CRPE
REINVENTING PUBLIC EDUCATION

ASU Mary Lou Fulton Teachers College
Arizona State University

THINK FORWARD
AI LEARNING FORUM
CRPE & ASU®

Wicked Opportunities: Leveraging AI to Transform Education

A report from CRPE's Think Forward: AI Learning Forum

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Preface

While the United States leads the world in Artificial Intelligence (AI) innovation, our schools lag behind in preparing teachers and students for the Fourth Industrial Revolution. The extraordinary pace of technological change, and the potential for both opportunity and risk, may be unprecedented. What leaders in education and education policy do next matters. Will we adapt teaching and learning to take advantage of this rapidly evolving landscape, or will we resist and ignore the inevitable? Will we allow the benefits to accrue to the most advantaged students, or will we ensure that all students have equal opportunity? Will we use policy and investment to promote high-quality innovations and equity, or will AI end up over- or under-regulated in schools?

To help accelerate action in U.S. public education and develop a short-term roadmap for districts and other education leaders, the Center on Reinventing Public Education (CRPE) brought together over 60 state and federal policymakers, edtech innovators, school system leaders, and advocates in Albuquerque, New Mexico, in April 2024 to participate in the Think Forward: Learning with AI forum.

The setting for the Think Forward AI learning forum emphasized the importance of collective decision-making—and the consequences of getting those decisions wrong. We were honored to hold our convening on the lands of the Santa Ana Pueblo, or Tamaya, people. The area is rich with history and tragic reminders of why humanistic outcomes must remain at the heart of decisions. Not far from our gathering was Los Alamos, where Manhattan Project scientists designed the first atomic weapons as policymakers and philosophers grappled with how to govern unthinkable powers.

Historical comparisons at the convening focused on two other events that fundamentally altered public education—the pandemic, which upended schools overnight, and the advent of the internet, the impact of which took several decades to emerge. Both disruptions ultimately failed to drive material change in how schools improve student learning, well-being, and growth.

Though AI's impact is still unfolding, the technology will disrupt education in significant ways. Further, it is not the only disruptive force we will face—the coming realities of extreme weather, increasing political extremism, rising inequality, and a rapidly shifting workforce all point to a set of "wicked problems" (challenges with many interdependent

factors making them seem impossible to solve) that AI could either exacerbate or help solve. To achieve a positive AI-driven future, we must act. We must design. We must think forward.

This report reflects key learnings and conversations that emerged from CRPE's Think Forward convening, including:

- how AI can enable needed changes in our schools
- how current conditions in the edtech market act as barriers to closing equity gaps, and
- how policy and practice must adapt for lasting system change.

It concludes with a short-term action plan developed by forum participants that provides an immediate path forward and outlines the roles wide-ranging stakeholders must play to address our shared challenges and opportunities.

For years, CRPE has called for more resilient, antifragile education systems that can navigate both known and novel disruption. Even in the absence of external crises, the current challenges in our schools would be urgent: widening achievement gaps, an anemic pandemic recovery, a dwindling supply of quality teachers, rising mental health challenges among young people, declining enrollment, and shrinking budgets. All are "wicked problems" that have no clear solutions given current capacity and policy constraints.

Generative AI's rapidly maturing capabilities offer the opportunity to shift education systems in positive ways and create new models for teaching and learning. Could AI finally address the many hard-wired inequities in our school systems, especially inequitable access to high-quality instruction? A truly antifragile system doesn't just endure change; it thrives on it. To that end, we must capitalize on the AI's "wicked opportunities" to address the challenges that have historically plagued U.S. public education.

> **"Dystopia is not set in stone … but education may play the deciding role."**

Navigating an uncertain future will require unlikely allies working together, a clear sense of the problems we are trying to solve within schools, bold leadership at all levels, and an understanding of the roles all stakeholders must play—as well as the stakes. "Dystopia is not set in stone," one participant said. "But education may play the deciding role."

A Tool, Not a Destination: How AI Can Transform Teaching and Learning for Students Most in Need

While AI adoption to date has been slow, the technology has the potential to address longstanding barriers to meaningful improvements in teaching and learning. CRPE and others in the sector have stressed using AI in the service of broader systems change and ensuring our schools prepare students for an unpredictable future, influenced partly by AI but also by the accelerating pace of other disruptions. "Only after we have a vision for what our learning environments should look like, then and only then

think about AI," said Carole Basile, dean of Arizona State University's Mary Lou Fulton Teachers College. "Otherwise, we're putting the cart before the horse."

At the highest level, redesigning schools for the generative AI era means thinking about a world in which students will work with AI in almost every career and setting. This also means focusing on skills only the human mind possesses, such as "learning how to learn" and emphasizing creative thinking and discernment over factual knowledge. According to forum participants, lifelong learning and reskilling will be more critical than ever across all education sectors.

To that end, the Houston Independent School District (HISD) is already focusing on a "year 2035 competency gap," superintendent F. Mike Miles told forum attendees. Along with an emphasis on critical thinking, teamwork, and other durable skills, HISD is introducing an AI in the workforce elective for high school students.

Leadership in Gwinnett County Public Schools (Atlanta, GA) began an exploration of AI-enabled learning in 2017. They have since created an AI Learning Framework that aligns with the district's portrait of a graduate, designed a three-course AI and CTE pathway in partnership with the Georgia Department of Education, and launched a new AI-themed choice school that integrates AI across disciplines.

Forum participants said that schools need to emphasize critical thinking, teamwork, and other durable skills. Redesigning K-12 education to meet these needs will necessarily change what schools look like. Teachers will be less likely to cover single-subject content and will have more specialized roles and responsibilities within multidisciplinary teams. As a result, teachers will need greater autonomy, more coaching, and more support for these new team-based roles. Also necessary are more pathways into the profession, especially those that support skill specialization for a far more significant "variance of kids and educators," Basile said.

Educators who might distrust technology—perhaps exacerbated by experiences with social media and its negative impact on youth mental health—will also need to see evidence that AI-enabled models of teaching and learning will help, not harm, their students. Increases in teen suicide and depression rates spiked as major social platforms became mainstream in the early 2010s. "We don't want to repeat the mistakes of social media," one participant said.

As a result, teachers are pushing for the so-called "human in the loop" to remain as close to classrooms as possible. While educators are resistant to "ceding professionalism to a machine," they also must begin to adapt to the new realities of AI, said Rob Weil, director of field programs in the educational issues department of the American Federation of Teachers.

AI also holds the potential to address persistent teacher shortages. The top non-financial issue facing the profession cited by AFT members was paperwork, an area where the technology could help—particularly when combined with new models. HISD, for example, is already exploring taking lesson planning and grading out of the hands of classroom teachers in its experimental schools. Similarly, AI could free up teachers' time to focus on their relationships with students. To that end, Mesquite Independent School District in Texas has been piloting an AI-enabled social and emotional support tool called AYO. The district's counseling department leads, teachers, and students are co-designing and building AYO's capacity while piloting it. Currently, students use it for

daily "mood check-ins," which can trigger a real-time counseling intervention; to track their passions and connect them to related community opportunities; to self-assess their leadership capacities and strengths; and to share their interests and daily well-being with teachers and parents. Next year, the district will start incorporating tools for teacher lesson planning and parent support.

Together, technology and system design could bring about redesigned schools guided by longstanding goals. "High-tech and high-touch is still right," Basile said. "We've been at it for a while," another participant said. "Successful student engagement efforts have mostly proven to be too complicated to sustain. Could AI help make them more feasible?"

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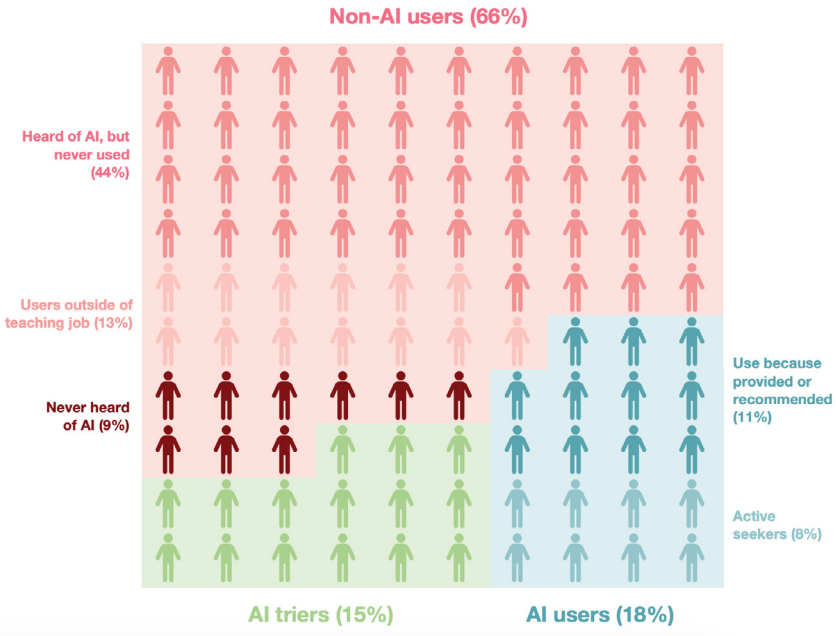
The State of AI: Worrying Trends for Implementation and Access

The U.S. is currently at the forefront of AI development, even as we're trailing other nations in equipping teachers and students for the generative AI era. The usual suspects—South Korea and Singapore among them—are already thinking systematically about using AI as a cornerstone of how they prepare students to work and how they mitigate teacher shortages. In the U.S., other sectors, including healthcare, finance, and manufacturing, are using AI to drive efficiency and change long-established workflows at scale. By contrast, the uneven adoption of AI in our schools has already led to widening gaps in equity and access as educators grapple with a technology maturing more rapidly than their systems' ability to respond.

The public release of ChatGPT in late 2022 sparked much handwringing about students using AI to cheat or plagiarize, which led some districts, including New York City, to ban the technology at first. In reality, more teachers than students are currently using generative AI. Fewer than 20% of teachers are currently using the technology at all, and just over 10% are using tools provided or recommended by school leaders or peers, according to a new report from RAND and CRPE on educators' perspectives on AI.

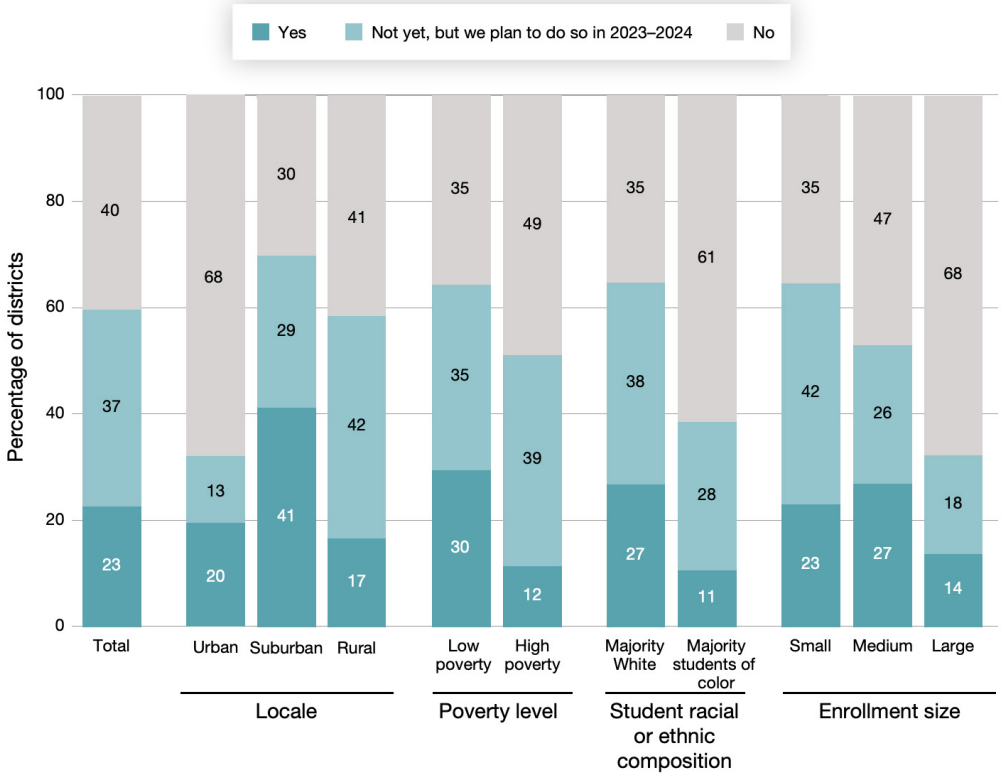
Percentage of Teachers Who Reported Using AI Tools and Products in Their Teaching



From RAND, *Using Artificial Intelligence Tools in K-12 Classrooms* (2024).

Despite the low penetration of AI tools and products in schools, troubling disparities are already emerging. Suburban districts were more than twice as likely as their urban and rural counterparts to have provided training to teachers about AI, a trend echoed in districts where the majority of students are white. Suburban teachers were also slightly more likely to be AI users, according to the report.

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



From RAND, *Using Artificial Intelligence Tools in K-12 Classrooms* (2024).

While AI adoption is slow in schools, early trends suggest that equity gaps will continue to widen in a business-as-usual scenario. Suburban, homeschool, and other populations will likely continue using AI to accelerate the learning of already advantaged students as others lag in adoption. "As we talk about concerns and guardrails, Silicon Valley kids are using it, and others are falling behind," one participant said.

However, through targeted investment, training, and evidence-building in school systems serving low-income and historically marginalized populations, AI could also accelerate learning and other outcomes for the students most in need and begin to close longstanding opportunity gaps.

A "Race to the Market" that Could Overlook Quality and Equity

While AI has the potential to drive needed changes, the rapid proliferation of AI-enabled education tools and curricula reflects a "race to the market" that, in the absence of more consistent feedback about what schools need, could result in an overwhelming flood of niche tools that purport to help but are largely unproven in terms of student

outcomes and driving meaningful change. That feedback is essential, as developers often "speak education with a heavy accent," as one participant said.

According to one participant, generative AI is an "imperfect but fast teacher assistant and on-demand helper" in U.S. classrooms—and a powerful tool to broaden educational opportunities elsewhere in the world. As the technology continues to evolve at an exponential pace, its limitations will disappear, as will the entry costs. Edtech providers report that pricing is already below the current cost of AI usage in anticipation of costs continuing to fall rapidly. However, district leaders remain concerned that costs will rise as use cases are established and edtech providers begin to charge market value for their tools.

The distrust of generative AI developers was a consistent undercurrent of forum conversations. During the convening, OpenAI removed the remaining barriers for children to access one ChatGPT model, and many expressed skepticism about the guardrails put in place by generative AI developers. In the following weeks, Microsoft announced a partnership with Khan Academy that would make its Khanmigo teaching assistant free for all U.S. K-12 teachers, potentially undercutting district-led AI guidelines or initiatives. One participant asked a panel of edtech providers if they would sign a hypothetical permission slip for their 10-year-old to use an AI-powered math tutor. All said yes but stressed the importance of ensuring parents and teachers remain in the loop.

Edtech providers and educators agreed that developing effective AI-powered use cases for education is hampered by a lack of data-sharing by districts currently using these tools, limiting the ability of both edtech companies and educators to assess their efficacy. "Schools are not transparent enough to know if these tools are working," said one edtech leader whose request to share data had just been rejected by a large district using its tools. "We are begging districts to share accountability data."

Participants also noted that the edtech AI market already shows signs of being "broken," with a profound disconnect between what students and educators need and what edtech providers are working to develop. As it stands, just a handful of early adopter school districts (mostly in suburban and relatively affluent communities) and niche markets (such as homeschoolers) drive much of the market. Potential markets for tools to benefit historically marginalized populations, students with disabilities, multilingual learners, and other high-needs populations may lag in development. Current market conditions raise legitimate questions about "how we design for kids with the most needs in under-resourced communities," another edtech developer agreed. "Technology tends not to be designed this way."

While organizations such as AiEdu, TeachAI, and Chiefs for Change, among others, are providing implementation support to districts, there is currently no coordinated signaling or translation of district needs back to edtech companies. "There's not any one organization figuring out how to work with districts to help them wrestle this to the ground," one edtech provider said. Another put the challenge more succinctly: if 18,000 school districts send diffuse signals about what tools they want, the result will be "crap."

Despite these challenges, the nascent market still holds great potential. Arizona State University's Andrew Maynard commented that current use cases involving generative AI are typically low-stakes and "can be fixed fast," providing opportunities for educators

to address issues before the technology is applied to higher-stakes decisions involving students and teachers.

One forum participant provided a firsthand account of how AI-powered learning tools can transform education—and students' lives. Irhum Shafkat, a Minerva University senior who grew up in Bangladesh, discussed how narrow his educational experiences were until he began using Khan Academy to bolster his skills and found an unexpected passion in math. "It changed my life," he said. "The promise of technology is that we can make learning not a chance event… We could create a world where everybody can rise up as high as their skills should have been."

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OPPORTUNITIES FOR TEACHING

AI-powered tools showcased during the Think Forward forum highlighted how AI can shape teaching and learning.

CourseMojo is a curriculum-aligned, AI-powered assistant teacher. Mojo supports student learning and teacher efficacy inside and outside of the classroom by providing access to high-quality instructional materials. The tool tailors its support to diverse learners through targeted instruction and intervention.

Da Vinci Schools' Project LEO combines areas of student interest with existing standards and content to suggest projects for each student. It is not a pure personalization play but rather customization supported by classroom teachers and subject-matter experts.

Gladys is an AI-powered "equity co-pilot" that allows educators to practice inclusive pedagogy. Named after the developer's grandmother, who grew up in segregated Virginia, Gladys ingested 72 pages of culturally responsive standards and uses that content to respond in chats. "The synthesis is where we can add value," said 228 Accelerator's Caroline Hill. "Racism is effective in scaling. We need to be just as much so."

Khan Academy seeks to improve student learning time with Khanmigo, an AI-powered virtual tutor that supports the active practice of learning with real-time feedback. Research suggests this feedback is the key to growth and could help students "get unstuck in the moment" in classroom settings, said Chief Learning Officer Kristen DiCerbo. Khan is also developing essay feedback tools and classroom snapshots to help teachers group students based on targeted skills that surfaced through their work with Khan's materials.

Axio (formerly Primer) is an AI companion for learning and life. Mark Naufel designed Axio to support education, career growth, and overall well-being. Axio tailors itself to its users and helps them reach their individualized goals through AI-powered personalized coaching and mentorship.

The Urban Assembly's **Project CAFÉ** provides instructional support at scale through a video-enabled AI tool that focuses on teacher-student interactions using existing frameworks and a library of high-quality examples.

Similarly, **Teacher Copilot**, an AI-powered earbud coaching tool mapped to coaching frameworks, helps AJ Crabill's district respond to a fourfold increase in new teachers without an accompanying increase in coaching support. "Nothing else but this makes the math work," he said.

Proactive Policy for an AI-First Era

Forum participants agreed that the current AI policy landscape is fragmented. It will take federal legislation to create a consistent framework that drives AI policy coherence, said Chinasa T. Okolo, a fellow at the Brookings Institution's Center for Technology Innovation. Instead, the federal government is addressing AI through executive orders and providing limited guidance for schools. The U.S. Department of Education plans to generate a resource bank, but not until fall 2024, which is well behind many schools' and states' need for support.

In the meantime, some states have issued their own guidance on AI usage in schools, but it tends to lack specifics about use cases and implementation. State-level legislation varies and is restricted to a limited number of states, contributing further to fragmentation. "If everyone's developing disparate policies, we won't get the products for students [beyond] odd little use cases," one participant said.

John Bailey, a non-resident senior fellow at the American Enterprise Institute, pointed to the contrasting example of the EU's centralized, evolving risk-based framework, which sorts AI use cases and regulations into three categories. In the framework, education is considered high-risk because of Europe's historical focus on sorting students into more rigid pathways.

> **"My big fear is, just as we did during the pandemic, we are once again leaving it for districts to figure it out."**
>
> **-Robin Lake, CRPE Director**

Without clear policies and guidance, districts will continue to struggle with procurement, data-sharing policies, technical questions, and implementation strategies, ultimately leading to disjointed approaches and unequal access. Conflicting policies are already generating mixed signals for edtech developers. While some large districts made early headlines by blocking access to AI-powered tools, many are now encouraging AI use. Florida, for example, has allocated funding for districts to provide AI-powered tutors for struggling students. "My big fear is, just as we did during the pandemic, we are once again leaving it for districts to figure it out," CRPE Director Robin Lake told attendees.

Looking further ahead, access to high-quality tools outside the traditional public education system could accelerate the departure of students—and funding—from

already struggling public schools, particularly in states with ESAs, vouchers, and school choice policies.

A panel of policy experts suggested that states take a "three-legged stool" approach to support districts by providing policy, funding, and detailed implementation strategies. If any of these legs is absent, the experts warned, then even well-intended AI guidance will fall flat.

Policy

The policy opportunities ahead abound, as AI promises to impact nearly every aspect of teaching, learning, and a changing workforce. Policy priorities include addressing potential bias, resolving access and resource disparities, maintaining data privacy, determining AI quality, and ensuring AI literacy. Systems must also build public trust and understanding of AI's role in education through transparent communication and engagement.

Policymakers should also be careful about pushing too restrictive a stance, given the potential of the technology to solve longstanding problems. They must strike a balance between effective regulation and "not squashing something with potential equity benefits," as one participant said.

There are opportunities for AI policymakers despite the current fragmented landscape. The inability to contain AI in a static policy presents opportunities for policymakers to approach their work with nimbleness and flexibility. They could, for example:

- incentivize collaboration between states, districts, communities, and edtech developers to create standardized AI tools and frameworks,
- implement pilot AI programs in select districts to identify best practices and potential issues before wider adoption,
- leverage public-private partnerships to fund and develop AI initiatives in schools, or
- establish state-funded training programs for educators to integrate AI tools into their teaching practices effectively.

Some jurisdictions are attempting this. Forum attendees noted that several states are moving forward with AI literacy training, which encourages a basic understanding of how the technology works and ways to assess its results. Three states have already passed information literacy laws requiring such lessons, and individual institutions—ASU and HISD among them—are developing AI-specific literacy requirements for students.

Finally, since leadership proved critical during COVID—and matters most in times of disruption—policymakers will want to cultivate and connect leaders in different sectors, including student leaders, community and civil rights leaders, educators, district leaders, policy advocates, and leaders in business and edtech. AI requires policymakers to foster an environment where leadership at all levels can collaborate in new ways, navigate uncertainty, and "lead towards unknown outcomes," as one participant put it.

At the local level, stakeholders must be allowed to learn about AI to build buy-in and engagement and to prevent resistance to long-term change. As one participant said,

"You've got to find a way to give people agency with AI, so they get on board the right way." This is essential for all learning environments but is particularly important for school districts so they can stay on pace with private schools, microschools, charter schools, and other more agile players in their communities.

Funding

Policy alone will not drive massive shifts in the way schools approach AI. The conditions are especially stark for the 2024-25 school year. As federal stimulus money comes to an end, districts will face significant challenges in funding AI implementation, given a near-universal struggle with ongoing pandemic-related challenges. These conditions beg state and federal leaders to provide funding for AI initiatives. Incentives and strategic financial support will be as crucial as actual guidance to support effective implementation. Building partnerships with local businesses, reputable edtech providers, and higher education institutions can create new pathways to support policy recommendations.

Ideally, this funding should closely track policy goals. For example, the state of Indiana issued a request for proposals with funding to support its commitment to AI-powered tutoring. In California, the Los Angeles County Office of Education led a cross-sector task force to develop guidelines to support the county's 80 school districts in responsibly implementing AI.

Participants noted that, despite dire funding scenarios in the year ahead, districts can also think about investments in AI as an opportunity to achieve student outcome goals in more cost-effective ways. Ultimately, the "market" as it exists does not fully reflect the potential that AI provides. Schools or edtech providers may need to adopt new bottom-up models—driven by parent, student, and community demand—to ensure that AI scales equitably. These models could include consolidating resources at the community level and winning citizen buy-in to support local AI education initiatives.

Implementation Support

While fewer districts are outright banning AI, most are waiting for more explicit guidance to move beyond early adopter experiments, likely because the devil is often in the details. "The fear of making mistakes is a big driver for districts," one participant said. Not only is AI conceptually new to many district leaders, but the ways to manage and spread adoption around the technology are new, too.

Implementation has been a longstanding barrier to many well-intentioned improvement efforts. Forum participants noted that state education agencies have provided limited support for other emerging trends in the sector, such as the science of reading and teacher apprenticeships, leading to weak implementation of these initiatives at the local level. "Stop putting out vanilla one-pagers with guidance," one participant said. Instead, states should set clear AI-related benchmarks for school systems to meet. To help districts in that process, states should not only hold them accountable but also provide funding and support, as well as flexibility for creative implementation.

Panelists encouraged states to take a "both-and, vertical and horizontal approach" when supporting districts with implementation. State leaders must make hard choices about what to prioritize, as they can only select a handful of initiatives to support and implement. As one participant put it, prioritizing AI may come at the risk of deprioritizing

more traditional interventions like Multi-Tiered Systems of Support (MTSS) or early learning investments.

> **"We need leaders with a vision to change, not managers to keep [maintaining] the same."**

Strategic discipline—narrowing focus—is a perennial element of adaptive leadership, and Think Forward participants agreed that AI should be one of only a handful of key focus areas. One policymaker said that, if given the opportunity, they would select AI and math education as their state's only priorities and use those two elements to guide curriculum and system change. As one participant noted: "We need leaders with vision to change, not managers to keep [maintaining] the same."

Effective implementation requires leaders to possess a keen knowledge of AI's capacity and limitations, which, as one participant put it, "is lacking from the classroom to Congress." Now is the time for systems, as well as state and federal leaders, to learn about the technology and integrate it into their general understanding of systems change practices.

Participants said that, much like district leaders, policymakers have issued limited guidance due to their fear of not fully understanding AI and its implications. However, districts need differentiated policies for rural, urban, and suburban contexts that provide detailed implementation assistance, emphasizing quality assurance and equity. Otherwise, in the absence of more specific support, district priorities are "led by whatever vendor gets to them first," one participant said.

The Need for Uncommon Allies

As one participant put it, the education field will need to "speak as a sector" in more coordinated ways to move beyond fragmentation and create a market that can drive the right kind of change at scale. Informing edtech providers with a more singular voice has precedent in the textbook space—a few big states set expectations and move the market. That singularity must be balanced with the differing needs of urban, suburban, and rural districts, however.

Striking that balance will require a bottom-up as well as a top-down approach. This includes collaborating on a collective vision for the future of education, co-creating solutions with those closest to the issues, and establishing a clear understanding of "swim lanes"—the expertise, roles, and responsibilities of all stakeholders.

Districts need to allow data sharing with edtech providers to ensure solutions effectively improve teaching and learning. However, such data sharing must include strict privacy protections for student data.

Teachers should actively collaborate with district leaders and edtech providers in developing tools—"educators as co-designers, not rubber stamps," as one participant said.

Parents, community leaders, and civil rights organizations should be involved in designing solutions and broader AI literacy efforts. "The least powerful voices have the most common sense," as one educator said. State and district leaders must recognize that school "is not the only place kids learn, and teachers are not the only educators," one participant said.

Edtech leaders must help co-design solutions that address the most wicked problems in education and put their resources into ensuring equitable and unbiased access to AI-driven educational tools. Edtech companies should also commit to engaging in research that will allow educators and parents to assess product effectiveness accurately.

Forum participants suggested an additional convening with Silicon Valley leaders to help close the gap between edtech providers and the sector's needs. Participants also urged education leaders to overcome long-standing suspicions about technology edtech providers. "It's easy to vilify technology companies at this moment, but you need to find common ground," one participant said.

Education schools need to prepare teachers for AI teaching and learning realities that go well beyond plagiarism concerns. Education schools should also work to support new teaching models—such as team teaching with differentiated roles—that could benefit from AI. As Basile put it, "It's incumbent on higher education to start helping to shape the next learning environments."

The federal government must create privacy and bias guardrails around AI and support states and local districts to train teachers quickly, especially in low-income and historically marginalized communities. Specific challenge grants could drive more innovators to solve for "wicked opportunities" in education. Investments in research and development for AI in education are crucial to build evidence on model efficacy and to identify implementation challenges and solutions.

State legislators and education agencies should become "dogged and obsessed with implementation," as one participant put it. They also must work closely with districts and local partners to ensure implementation is effective. "Implementation is more like a team sport," one participant said. States will likely also have to reassess state standards and redesign high schools to emphasize durable skills that will allow young people to thrive in an AI economy and society.

Philanthropies are critical to ensuring that investments lead to equitable opportunities for young people, especially in this early-stage AI design phase. Until more formal and systemic federal or state funding programs are available to support schools, districts, and families in adopting AI solutions, the field will need funding to catalyze innovation and ensure school systems can bring AI-enabled solutions to historically marginalized students. Funders can also help address one of the sector's largest knowledge gaps by creating a central space for (1) sharing best practices at district, state, and federal levels and (2) exploring out-of-the-box models and playbooks to move forward at the speed and scale called for at this unique moment.

Researchers can play an unprecedented role in collaborative sharing and co-creation. They can use the current model established by the healthcare sector, where a coalition of health AI developers, medical groups, and regulators are working together to build consensus, develop benchmarks and standards, and operate testing centers for new technologies to ensure clinical quality and equity.

Within education, Chiefs for Change is co-creating a roadmap for AI with two dozen districts, starting with standards, followed by implementation frameworks, and ultimately highlighting use cases for broader implementation. To bring such efforts to scale and with quality, the federal government and other stakeholders could make an explicit investment in a similar approach to research and development centers focused

on AI in education. Without a systematic approach, "we're going to find bright spots or lighthouses, point to them for five years [while] the rest of the sectors move on, and our kids will have to be retrained," one participant said.

Next Steps and a Roadmap

Think Forward participants recognized that the field needs to take steps now to build toward a future where teaching and learning look radically different—and where students have radically new opportunities in their lives and careers. Absent proactive, intentional leadership, we risk AI exacerbating "wicked problems" rather than reimagining the educational landscape. Solutions must address core issues that undergird the status quo—unequal access to learning opportunities, rigid and outdated policies that limit flexibility and innovation in schools, the need for new approaches to teacher preparation, and staff shortages —and present a clear path to preparing students for a rapidly evolving future.

The time to act is now. Understanding that the course is still shifting, CRPE will support the following recommended steps through evidence-based research, thought leadership, and convening leaders to inform, inspire, encourage, and drive action.

1. Convene and connect cross-sector leaders to strengthen AI literacy in support of education.

- Host other targeted convenings to bring district leadership and diverse AI voices together.
- Bring state and federal leaders from the U.S. to schools in other countries (South Korea, Singapore, etc.) that are tackling educational challenges with novel AI solutions. Push leaders' thinking on how governments can facilitate effective innovation and build cross-country relationships to steward best-in-class AI strategies on American soil.
- Design a quick and easy-to-understand "six-month roadmap" for district leaders to begin exploring AI's potential for students and educators. Starting with stakeholder mapping and core leadership development, this resource would guide leaders through these four steps to work with their local communities to set the foundation for AI in their districts.

2. Seed a national education leadership strategy.

- Create a leadership network to drive change during uncertain times and develop a comprehensive strategy to connect leaders across the AI and education sectors. This strategy should involve students, community and civil rights leaders, educators and school system leaders, policy advocates, and business and edtech leaders. As one attendee shared, "We need leaders with vision to change, not managers to keep [maintaining] the same."
- Design a targeted leadership and demonstration strategy, beginning with out-of-system and "edge" cases. This will require connecting advocates and system leaders who represent students with diverse learning needs (including advocates for students with disabilities and multilingual learners, parent advocates from cities with historically underserved populations, rural district

leaders, microschool leaders, etc.) with edtech leaders to demonstrate the opportunities AI could create for these students.

- Create and maintain a landscape map of the different actors involved in AI in education and their actions. This might be accomplished through a wiki or similar collaborative online resource (perhaps even one created using AI).

3. Focus on the "art of the possible" to spread powerful ideas for transforming education in the age of AI.

- Encourage AI uses both to improve the industrial-era grammar of school and to push beyond its current boundaries.
- Form a collaborative of leading districts, charter schools, technical support organizations, researchers, and foundations. The mission of the collaborative would be to rethink and redesign schools and education systems for a world where generative AI is ubiquitous. Over the next three to five years, participants would deeply examine and develop new school models, considering the projected impact of AI on education and learning environments.
- In the meantime, gather emerging use cases working well enough to be adopted and support a greater understanding of the technology. Improved translation and text-to-voice support for ELL students and parents, non-evaluative feedback, and summarizing pedagogical research for educators are among the short-term solutions that surfaced.
- Document near-term use cases that involve "connections to humans," including reducing teachers' administrative workloads and curating student interests to boost engagement.

4. Catalyze investment in research and development for early-stage AI adoptions, innovations, and collaborations.

- Design an "AI big bets" philanthropic fund that advances a clear vision for AI's potential to reimagine teaching, learning, and students' futures, especially for students who urgently need learning acceleration, mental health support, and other "wicked opportunities." Bring in diverse voices and perspectives to fine-tune the fund's priorities. Use this fund to motivate and align philanthropic giving in a cohesive direction for the next five years and create use cases of early adopters and toolkits for next-stage adopters.
- Create matching grants to incentivize state education offices to fund preliminary local conversations about AI between districts and their stakeholders. Districts can report back on data about participants and the next steps for further implementation.
- Build cross-collaborations and strengthen relationships to align philanthropic giving with emerging federal AI priorities, such as the Senate's recently released Roadmap for Artificial Intelligence Policy.

Conclusion: AI's Wicked Opportunities

As we think about orienting our education system toward the unknown, it's important to remember that innovation often comes from seeing problems differently. In that spirit, we must see AI not merely as a tool to fit into existing structures but instead as a lever to enable needed change in our education system. Like other sectors, we could make a giant leap to galvanize this charge. The possibilities are limited only by our imagination. Forum participants suggested:

- Fostering self-directed, self-paced learning that promotes agency
- Creating truly meaningful pathways from high school through college and career
- Measuring what matters beyond academics in a meaningful way and responding to the results
- Making the teaching job easier, different, and more exciting
- Bringing all students to grade level through a combination of better schools and new technology
- Harnessing the ability to develop the full potential of every human

This work is just beginning. We need more educators, edtech companies, funders, and thinkers to join spaces like Think Forward to develop a roadmap for the future—one that goes beyond technology and explores how to redesign schools, how to connect curriculum to the skills that matter most, and how to keep education in the generative AI era focused on what makes us human. AI can help turn these wicked problems into wicked opportunities, but only if we step back and focus on how to begin. As one participant said, "It's about how to move, not knowing where to go."

We conclude with a plea for action. Generative AI can feel overwhelming. There are many unknowns, many risks, and many opportunities. Yet, inaction is not an option. As Ethan Mollick, author of *Co-Intelligence: Living and Working with AI*, wrote:

> **"Many people in organizations will play a role in shaping what AI means to their team, their customers, their students, their environment. But to make those choices matter, serious discussions need to start in many places, and soon. We can't wait for decisions to be made for us, and the world is advancing too fast to remain passive…lest our inaction makes catastrophe inevitable…Decisions we make now will reverberate for decades."**

Early data suggest AI will likely exacerbate existing inequalities, barring targeted investments. Future generations of Americans will either prosper or struggle in the new economic and societal realities wrought by AI. The promise of AI in education could go largely unrealized if education leaders do not work with edtech to promote useful, high-quality tools. We must take strategic, deliberate steps now to design the education system necessary for students to thrive in an AI future.

Think Forward: AI Learning Forum Participants

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About the Center on Reinventing Public Education

The Center on Reinventing Public Education (CRPE) at Arizona State University's Mary Lou Fulton Teachers College is a non-partisan research and policy analysis center. Since 1993, we have focused on innovative, evidence-based solutions to improve public education. Our mission is to support education leaders in reinventing public education, ensuring all students access high-quality learning opportunities. We believe public education is a goal—to prepare every child for citizenship, economic independence, and personal fulfillment—rather than a set of institutions. From this foundation, we strive to understand and advocate for the changes needed in policy and practice to meet the needs of every student.