancements in science and medicine.

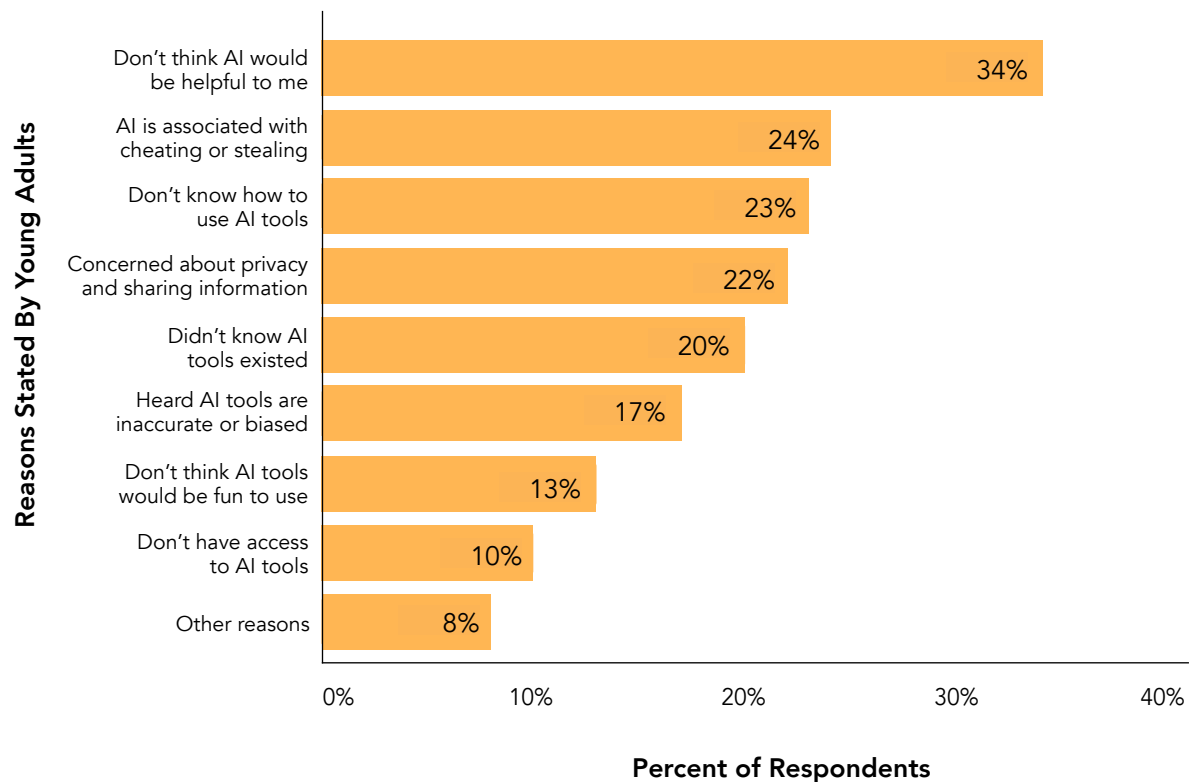
Concerns

- Impact jobs, particularly in the creative industry.
- Potential of AI to “take over the world.”
- Ability to more easily create and spread misinformation.

Young adults who do not use AI cite similar concerns about the technology as teachers.

Fifty-one percent of young people have used AI at some point, leaving 41% who have never used the tools and 8% who are unaware of the tools.

Reasons Young Adults in the U.S. Say They Do Not Use GenAI Tools



Like teachers, young adults cite concerns about lack of knowledge, data privacy, and bias for not using AI tools.

Student-facing tools are still in the early stages, making it difficult to evaluate quality.

Experts noted that school leaders and teachers are reluctant to adopt student-facing products until there is greater trust in the products or technology. Some of the reluctance is over the time it takes to vet products.

Rapid changes in technology can make the ratings quickly outdated and reliance on developer documentation limits participation; instead, benchmarks may be the scalable option for AI tools.



There are some organizations vetting student-facing products.

Common Sense Media rates 10 products on the following dimensions:

- Data Use
- Fairness
- Kids' Safety
- Learning
- People First
- Social Connection
- Transparency and Accountability
- Trust

While research is emerging, more is needed to understand the benefits and risks of AI on education.

There is **emerging research** on:

- Technology solutions to address AI model risks (e.g., accuracy, bias, and cost).
- Surveys of use, perception, and adoption of AI tools.
- Some, though limited, program-specific effectiveness on student learning.

There remain **questions** about:

- AI's impact on student engagement, motivation, cognition, and deep learning.
- Reflections on effective implementation of AI.
- AI's impact on educator roles and professional development.
- Economic and resourcing impact of AI in education.

Can Technology Facilitate Scale? Evidence from a Randomized Evaluation of High Dosage Tutoring

Generative AI Can Harm Learning

Hamsa Bastani,^{1*} Osbert Bastani,^{2*} Alp Sungu,^{1*} Haosen Ge,³ Özge Kabakcı,⁴ Rei Mariman

Can Large Language Models Make the Grade?

An Empirical Study Evaluating LLMs Ability to Mark Short Answer Questions in K-12 Education

Libby Hills | Bill Roberts
Jacobs Foundation | Legible Labs

McKinsey & Company

Public Sector Practice & Social Sector Practice

How artificial intelligence will impact K-12 teachers

Existing and emerging technologies can help save teacher time—time that could be redirected toward student learning. But to capture the potential, stakeholders need to address four imperatives.

by Jake Bryant, Christine Helz, Saurabh Sanghi, and Dilip Wagle



Learning science research identifies specific features of effective learning; AI could address some of them.

| | |
|-------------------|---|
| Motivation | "Motivation is a condition that activates and sustains behavior toward a goal." |
| Belonging | "A number of studies indicate that a positive identification with one's racial or ethnic identity supports a sense of school belonging, as well as greater interest, engagement, and success in academic pursuits." |
| Alignment | <i>(Alignment with learning progressions, where known):</i> "Detailed descriptions of typical learning serve as representations of models of cognition that can guide instruction as well as the design and interpretation of the results of assessment." |
| Challenge | "Learners tend to persist in learning when they face a manageable challenge (neither too easy nor too frustrating)." |
| Choice | "The opportunity to make meaningful choices during instruction, even if they are small, can support autonomy, motivation, and ultimately, learning and achievement." |
| Ownership | "Goals — the learner's desired outcomes — are important for learning because they guide decisions about whether to expend effort and how to direct attention, foster planning, influence responses to failure, and promote other behaviors important for learning." |
| Feedback | "Feedback may address how tasks are understood and performed. [... It is] most effective when it is focused on the task and learning targets; delivered in a way that is supportive and aligned with the learner's progress; delivered at a time when the learner can benefit from it; and delivered to a receptive learner who has the self-efficacy needed to respond." |

However, there are different views on how much AI could and should address human emotional well-being.

Significant questions remain about AI's ability to replicate human connections. Studies of digital technology use and adolescent well-being indicate generally negative but minimal effects, varying by the type of use ...

"There's growing social awareness on how much tech has eroded solidarity, community, and our sense of understanding one another."

—**Benjamin Riley, Cognitive Dissonance**

"The underlying premise is that students, teachers, and families want AI instead of a human being. As a consequence, investments are diverted from the people who need it to unproven technology solutions."

—**Aasim Shabazz, Twin Cities Innovation Alliance**

"Technologists often imagine that if only you program kids with the right scripts, then kids would know stuff. But that's not how kids learn."

—**Dan Meyer, Amplify**

... Meanwhile, tools and research outside of education are challenging the boundaries of machines' social and emotional capabilities.

- Studies showed that ChatGPT and Google's AMIE were higher quality and rated as more empathetic than doctors in responding to medical questions.
- Technology exists to interpret emotions from vocal and facial expressions (e.g., Hume AI).
- LLMs such as character.ai and Inflection's Pi incorporate emotional intelligence, significantly extending the average duration users converse with the chatbots.
- A study of Replika, an intelligent social agent, revealed that while participants were more lonely than the typical population, 3% said that using Replika helped to prevent their suicidal thoughts.

As practitioners build or evaluate tools, they should focus on meeting the needs of marginalized students.

As developers create tools, there are benefits in designing from the margins. Without being intentional in the design, the AI tool may only benefit the top 5% of students. Designing around the margins can include the following elements:

| | |
|--|---|
| <p>Students With Learning Differences</p> | <ul style="list-style-type: none"> • Connect content to other learning experiences or interests. • Create more opportunities for skills practice. • Embed glossaries or pronunciation keys. • Include multiple ways to interact with the tool (e.g., text, audio, and visual). • Develop alternative assessment formats (e.g., oral exams, practical demonstrations, and visual projects). |
| <p>Multilingual Learners</p> | <ul style="list-style-type: none"> • Offer embedded translation. • Develop materials that are culturally relevant for diverse student populations. • Incorporate considerations for dialects and accents. • Include audio or image modalities. |

There are numerous benefits for education tools to adopt a Universal Design for Learning approach, as it has the opportunity to improve tools for *all* students.

Los Angeles Unified School District's (LAUSD) experience with "Ed" illustrates potential challenges.

Timeline of LAUSD's Ed Rollout

FEB.
2023

LAUSD released an RFP for a vendor who could "create a fully-integrated portal system that will provide 'one-stop' for students, teachers, family members, administrators, and others."

JUN.
2023

The contract was awarded to Harvard Innovation Labs' AllHere for \$6 million.

MAR.
2024

LAUSD announced the release of its new AI chatbot, Ed. Students and families would use Ed to access information such as grades, bus schedules, and resources for social-emotional learning. Ed would also analyze key academic metrics and create individualized student learning plans.

JUN.
2024

Just three months after the public launch of Ed, AllHere had furloughed most of its staff and was in the process of being sold. LAUSD says it owns the Ed platform and information sources are still available, but users must navigate it as a traditional website with dropboxes and click-through links. \$3 million of the \$6 million fees have been spent.

"It is the power of this technology through Ed, that we will meet every one of our students where they are and accelerate them academically and in terms of enrichment towards their full potential."

—Alberto Carvalho, LAUSD Superintendent

Three critical factors likely led to LAUSD's outcome.

LAUSD made strategic, procurement, and implementation errors that led to challenges with AllHere and its Ed tool.

| | |
|--------------------------------------|---|
| <p>Strategic Factors</p> | <p>While LAUSD did identify a clear purpose, the scope of work was likely too ambitious. The incorporation of numerous data sources and a wide range of stakeholders (students, families, teachers) as the first AI initiative put LAUSD at risk.</p> |
| <p>Procurement Factors</p> | <p>LAUSD's vendor selection process may have overlooked several red flags:</p> <ul style="list-style-type: none"> • Vendor Skills, Expertise, and Reliability: AllHere was a relatively new startup with limited AI experience. This LAUSD contract was by far the largest contract AllHere was awarded. • Data Privacy and Security: AllHere's data management processes may have violated LAUSD's policies. For example, prompts containing students' personal information were shared with third-party vendors, and seven of eight chatbot requests were processed through overseas servers. |
| <p>Implementation Factors</p> | <p>The timeline from request for proposals to contracting with AllHere to release of Ed was just 13 months. LAUSD's rush to release Ed districtwide did not allow for an adequate piloting of its new tool. Pilots on a smaller scale or with fewer features may have lessened the risk and enabled more learning.</p> |

LAUSD's experience may have lasting and broad implications for district ventures with AI in the future.



As a result of LAUSD's experience with AllHere and its Ed tool:

- Districts and schools, especially in large urban areas, may be wary of innovating with AI in general.
- For districts and schools that are willing to innovate with AI, they may have a lower risk tolerance for partnering with vendors, shifting more toward custom in-house tools.
- Ed tech companies, driven by the lower demand, may be more cautious and/or less incentivized to build ambitious projects.
- States may be urged to issue guidance to districts on best practices for vetting ed tech and AI vendors.
- Students, families, and practitioners may be more apprehensive about using AI tools without understanding how their data is being used and protected.



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GenAI models have inherent risks and limitations. Primary concerns revolve around the accuracy and quality of information produced as well as the potential to amplify bias. While other sectors, such as health care, have adopted methods to improve AI quality, **education lags behind due to limited high-quality datasets and established benchmarks.** Beyond concerns about the quality of the underlying AI models, there is also concern about the quality of the ed tech products themselves. Current ed tech products are largely wrappers around the few big models to ease prompting, raising questions about their long-term value. Similarly, few products are firmly grounded in established learning science research on how children learn, which is essential to improving student outcomes.

Given concerns about quality and rapid growth, there is a need for greater policy, regulation, and guidance. The Biden administration has issued an executive order and OMB directives that start to address risks, but progress is slow. There is, in particular, a need for education-specific guidance at the federal or state level, given education's unique data privacy laws. There are organizations supporting the creation of policies and guidance, but demand far outstrips current capacity.

The quality concerns and lack of guidance contribute to the slow adoption of AI in the education sector. However, given that AI will continue to be an increasing presence in society, **education stakeholders at all levels (leaders, teachers, and staff) should have training and exposure to AI tools** so that there is widespread awareness of both opportunities and risks. Training is essential to promote appropriate use of AI and to equip educators to make informed purchasing decisions, particularly around higher-stakes student-facing tools. ✨

For more on AI use cases, refer to the final report of the Learning Systems series — [Applications: Artificial Intelligence Use Cases.](#)



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About Bellwether

Bellwether is a national nonprofit that exists to transform education to ensure systemically marginalized young people achieve outcomes that lead to fulfilling lives and flourishing communities. Founded in 2010, we work hand in hand with education leaders and organizations to accelerate their impact, inform and influence policy and program design, and share what we learn along the way. For more, visit bellwether.org.

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