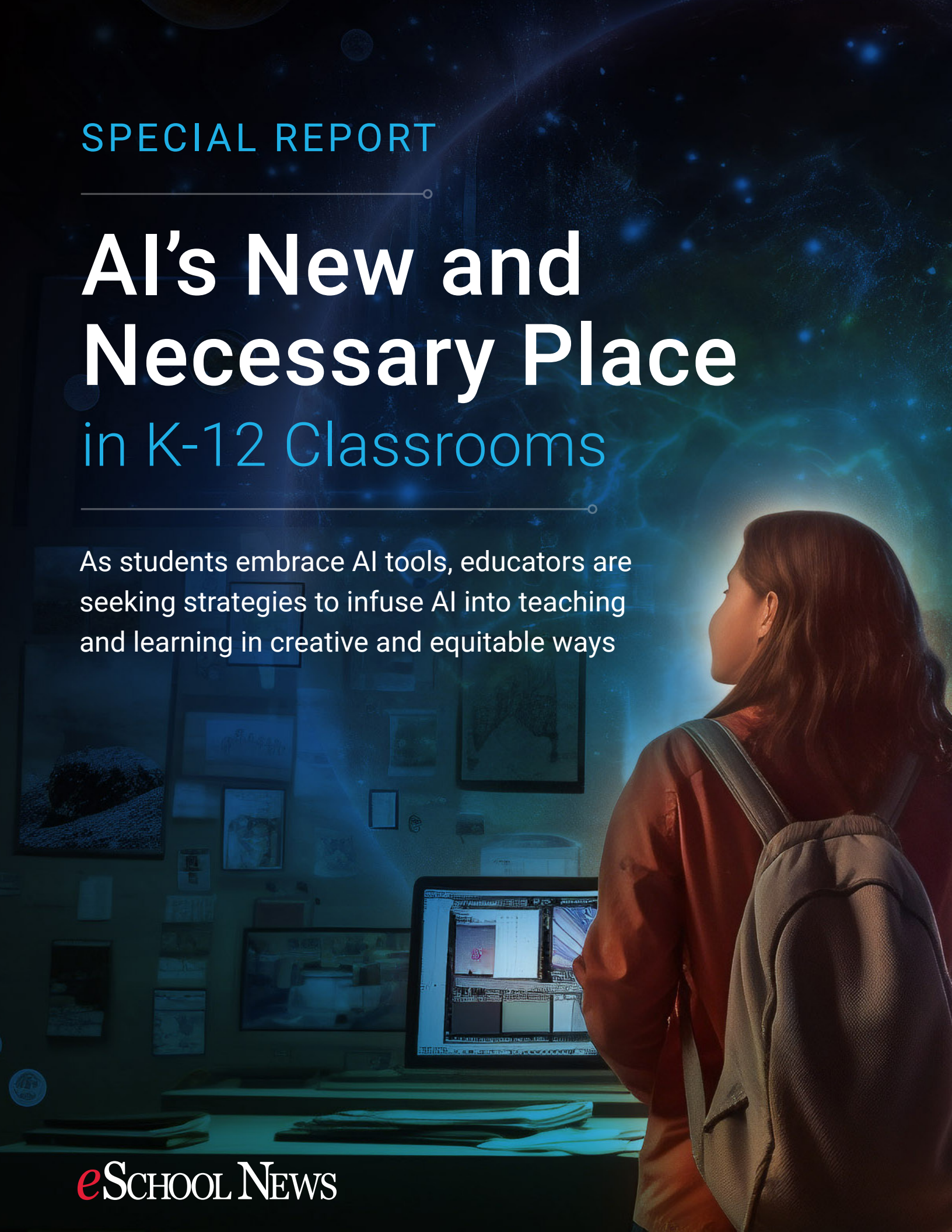
SPECIAL REPORT

# AI's New and Necessary Place in K-12 Classrooms

As students embrace AI tools, educators are seeking strategies to infuse AI into teaching and learning in creative and equitable ways



eSCHOOL NEWS

As artificial intelligence (AI) takes a more permanent place in classrooms (as permanent as any classroom technology can and should be), educators are discovering new and innovative ways to use AI to engage students, lighten the load of administrative tasks, and give students the AI skills that are becoming more and more essential for workforce success.

One of education's biggest arguments against AI use is that using AI is, in each and every case, cheating. But that mindset must change, noted Carl Hooker, author of the new book **Learning Evolution: The New Era of AI in the Classroom**.

When it comes to the increase in concerns around AI being used as a shortcut for learning or as a cheating tool, "we need to reframe that thought process," **Hooker wrote**. "While I don't deny that a student could use AI to help them complete a paper, is that cheating? If so, why? And why do we blame the tool used to cheat instead of looking at a larger problem in education?"

He continued: "The larger problem is that grading overemphasizes students' final *product* of learning instead of their *process* of learning. This creates scenarios in which cheating is almost inevitable. If a student doesn't understand the topic or is disinterested in it, they are going to try and figure out a way to get the 'A' so they can win at the 'game of school.' If teachers instead evaluated their learning process with the same weight as their final product, cheating would fall by the wayside."

When it comes to AI, teachers will have to make an effort to catch up with students. Because students are already exploring AI tools, teachers should guide them in discovering the many ways these tools can enhance their learning, ensuring it's done safely and supportively, noted Julianne Ross-Kleinmann, an instructional data analysis and technology specialist with New York's Ulster County BOCES.

"Artificial intelligence tools also have great potential to automate a lot of the grunt work in teaching. I have colleagues who have used AI tools to create rubrics and to offer feedback on rubrics they'd already created. AI can be helpful in creating lesson plans, assessment tools, presentations, seating charts, or letters to your students' families for back-to-school night. Putting AI to work on administrative tasks will free up their time to focus on supporting students," **Ross-Kleinmann wrote**.

"Once teachers do introduce AI tools to the classroom, it's important to focus on process, not product. AI still gets facts wrong all the time. It hallucinates information that never existed. It can be prone to biases and discrimination, can't understand emotions, and is incapable of creativity," she continued. "Students will need digital citizenship skills--along with traditional soft skills like critical thinking--to critique the output of these systems. Rather than focusing on the product AI gives us, assignments related to these tools should focus on the process of vetting them. How do you check facts? How might the output of this tool be affected by the samples it was trained on?"

## AI isn't the enemy—and its potential is virtually untapped

"In both higher education and K-12 education, AI offers numerous potential benefits, including early interventions via identifying students at risk and its ability to provide real-time feedback to both students and teachers, helping identify areas where students may be struggling and allowing for immediate intervention," **wrote Tulane University's Julia Lang and Stanford University's Dustin Liu**.

The discussion about AI's role in education is part of a broader conversation about changes in the workforce. By 2030, 12 million job transitions are anticipated, with experts predicting that 30 percent of current work hours in the U.S. economy will be automated. Traditional career paths and job security are becoming obsolete: A college degree no longer guarantees employment, and a conventional job no longer ensures a comfortable retirement. Some experts even predict that big data and AI could dominate the future, potentially replacing many human jobs, Lang and Liu noted.

"This reality should motivate our work as career educators to take on the daunting task of preparing students to enter a world of work that is radically shifting and becoming increasingly unstable. We recognize the limitations of these tools while also acknowledging the reality that AI will continue to play a critical role in the lives of our students and their future careers," they asserted.

Education's focus on AI today seems to be twofold: Generative AI tools can help personalize learning for students, leading to more engagement and stronger achievement, and it's also critical for students to develop their own AI skills to be able to compete in a workforce that will require such skills for jobs that are only just emerging.



# AI's promise in teaching and learning

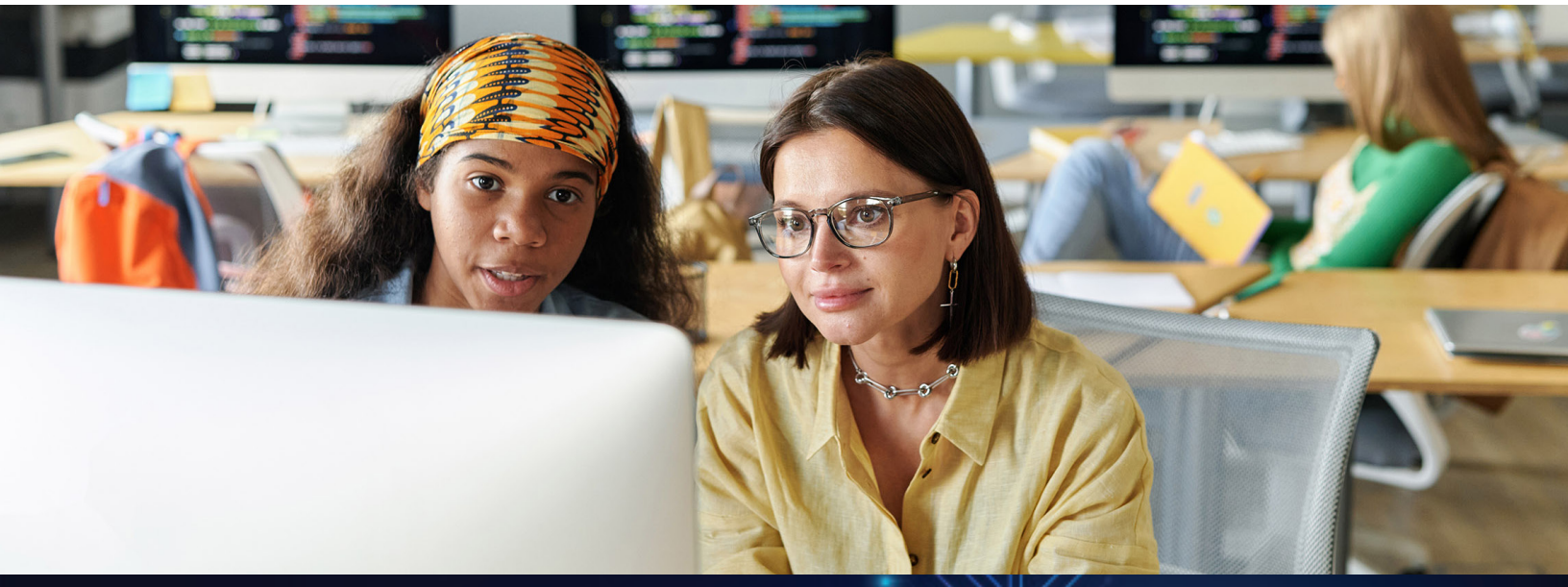
Weaving AI into classroom teaching and learning is still a new endeavor for even the most tech-savvy digital learning enthusiasts. Teachers **still struggle** with generative AI use even with defined AI use policies and professional development, according to **survey research** from the Center for Democracy & Technology (CDT).

The survey indicates that educators still grapple with numerous questions about responsible and safe student use of AI, forcing them to rely excessively on ineffective generative AI content detection tools, which leads to a rise in disciplinary actions against students and fosters ongoing distrust towards them.

"Since generative AI caught the education sector off-guard last school year, there have been plenty of think pieces about whether usage is a good or a bad thing. What we know for sure is that generative AI, and the tools used to detect it, require schools to provide better training and guidance to educators," observed Elizabeth Laird, Director of the Equity in Civic Technology Project at CDT.

Opening up acceptance around AI in the classroom will help educators tap into the myriad ways it can enhance teaching and learning.

"With AI-enhanced learning, our role as educators (and humans) becomes even more important. AI won't motivate a student to learn. It won't listen and react to their emotions or offer unsolicited help when they perceive struggle. It won't coach them, care for them, or be empathetic towards them," **Hooker wrote**. "These traits of human compassion will become more important in an AI-enhanced future. And, ironically, because of AI, educators can free up some of their time from menial tasks to actually focus on personalizing the educational experience for every student."



# AI in action

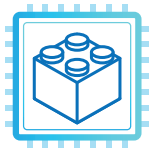
While using AI in the classroom sounds great in theory, educators can struggle to put it into practice and use it in meaningful ways.

Ben Talsma, a learning specialist at NWEA, offers a few **key ways educators can leverage AI**:

***1. Lesson plans:*** Lesson planning has traditionally involved a lot of busywork. With ChatGPT, educators can concentrate more on content and pedagogy. Here are a few tips: Use adjectives like "fun" or "meaningful" to customize it, specify the format you want (such as the 5 Es), and ask AI to create multiple versions of the same lesson plan so you can select the one you prefer.

***2. Overcome blocks:*** Facing a tough teaching challenge? Use AI as a trusted colleague to brainstorm solutions. For example, ask how to engage a disengaged student or assist a student struggling with a specific concept. Request multiple ideas so you can select the one that works best for you.

***3. Collaborate with AI:*** Encourage your students to use AI as a valuable collaborator. They can brainstorm ideas, receive suggestions for revising their work, and overcome challenges they encounter. By requiring the use of AI tools, you transform them from being forbidden into resources that can be used wisely and effectively--a shift that can change perspectives for both you and your students.



***4. Model, model, model:*** Students learn effectively through examples, and AI can provide plenty. For any concept you're teaching, use AI to generate examples for your students to analyze. Create a range of models, some stronger and others weaker, and let students compare, contrast, and evaluate them. Encourage them to identify shortcomings and suggest improvements. A useful strategy is to create "B+ Exemplars"--examples that showcase many great features but still leave room for student enhancement.

***5. Beat ChatGPT:*** Throughout their lives, students will need to add value beyond what AI tools can generate, making this exercise highly relevant! The idea is straightforward: provide ChatGPT (or your preferred AI tool) with a prompt you want your students to address, review its response, and use it as a model for your students to aim for. They can analyze its strengths and weaknesses, then strive to create a response that surpasses the AI's efforts.

# Students speak out on AI skills

With the rapid rise of generative AI, nearly one in two high school students polled by the Philadelphia-based **Society for Industrial and Applied Mathematics** (SIAM) say they believe the workforce as we know it today will undergo a major transformation.

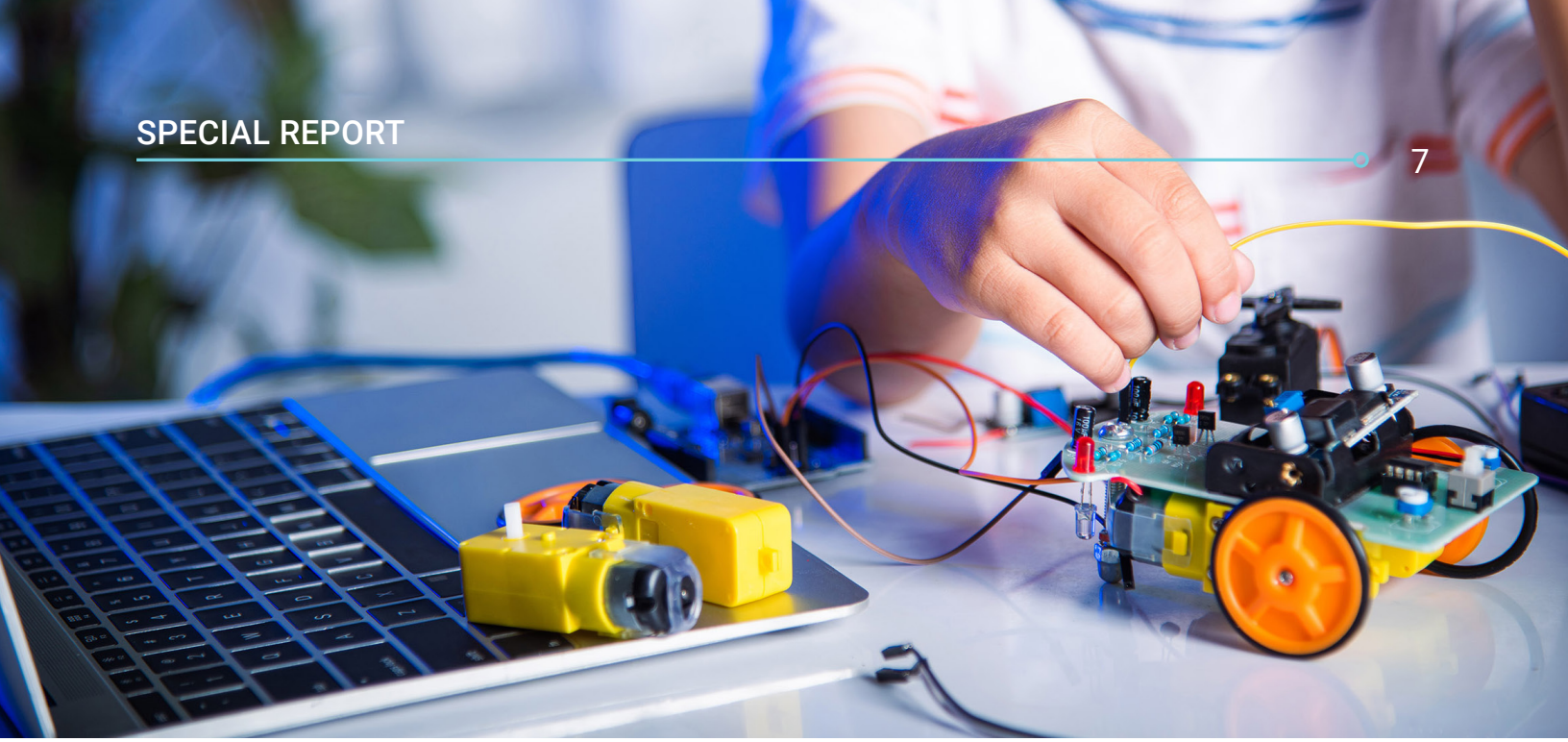
More than 48 percent of those surveyed believe that hard skills will become less important and durable skills such as reasoning and creativity will increase in demand--and as a result, 28 percent of surveyed students said workers will need to acquire new skills to thrive in the AI workplace. More than two-thirds are looking to their schools to help position them for future success.

The survey polled 825 11th and 12th grade students from across the U.S. and sixth-form students in England and Wales to get their insights on the impact of generative AI on their academics and future careers.

When asked what best reflects their thoughts about generative AI, 47 percent said they worry that it will be difficult for students of the future to reach their full potential in a generative AI world, relying on technology more than their own capabilities. About 40 percent said generative AI will change the world as we know it today, impacting almost every industry and career, and that it will be increasingly important to master generative AI tools to succeed academically and in the future workforce.

Nearly half of the students polled expressed some degree of concern about potential loss of jobs in the future workforce due to certain roles becoming automated or obsolete. Only 19 percent think the AI workforce of the future will deliver greater productivity as people work faster and smarter.

"The survey demonstrates that many students feel that they need to take steps now to prepare for an evolving workplace," said Dr. Karen Bliss, senior manager of education and outreach at SIAM.



## How schools can meet AI expectations for teachers and students

That same SIAM survey also touches on what schools can do to address students' concerns around AI skills development. Most survey respondents are looking to their schools for help and guidance, with 68 percent saying their school isn't doing enough to prepare students for the future world of AI.

The majority (62 percent) of surveyed students wondered if schools could offer guidance on the ethics of using AI, including boundaries related to AI content creation, misuse, and plagiarism.

Other student recommendations include having training on how to most effectively use generative AI tools for academics (58 percent), teaching the limitations of AI as it relates to academics (41 percent), and help identifying careers that may be--or are less likely to be--disrupted by AI so students can plan their future academics accordingly (38 percent).

"Interestingly, one in five students would like to see schools offer extracurricular activities to boost their AI skills and experience, while almost as many think it would be helpful if teachers make using generative AI tools mandatory in assignments," Bliss said.

When it comes to AI in education, most K-12 teachers and administrators acknowledge that AI is part of the future of education, whether we like it or not, according to a survey from the **AI Education Project** (aiEDU).

Despite some uncertainty, educators see AI as an inevitable part of the future of the classroom and would like to receive AI-centered professional development.

aiEDU's survey offers action points around how schools can address educators' concerns around AI in a way that helps them comfortably embrace the tool:

**Develop comprehensive AI literacy programs:** Implement AI literacy programs for educators to deepen their understanding of AI's capabilities and ethical considerations, ensuring they can effectively integrate AI tools into their teaching practices.

**Create collaborative platforms for sharing best practices:** Establish platforms where educators can share experiences, strategies, and lesson plans that incorporate generative AI, fostering a community of practice that supports peer learning.

**Invest in equitable access to AI technologies:** Ensure all students, regardless of socioeconomic status, have access to AI tools and resources, addressing the digital divide and preventing the exacerbation of achievement gaps.

**Promote ethical AI use through curriculum development:** Incorporate curriculum components that teach students about the ethical use of AI, including issues of privacy, bias, and digital citizenship, to prepare them as informed users and creators of AI technologies.

**Facilitate professional development opportunities:** Support ongoing professional development opportunities focused on generative AI, including workshops, seminars, and courses, to keep educators abreast of the latest advancements and pedagogical strategies.

## What do students actually need from AI?

There are five skills we need to be teaching our students for success in an AI world, noted **ISTE CEO Richard Culatta**:

**1. Teach students how AI really works.** Understanding is key to knowing its limitations; we need students to understand when it might be inappropriate to hand an important decision to AI because of the bias in the machine. But on the flip side, we need students to understand when it might be irresponsible NOT to hand an important decision off to AI. AI is a tool that can be used for good if we know how it works, and in order to do that, we need educators who understand how it works.

**2. Teach students how to use AI to support brainstorming.** As the world gets more complicated, the number of problems we have to answer grows exponentially. We need the ability to brainstorm 30, 40, or 50 solutions and choose the best one. Learning to be able to outsource the development and the brainstorming to AI and choose the best option is a critical skill.

**3. Teach young people how to work on hybrid teams.** Not teams split between those onsite and those at home, but teams that are part human and part AI.

**4. Teach curation over creation. Schools are designed to teach students how to create.** In a world where AI can be used to generate very quickly, is that the best use of a student's time? We may worry that if we don't have students come up with the solutions on their own, they might not be very smart. But perhaps it's time to re-think the purpose of school and think about whether the skills of the future can–and should–be curating and recognizing the right response over generating it from scratch.

**5. Of critical importance is the question of how we learn to be better at being human.** One question we need to ask is: What's the value of being human in an AI world? Humans have had a monopoly on decision-making, written language, and advanced reasoning for thousands of years. We've never had to justify what our value is. As AI begins to do some things better, make sure young people are really learning to exercise those skills that can't be reproduced by a computer, including empathy, honesty, creativity, and civility.

## Looking ahead to AI in the workforce

To address concerns surrounding how, exactly, to teach students to use AI in a responsible and productive manner so they are prepared for the workforce, the Southern Regional Education Board (SREB) has established the **Commission on Artificial Intelligence in Education**.

Chaired by South Carolina Gov. Henry McMaster and co-chaired by Brad D. Smith, president of Marshall University (WV) and former Intuit CEO, the new commission comprises policymakers, education leaders, business leaders, and education stakeholders from 16 states. Members will tackle AI's role in education from kindergarten through postsecondary programs, focusing on AI skill readiness and policy development.

The commission will review research and industry data and hear from education experts as it develops recommendations for southern states around using AI in teaching and learning, developing AI-related policies, and preparing students for careers in AI.

Top of mind for commission members is how to ensure AI is thoughtfully infused in K-12 and postsecondary curricula in a manner that equips students for success in a workforce that will demand AI skills and know-how for jobs that largely do not yet exist.



"This isn't the age of Rosie the Robot taking over jobs–there will be jobs. The question is, are we going to have people equipped to fill those jobs?" said SREB President Dr. Stephen Pruitt during a conference to discuss the group's first meeting.

Ultimately, the group will strive to ensure students aren't lagging behind in a rapidly evolving workforce that is increasingly centered around AI knowledge.

"We're really preparing our institutions to prepare people for a world that's changed. They say about 60 percent of our jobs will be impacted by AI. Well, how do we use that technology to better prepare students for a world that will be very different from the world we're currently in?" said Jim Purcell, executive director of the Alabama Commission on Higher Education.

Ensuring all students have access to AI skill development will play an important role in equity and access if AI skill frameworks reach students across all trajectories, particularly because education is key to economic mobility.

"In Florida, we've developed frameworks for learning standards going through our CTE division. In this division, students are learning high-level concepts, allowing them to become employable as we talk about this new Industrial Revolution 4.0, where there are jobs that haven't been created yet," said Nancy Ruzycki, an instructional associate professor and director of Undergraduate Laboratories at the University of Florida. "So, what skills do they need to learn, and how do we help them prepare? Helping people get into the AI pipeline provides equity and access for all students."

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