**We affirm  
  
Contention one is: updating our outdated education**

# **The American Education system is falling behind, something needs to change, and fast, Harvard 24**

# [Harvard University, “The scary truth about how far behind American kids have fallen”, 9/20/2024, Center for Education Policy Research at Harvard University, https://cepr.harvard.edu/news/scary-truth-about-how-far-behind-american-kids-have-fallen]//nishu

**Kids are behind in reading and math**, **and** they’re **not catching up. Nearly all public schools in America** closed by the end of March 2020, and while some reopened that fall, others did not fully resume in-person learning until fall 2021. The switch to remote school, along with the trauma and upheaval of living through a global health emergency in which more than a million Americans died, dealt a major blow to students’ learning. **Scores on** one set of **national tests**, released in September 2022, **dropped to historic lows,** reversing two decades of progress in reading and math, the New York Times reported. Still, experts were optimistic that students could make up the ground they’d lost. NWEA’s MAP tests, which measure academic growth, showed a strong rebound in the 2021-22 school year, said Karyn Lewis, vice president of research and policy partnerships at NWEA. But **growth slowed** the **following year**, and now **lags behind pre-pandemic trends. Kids “are learning** throughout the year, **but** they are **doing so at a** slightly **sluggish pace**,” Lewis said — not enough to make up for their Covid-era losses. A team of researchers using separate data from state tests appeared to find more hopeful results earlier this year, documenting significant recovery in both reading and math between 2022 and 2023. **But after reanalyzing their data, they found that the improvements in reading were probably produced by changes in state tests, not actual improvements in student achievement, said Thomas Kane, faculty director of the Center for Education Policy Research at Harvard** and one of the leaders of the research team. In fact, though students did gain some ground in math, they showed little recovery in reading between 2022 and 2023. More recent data does not paint a rosier picture. About half of states have released test results for the 2023-24 school year, and “I **don’t see** a lot of **states with** substantial **increases**” in scores, Kane said. Many factors probably contribute to students’ slow recovery, experts say. Some may have missed “foundational pieces” of reading and math in 2020 and 2021, Lewis said. Learning loss can be like a “compounding debt,” she explained, with skills missed in early grades causing bigger and bigger problems as kids get older. Chronic absenteeism also remains a big obstacle to learning. Twenty-six percent of students were considered chronically absent in 2022-23, up from 13 percent in 2019-2020.

**AI is key, it’s a fresh spark in the engine**

**UIUC 24** [The University of Illinois Urbana-Champaign, “AI in Schools: Pros and Cons”, 10/24/2024, UIUC College of Education, https://education.illinois.edu/about/news-events/news/article/2024/10/24/ai-in-schools–pros-and-cons]//nishu

We have already mentioned some of the advantages of **AI in education**—**inspir**ing **creativity**, summarizing existing materials, and so on. This section will delve deeper into the pros and cons of AI in schools, focusing on how these tools can reshape the learning environment. Here’s a brief look at eight more advantages. It can be used to personalize learning. AI **can help** you **tailor** your **content to** individual **student** needs and learning styles, based on AI-driven analytics that **give you insight into student performance and learning trends**. In this way, **AI helps students be more engaged and motivated**. It can provide students with immediate feedback. AI offers students instantaneous and detailed feedback on their work, **helping them to see their strengths and weaknesses**. Such feedback enhances understanding and learning outcomes—and helps teachers to know what to focus on in future lessons. **It can be used to create and supplement content. Through AI-powered platforms**, you can create lessons, activities, assessments, discussion prompts, and presentations simply by providing a short prompt with keywords. It can result in more inclusive lessons. AI has powerful tools that make previously inaccessible material available to students with special needs. Tools that offer text-to-speech, visual recognition, speech recognition, and more can help teachers adapt resources so that all students have an equal learning opportunity. It can provide greater access to resources. Educators can access a wealth of AI-powered platforms to facilitate and enhance the learning that takes place in their classrooms. Just a few examples are Canva Magic Write, which helps in brainstorming, outlining, and lesson planning; Curipod, which enables teachers to quickly create interactive lessons; Eduaide, which provides teachers with more than 100 resource types to choose from to create high-quality instructional materials; and Quizzizz, which can be used to design quizzes that will create a personalized learning path based on each student’s responses. It can make abstract concepts more understandable. Image-generating AI tools such as Picsart and Visme can turn complex concepts into more readily accessible content. It can be used to handle administrative tasks. You can use AI to streamline administrative tasks such as grading, scheduling, communicating with parents, and managing student records. This frees you up to do what you do best: teach. It affords you more hands-on time with students and helps to ensure that no students fall through the cracks. It can foster critical thinkers. The advent and growing use of AI in classrooms lends itself to discussions regarding critical thinking and e\thical considerations. **Students** are naturally intrigued by AI. The rich discussions that you **can** facilitate can help them **grow and develop as thinkers and learners.**

**AI updates education in 2 key ways, the first is learning efficiency**

**Generative AI is specifically key, it allows for better augmentation and organization**

**Baier MIT 25** [Paul Baier, “Turbocharging Organizational Learning With GenAI”, 1/13/2025, MITSloan, https://sloanreview.mit.edu/article/turbocharging-organizational-learning-with-genai/]//nishu

**Generative AI** can **radically improve** an organization’s **ability to learn**. With OpenAI’s introduction of ChatGPT in November 2022, for the first time in the 200-plus-year history of advanced automation, the machines talked back. Instead of having to “speak” Java or Python, people could use everyday dialogue — which is why the tool garnered more than 100 million users in its first two months of public availability.1 More profoundly, by **facilitating interaction** in human language and deftly **handling unstructured words, images, numbers, and sounds, GenAI opened up** an **entirely new way of creating,** capturing, **and transferring** organizational **knowledge**. In this article, **we**’ll argue that leaders **need to embrace generative AI as** a **new** organizational **capability**, and not just because it automates a variety of tasks economically. Combined with traditional AI, generative AI expands the scope of potential improvement in many processes and decisions and the ease with which this **new knowledge can be applied. This, in turn, creates the potential for a positive compounding effect on organizational learning, with human and machine agents working in concert to create new competitive advantages.**

**It’s proven, we see access to more resources and learning**

**Wiley 24** [David Wiley, “Why Generative AI Is More Effective at Increasing Access to Educational Opportunity than OER”, 9/10/2024, opencontent, https://opencontent.org/blog/archives/7589]//nishu

Because it can create new resources on demand, **generative AI** can **provide access to dramatically more resources, on more topics, in more languages, with more examples, using more pedagogies, in more formats**, etc., than the current “create traditional OER by hand through a bespoke process” approach can. When we connect this fact back to the primary goal of the open education movement, the implication becomes clear. If: the primary goal of the open education movement is to **increase access to educational opportunities**, and the primary strategy for accomplishing this goal is to increase access to educational resources, and generative AI can provide access to dramatically more resources than the current bespoke OER authoring process can, then the optimal tactic for accomplishing the open education movement’s primary goal is no longer creating and sharing traditional OER – **the optimal tactic for accomplishing** the open **education** movement’s primary goal **is to use generative AI.**

**The 2nd is accessibility**

**Gen AI is key for accessibility in learning**

**Siddiqui 24** [Talha Siddiqui, “Using Inclusive Learning: How Generative AI Makes E-Learning Accessible to Everyone”, 11/3/2024, Adobe eLearning, https://elearning.adobe.com/2024/11/using-inclusive-learning-how-generative-ai-makes-e-learning-accessible-to-everyone/]//nishu

1. Personalized Learning Paths: Adaptive Content That Meets Unique User Needs – Why it is important? A common characteristic of eLearning offerings is the use of the content with a majority of users in mind. Such a format will be a setup to failure for hope and is crucial for those needing extra aid or even just possess a different ‘learning backbone’ and seek an alternative method. If such content does not fill in the expectation of the learner, he or she is likely to switch to lower cognitive modes of learning because they expect to learn in a more intuitive or more simple form or because they fall into the passive learners or laggards category. The Conception begins with every child is different so every child has to be catered to in a different manner. – How Generative AI Can Help:**Generative AI** enables a major game change in how content will be delivered as AI-powered static **content will** enable content to **adapt to each viewer.** Agitations such as supply shortage are going to be alleviated as supply will increasingly be in more control. **Engagement is a key factor in the education system**s and understanding which learners AI remember, and support are becoming progressively important. **For instance, if a student struggles with certain concepts, generative AI can automatically slow down the pace, show more examples or provide more materials reinforcing the concept allowing the learner to grasp the concept more easily** reinforcing their persistent understanding of the content. – Real-World Example: Let’s suppose learners enroll in an online coding course with different prior knowledge. AI can track the advancement of each student, and unify the difficulty levels of tasks and examples with the students’ levels. As for beginner students, who may be given exercises of why such concepts are needed, more advanced users might have to take coding as more challenging devising exercises, as to not preoccupy themselves with trivial tasks. The ability to learn in such a help customized way is impressive by itself on a technological level; however, the most important aspect is providing for and addressing the needs of every single learner. 2. Breaking Language Barriers: Instant Multilingual Support for Global Reach – Challenge: In eLearning, **language barriers may be a** huge **hurdle** preventing non-native speakers from accessing knowledge. Global expansion of the digital learning platform elevates the necessity for such resources to be available in several languages to a higher level than ever before. From first world countries, students can be fretted by the difficulty of understanding certain aspects of the topics being explained in a single language, or having a miss out on some major components because of the same language barrier. – How Generative AI Solves This: The application of **generative AI removes this problem** as it translates documents at one shot rather than localizing the text/tables. This basically means rewriting a document to fit the local context rather than just changing the words, which makes sure the relevant material is delivered and **the learner** was **give**n the **best opportunity to learn regardless of his/her background.** Considering this process of localization, it allows for students from other countries to use the materials in the languages that they understand , therefor ensures that no student feels excluded by such designed learning systems. – Advantage To Users: In terms of students, this translates to getting materials that are in a language that the students are well acquainted with and fully understood encouraging competitiveness. Exclusion in learning becomes a myth thanks to the AI that provides multilingual support to language learners. – A Practical Advice for Teachers and Schools: Translating languages using AI powered plugin can enable educators and organizations to provide for multilingual versions of its contents within a very **short period of time**, which also extends the target audience of eLearning programs while ensuring that every lesson is understandable and the intent of it is retained, in whatever language the lesson is taught. 3. **Assisting Students with Disabilities:** Features that Promote Learning in Real-Time a. Audio and Visual Aid Generation for Diverse Needs: – User Requirement: eLearning is a nightmare for students with similar disabilities when it comes to being able to learn content without the right aids. Alongside the educational struggle, those learners not only ‘feel’ as if they lack the technology, but the entire world around them is ‘silent’- entirely leaving them in the dark when it comes to knowledge and modernism. – How Generative AI Helps: In a matter of learning, **generative AI resolves issues in an instant manner** – giving audio to videos in an audio description format or attaching captions alongside. Taking a sight-impaired learner as an example, Artificial Intelligence **enhanc**es their **learning** through videos by adding in text which explains the scenes. These features always **ensure that every learner with specific and varying needs is able to interact with the content** without having visual descriptions as to what they can see. – Example in Action: For instance, take a learner who is visually impaired and needs to be able to understand the elements within their lesson- be that an infographic or something else, generative AI can formulate an instant descriptive text that would outline the main points to the learner without them struggling to process information in great depth. b. Text Simplification and Reading Aids: – Purpose: With us living in a first world society, **many of us easily forget that there are learners** who find it extremely difficult to be able to read pages upon pages of text, visually stunning forms of content or excessive expository writing- needless to say the importance this has for students **with cognitive disabilities.** **– Solution** powered by **Generative AI:** Generative AI application does allow assistance in alternative content creation. For example, the application can generate paraphrased texts, which are simpler or less complex in terms of wording. Other functionalities which are useful and also can be found in any computer are ‘read-aloud’ options to allow the learners to listen to the content rather than reading it. Thus, it enables learners who need help by presenting the hard materials in a much simpler way. – User Story: Now let’s take a case of a learner having dyslexia, trying to interact with a complex lesson: Class dyslexia. So, for that, the learner uses AI text simplification and read-aloud programs to create the lesson class which is suitable for them.

**The two methods are being proven right now, the US ought to be next**

**Willige 24** [Andrea Willige, “From virtual tutors to accessible textbooks: 5 ways AI is transforming education”, 5/10/2024, World Economic Forum, https://www.weforum.org/stories/2024/05/ways-ai-can-benefit-education/]//nishu

**South Korea's Ministry of Education** plans to introduce **AI-powered** digital **textbooks** in primary and secondary schools starting in 2025. It’s a bid to **address educational inequality** **as well as the reliance on private education and the country’s highly competitive education culture**. AI will be deployed to create personalized learning opportunities so pupils can learn at their own pace. The programme will start by offering mathematics, English and informatics, and eventually encompass the entire roster of subjects. The Ministry has emphasized taking a collaborative approach between human teachers and AI assistance. In a panel session on the use of AI in education at the Forum’s recent Special Meeting on Global Collaboration, Growth and Energy for Development, Gaspard Twagirayezu, Rwanda’s Minister of Education, also underscored the value of personalized learning: “AI has the potential to assess the ability of individual students and then be able to customize content for them to learn.” Creating an equitable educational environment is also at the heart of an initiative by the Ministry of Education **in the** United Arab Emirates (**UAE**). The project, set to launch later this year, aims to **boost students’ academic performance and enhance critical thinking skills** through **AI-powered personalized learning**. An AI tutor will tailor lessons to individual students’ needs and learning styles, proffering the level of support they require. It will also manage students’ continuous assessment, give targeted feedback and provide the right resources a learner needs to develop. Real-time analytics enable teachers to deploy adaptive, personalized strategies. By automating certain teaching tasks, the project aims to enable teachers to focus more on strategic and interactive elements of the learning journey. A pilot project has already vindicated the approach by demonstrating a 10% increase in learning outcomes. AI can also improve educational outcomes in areas such as accessibility.**Globally, there are 240 million children with disabilities.** A large majority of them do not have accessible learning materials, technologies or educational support, the Forum’s report says.**UNICEF is now leveraging AI to overcome this**, creating digital textbooks that cater for diverse learners. The textbooks make content adaptable to individual students’ needs by offering functionality such as sign-language videos, interactivity, audio descriptions and text-to-speech conversion. Students will be able to download the materials and use them offline. This will be a vital advantage in countries with large digital divides, as Deemah Al Yahya, Secretary-General of the Digital Cooperation Organization, stressed at the Special Meeting: “We have 2.7% of the population unconnected. They're not even on the grid, they don’t have basic connectivity or internet.” An educational technology start-up **in** Mali, **West Africa** aims to upskill young people in a setting with limited formal employment prospects. More than 80% of employment in Africa is informal. Kabakoo Academies uses social media content and local partnerships to reach young people in urban and semi-urban West Africa. Kabakoo focuses on experiential learning with a real-life network of students and mentors. However, its app makes an **AI-based virtual mentor** available **24/7, offering guidance, resources and advice** as needed. It also provides personalized feedback on learners’ assignments. Among the successes reported by students is a 44% increase in income six months after completing the programme. With **Brazil** underperforming in the OECD’s latest PISA performance rankings, the Letrus programme aims to **boost literacy levels across middle and high schools with** the help of **AI**. The programme specifically targets the divergent performance of low- and high-income students. Letrus focuses on personalized learning through AI, offering real-time feedback for students and progress data to educators and school managers. Teachers benefit from tailored content and practical recommendations for individual students and at class level. The initiative has shown significant success in improving student performance in writing exams in the state of Espirito Santo, with Letrus being chosen as the official literacy development programme for all of its high schools. **The World Economic Forum**’s Shaping the Future of Learning 2024 report **concludes** that integrating **AI in**to **education** has great potential for **improv**ing **student**’s **learning** experiences and **outcomes**. It also points to the need for scaling AI literacy to prepare learners at all levels for future job markets. However, the Forum also acknowledges the potential risks of AI, especially if it is rolled out too quickly and without the right governance and guardrails in place.

**Education is key to better jobs**

**Bureau of Labor Statistics 20** [US Bureau of Labor Statistics,” Learn more, earn more: Education leads to higher wages, lower unemployment”, 5/2020, US Bureau of Labor Statistics, https://www.bls.gov/careeroutlook/2020/data-on-display/education-pays.htm]//nishu

If you’re wondering whether it pays to stay in school, take a look at data from the U.S. Bureau of Labor Statistics (BLS): As workers’ educational attainment rises, their unemployment rates decrease and earnings increase. Median weekly earnings and unemployment rate by education attainment, 2019 Bar chart with 2 data series. The chart has 1 X axis displaying categories. The chart has 1 Y axis displaying values. Data ranges from 592 to 1883. End of interactive chart. View Chart Data As the chart shows, workers age 25 and over who have **less education** than a high school diploma had the **highest unemployment rate** (5.4 percent) and **lowest** median weekly **earnings**($592) in 2019 among those at all education levels. Workers with graduate degrees had the lowest unemployment rates and highest earnings. These data come from the BLS Current Population Survey, a monthly survey that collects information about the labor force, including age, employment status, and other characteristics. Each level of **education** you complete may **help you develop more skills, give you access to higher paying occupations,** and signal that you’re able to follow through on important tasks, such as planning ahead and meeting deadlines, that employers value. Other factors affecting employment and earnings include geographic location, experience, and hours worked. BLS data and information can help you understand some of these factors. For example, the Occupational Outlook Handbook provides information on wages, typical education requirements, and the projected job outlook for hundreds of occupations.

**Ensuring education and creating jobs is key for solving poverty**

**Misra 17** [Jagriti Misra, “The Relationship Between Jobs and Poverty”, 9/24/2017, The Borgen Project, https://borgenproject.org/jobs-and-poverty/]//nishu

The proportion of the world’s population living in extreme poverty has decreased significantly since 2012, with 767 million people, or 10.7 percent of the population, now living below the international poverty line, which is $1.90 per person per day. Despite the global financial crisis of 2008-2009, the world poverty rate has steadily declined over the past decade. **To have any hope of escaping poverty**, income from **stable work is essential. According to** Annette Dixon, **World Bank** South Asia Region Vice President, **jobs are necessary to push people out of poverty**. A flourishing private sector can help with job creation, while investments in education, healthcare and social protection can ensure that people are credentialed appropriately for those jobs. Investing in women’s education is also imperative if countries are to pull themselves out of poverty. In fact, a woman’s earning potential increases by 20 percent with every year of schooling she receives. A recent study conducted by the World Bank on factors affecting poverty found a **strong correlation between better jobs and poverty reduction**. The study, which was conducted in Cambodia, Mongolia, Philippines, Thailand, Timor-Leste and Vietnam, found that a steady income was the largest contributor to poverty reduction. With the exception of the Philippines, incomes from **jobs** explained 40 percent of the observable reduction in poverty. On the other hand, in Timor-Leste, the loss of labor income between 2001 and 2007, during a period of civil conflicts, explained almost all of the increase in poverty. The type of labor income plays an important role when discussing better jobs and poverty reduction initiatives. While work in agriculture was a major driver of poverty reduction in the 1980s and 1990s, more recently this has been replaced by wage incomes. Wage incomes **explain 50 percent of poverty reduction** in countries like Vietnam, the Philippines and Cambodia. In this respect, a flourishing private sector and employment-related training can help bridge the gap between skilled labor and targeted jobs. The bottom line is that ending poverty and boosting shared prosperity hinge on creating better labor market conditions for the poor. In other words, steady income through better jobs and poverty reduction go hand in hand. Job creation, higher productivity and growth in real wages at the bottom of the distribution are the main mechanisms to achieve sustained poverty reduction.

**Solving poverty with better education in America is key, it kills**

**Carbonaro 23** [Giulia Carbonaro, “Poverty is Killing Nearly 200,000 Americans a Year”, 6/22/2023, Newsweek, https://www.newsweek.com/poverty-killing-nearly-200000-americans-year-1806002]//nishu

The land of the free is suffering from a "self-inflicted" injustice when it comes to poverty, experts say, as the rich are getting richer while **thousands living without sufficient means die every year in the United States**, as a recent study shows. The issue, according to an exclusive poll conducted by Redfield & Wilton Strategies on behalf of Newsweek, worries a majority of Americans. **Research by the University of California, Riverside (UCR)** published earlier this year **in the Journal of the American Medical Association found** that **the death of 183,000 Americans** aged 15 years old and above in 2019—**a year** before the explosion of the pandemic were to make mortality rates in the country much, much worse—could be **attributed to poverty**, defined as those with incomes lower than 50 percent of the U.S. median. In 2019, the median household income was $69,560. In the same year, about 34 million Americans—10.5 percent of the country's population—were estimated by the U.S. Census Bureau to be living in poverty. Poverty remains a huge issue in the U.S., much more so than in other countries with similar levels of distributed wealth, and it is a cause of concern for a majority of Americans, as shown by the Newsweek/Redfield & Wilton Strategies poll. The poll, conducted among a sample of 1,500 eligible voters in the U.S. on May 31, found that some 53 percent of **Americans are** "very" **concerned about the level of poverty in the country**. Among Democrats—identified as people who voted for Joe Biden in 2020—the number went up to 58 percent, while among Republicans—identified as people who voted for Donald Trump in 2020—48 percent said they were "very" concerned about poverty in the U.S. Some 21 percent of Americans responding to the poll don't earn enough money from their primary job to pay bills or maintain their family's standard of living, while 52 percent are working multiple jobs to tackle the daily cost of living. **More women (24 percent) than men (18 percent) said they didn't earn enough money to pay the bills, while more men (57 percent) than women (49 percent) said they were doing more than one job. The age cohort with the biggest percentage of people doing more than one job was 35-44, with 77 percent of respondents working multiple gigs.**

## **Contention 2 is Cyber**

### **Right now, U.S. cybersecurity is strong.**

**Gedeon 25. , Joseph [Joseph Gedeon is a politics breaking news reporter based in Washington.] , 1-16-2025, "Biden strengthens US cyber defenses against Russia and China threats," https://www.theguardian.com/us-news/2025/jan/16/biden-cyber-china-russia, accessed 2-20-2025, //ZM**

**The Biden administration is making a final push to fortify America’s cyber defenses against mounting threats from China and Russia, issuing a sweeping cybersecurity executive order just days before leaving office that aims to tackle vulnerabilities from outer space to consumer electronics. The wide-ranging directive is likely to be the administration’s last big policy push before handing the keys over to Donald Trump, who heads to the White House next week and inherits a new world of cyber-attacks that have cost the nation billions of dollars and punctured government offices. “The goal is to make it costlier and harder for China, Russia, Iran, and ransomware criminals to hack and to signal that America means business when it comes to protecting our businesses and our citizens,” a senior administration official told reporte rs on Wednesday. The order arrives in the wake of devastating Chinese-linked cyber-attacks, including recent breaches of the US treasury department and telecommunications systems that reportedly compromised communications of incoming president Donald Trump and vice-president-elect JD Vance. Among its most striking provisions is a mandate for federal agencies to implement end-to-end encryption for email and video communications, alongside new requirements for artificial intelligence-powered cyber defence systems and quantum computing safeguards. A federal building with exterior columns visible through a fence Chinese hackers breach US treasury network, gain access to some files Read more Central to the order is an expansion of the Cybersecurity and Infrastructure Security Agency’s (Cisa) powers to hunt for threats across federal networks. The nation’s premier cyber agency – which Trump put together in 2018 – will gain new authorities to verify security commitments from government contractors and coordinate with federal technology officers. The order mandates that by 2027, federal agencies may only purchase internet-connected devices carrying a “cyber trust mark” – effectively using government procurement power to pressure manufacturers to improve security standards for products like baby monitors and home security systems. The directive also ventures into the great unknown, requiring enhanced cybersecurity measures for space systems following Russia’s targeting of Ukrainian satellite communications during its invasion.**

**Trump is continuing to strengthen cybersecurity. Frazier 25.**

**Frazier, Sean. [Sean Frazier is Federal CSO at Okta. Prior to joining Okta, Sean spent more than 25 years working in technology and public sector security for companies such as Duo Security, Netscape, LoudCloud/Opsware, Proofpoint, Cisco & MobileIron. Sean has testified in front of the U.S. Senate Homeland Security and Government Affairs Committee on the importance of public/private partnership in protecting the nation’s digital infrastructure] “What a Change of Power in Washington Means for Cybersecurity.” *Okta*, Okta Inc., 28 Feb. 2025, www.okta.com/blog/2025/02/what-a-change-of-power-in-washington-means-for-cybersecurity/?amp=.//ZM**

**Four days before the second inauguration of President Donald Trump, his predecessor** [**President Joe Biden issued an executive order**](https://www.okta.com/blog/2025/01/okta-applauds-new-cybersecurity-executive-order/) **that aimed to create a national cybersecurity strategy across federal agencies, private businesses, and critical infrastructure sectors. While President Trump has been quick to roll back other executive orders in his first weeks as president, President Biden’s eleventh-hour call for enhanced cybersecurity is still intact. This suggests that President Trump’s office is aligned with its foundational principles and that cybersecurity will remain a critical priority.**

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### **This is because of gen A.I. adapting cybersecurity.**

### **Mata 25 Kevin Mata [Kevin Mata is the Director of Cloud Operations at Swimlane, where he brings over seven years of experience. In this role, Kevin supports a diverse clientele, ranging from large Fortune 100 corporations to smaller Managed Security Service Providers. Kevin has served as a cybersecurity engineer on the Incident Response team at a Fortune 25 company, where he spearheaded the design, development, and implementation of a Security Orchestration, Automation, and Response (SOAR) platform for the Security Operation Center (SOC). His expertise also extends to software engineering, where he developed ETL applications to streamline processes and enhance automation. Prior to joining Swimlane, Kevin worked at San Diego Gas & Electric, as a Cybersecurity Engineer, where he played a pivotal role in enhancing the company's security posture.] Providing Advanced, 1-17-2025, "How Can Generative AI be Used in Cybersecurity," https://swimlane.com/blog/how-can-generative-ai-be-used-in-cybersecurity/, accessed 2-22-2025, //ZM**

**Generative AI is reshaping cybersecurity by providing advanced threat detection, automation, and data analysis capabilities. However, as generative AI evolves, its potential applications will become limitless. Its ability to generate insights from complex data enables faster, more accurate identification of threats, helping organizations enhance their security posture and stay ahead of cyber attacks. Read on to explore how generative AI is applied in cybersecurity and its potential benefits. How Has Generative AI Affected Security? Generative AI has transformed cybersecurity by enhancing threat detection and incident response by analyzing vast amounts of data in real-time. Leveraging machine learning and deep learning techniques allows organizations to identify and mitigate emerging threats faster and more accurately than traditional methods. Generative AI in Cybersecurity Benefits While generative AI has caused positive and negative disruptions, it ultimately enhances cybersecurity operations by streamlining workflows, accelerating response times, and minimizing human error. Its ability to continuously learn from data and adapt to new threats makes it a valuable tool for proactive defense, allowing security teams to stay ahead of evolving cyberattacks.**

### **It helps schools specifically.**

**Fortinet 24 [No Author], Fortinet, 5-22-2024, "AI and advanced analytics can proactively fight cybersecurity threats in schools. Here’s how.," https://govinsider.asia/intl-en/article/ai-and-advanced-analytics-can-proactively-fight-cybersecurity-threats-in-schools-heres-how, accessed 2-22-2025, //ZM**

**The use of AI, Generative AI and advanced analytics enables schools to discover suspicious activities more quickly and respond swiftly to both known and unknown vulnerabilities, says Kwee. For example, FortiAI, a Gen AI-powered assistant built into Fortinet’s cybersecurity platforms, helps school personnel without deep cybersecurity expertise to rapidly understand and expedite the incident response and recovery process. As threats become increasingly sophisticated and difficult to identify, Kwee points to three key components of Fortinet SecOps Platform that allow schools to proactively tackle the evolving cyberthreat landscape: Integrated solution to secure multiple sources – such as network, endpoint, application and cloud; AI that helps detect advanced threats and powers the investigation process; and Automation for a speedy, comprehensive, and coordinated response that will ease the burden on in-house security teams. “The outcome is a closed-loop approach to automate the incident response process, from detection to containment and remediation. “This enables security teams in the education sector to respond quickly and efficiently to threats, reducing the time it takes to detect and mitigate attacks,” he summarises the impact on schools.Additionally, Fortinet’s solutions are overlayed with the Fortinet Security Fabric, which allows users to tap on threat intelligence from their global network of sensors and security operations centres and “stay up to date on the latest threats and active threats,” Kwee adds. Meeting unique needs of educational institutions Fortinet SecOps platform was designed to be vendor-agnostic and integrates with the cybersecurity infrastructure without disrupting the IT systems used by schools, says Kwee. “Our SecOps platform even extends and amplifies educational institutions’ investments in these technologies by enriching their cybersecurity telemetry,” he explains. In other words, schools can get more cybersecurity data points with the platform. This additional level of threat intelligence equips schools with the information to understand and respond to a wider range of cyber incidents. According to Kwee, a study conducted by market research firm, Enterprise Strategy Group, has shown that Fortinet SecOps platform managed to reduce the mean-time-to-detect and respond from weeks to hours. Fortinet also has a training institution that provides free cybersecurity training in the education sector to help build capacities in schools and tackle advanced cybersecurity incidents, says Kwee. This includes a free curriculum to support staff in learning about security-driven networking, adaptive cloud security, AI-driven security operations, and zero-trust network access, he adds. For example, Temple College from Texas, US, initially engaged with Fortinet for only its firewall security solutions. Later, the college expanded its partnership with Fortinet to address the educational institute’s entire cybersecurity needs across multiple campuses, and deepened the partnership with the Fortinet Training Institute to provide cybersecurity courses for students. “Fortinet understands the importance of enabling a collaborative and secure academic environment and has built strong partnerships across the global educational community,” says Kwee.**

### **The brink is now, as China is attacking schools.**

**Zavala 24**

**Miranda Zavala [Miranda Zavala is currently a student at California State University of San Bernardino earning her degree in Design with a concentration in marketing.] Afterschool.org, 3-28-2024, "Alert: China-backed Hackers Targeting U.S. Schools And Data," https://afterschool.org/china-backed-hackers-targeting-schools/, accessed 2-21-2025, //ZM**

**Receiving that alarming notification is something every teacher dreads, yet it’s becoming a reality as educational institutions find themselves under siege by cyberattacks orchestrated by hackers with backing from China. Yet, schools across the nation are finding themselves in the crosshairs of the China-backed hackers targeting U.S. schools. The attacks we’re seeing aren’t for short-term chaos; it’s a calculated move to extract confidential information and proprietary insights. This post offers insights into the China-backed hackers targeting U.S. schools and their impact on educational institutions from kindergarten through college, and why national security experts are sounding the alarm. Plunging into the depths of FBI Chief Christopher Wray’s recent alerts and Homeland Security’s defensive strategies, we endeavor to illuminate a roadmap for besieged educators. What’s their goal? They aim to steal valuable data and proprietary insights for financial advantage or spying activities. Far from stirring disorder, it’s aimed at draining the lifeblood of American ingenuity. This isn’t some shadowy conspiracy theory—it’s happening right now under our noses. FBI Chief Christopher Wray has been cautioning legislators about the danger these government-supported digital trespassers present. Their targets aren’t limited to educational institutions but span across critical infrastructure including water treatment plants. In the depths of digital spying, spear-phishing emerges as a favorite strategy among cyber intruders. Individuals within educational institutions are the target. Hackers craft emails that look legit—think an email from your IT department asking you to reset your password—but clicking on links or downloading attachments can unleash malware into the system. Leveraging the art of social manipulation, this method convinces individuals to deviate from established protective protocols. Imagine getting an email that appears to be from someone you trust—a colleague or even your boss—urging you urgently to open an attachment. That’s spear-phishing in action and why it’s incredibly effective at bypassing cybersecurity measures through human error. The second tool often found in a hacker’s toolkit is malware—which stands for malicious software. Once it finds its way onto a network through methods like spear-phishing emails. Different types of malware have different functions—from ransomware holding data hostage until money is paid out (like shaking down digital lunch money), viruses spreading and corrupting files across networks (digital vandalism), to spyware snooping around collecting confidential info without anyone noticing (the ultimate creepy stalker). Each type has been used against schools and universities with alarming success because once inside, they’re tough nuts to crack and can lead to widespread disruption. Hackers target schools with emails and malware, acting like digital stalkers to steal info. #CyberSafety #SpearPhishingAlert Recently, cyberattacks attributed to the Chinese government have exposed vulnerabilities within American educational institutions. Schools now confront a new challenge: breaches compromising the security of private information. In the digital age, even elementary schools are ripe targets for hackers. With recent cyber-attacks, we’ve seen that no institution is too small or insignificant to be overlooked. These incidents disrupt learning environments, potentially exposing student data and jeopardizing school operations. Moreover, during the COVID-19 pandemic, many districts found themselves unprepared for sophisticated threats. The exposed weak spots highlight a pressing demand for digital protection in our educational institutions. As educators rushed to adapt to remote teaching modalities, gaps in their defenses became glaringly apparent—a problem compounded by limited budgets dedicated to IT security in education settings. Universities possess valuable research data and intellectual property, making them attractive targets for espionage activities. Recent breaches at several universities underscore this threat vividly; proprietary research related to technology advancements and medical breakthroughs has been stolen right from under their noses. The stakes are high because what’s at risk isn’t just personal data—it’s potential economic gain through illicit means as well as global positioning in critical fields like biotechnology or artificial intelligence development among others who benefit directly from this stolen knowledge. To mitigate risks associated with these cyber assaults we must prioritize bolstering our collective defenses across all levels of educational infrastructure in America today more than ever before. It’s time to step up our defense strategies, strengthen our protective measures, and promote unity. Recent cyber attacks from China show U.S. schools of all levels are at risk, spotlighting the urgent need for better cybersecurity to protect sensitive data and national security. Rising concerns over national safety have been triggered by an uptick in cyber incursions aimed at educational institutions.**

**The US can’t afford to lose. Kennedy 24**

**[America Must Awaken from Complacency to Win the Tech Race Posted date/time:March 6, 2024 By Mark Kennedy Share Print]"America Must Awaken from Complacency to Win the Tech Race," https://www.wilsoncenter.org/article/america-must-awaken-complacency-win-tech-race, accessed 3-6-2025 //westlake noah 😈**

**Wahba Institute for Strategic Competition Wahba Institute for Strategic Competition Two silhouettes overlaid with the Chinese and American flag face off Image Credit In his inaugural address, John F. Kennedy proclaimed, “In the long history of the world, only a few generations have been granted the role of defending freedom in its hour of maximum danger.” We are such a generation. JFK’s words ring truer today than at the time of his inauguration in 1961 or any time since. The People’s Republic of China (PRC), under the control of the Chinese Communist Party (CCP), is more a peer competitor economically, militarily, and diplomatically than the Soviet Union JFK’s America faced. And the CCP is every bit as resolved as the Soviets to shift global norms away from the defense of freedom. Naïve arrogance keeps too many Americans from seeing that China has become a tech powerhouse. China has a credible path to gaining technological parity (and in some cases, superiority) in military applications. Yet too many believe all the US needs to do is to keep the CCP from stealing American technologies (essential – yes, sufficient – no). They have not accepted the fact that the US trails in key technologies and risks falling behind in others. They don’t fully appreciate how harmful America losing its innovative edge would be to its prosperity and security, now and in the future. America must awaken from complacency and dedicate itself to winning the race for tech leadership. China is Competing for Tech Leadership Ever since JFK’s call to win the space race accelerated investment in talent and discovery, America has enjoyed the advantage of being home to much of the most innovative technologies. This has propelled its prosperity by making its products in high demand and advanced its security by giving its military an advantage over any foe. Yet the CCP’s multi-decade focus on achieving leadership in key technologies has undercut America’s advantage. A recent study found China leading in 37 out of 44 crucial technologies based on the proportion each nation had of the most highly cited research reports. For those frustrated that open-source publication accelerates the dissemination of dual-use technologies, the good news is China is publishing even more than America. Neither the classified insights the US gains nor the People’s Liberation Army’s (PLA) network of military science academies are included in the comparison. The picture may change if they were. Yet dominant Chinese market shares in critical minerals, batteries, EVs, solar cells, telecommunications, and more lend credence to China’s technological advances. A report by the Australian Strategic Policy Institute (ASPI) suggests... ...no one should have been surprised when China tested a nuclear-capable hypersonic glide vehicle. China publishes four times the most cited papers as the US on hypersonic and advanced aircraft engines. It also leads in other sciences vital to hypersonic flight. Achieving speeds above Mach 5 requires advances in low-friction surfaces to reduce and dissipate heat produced by air friction. It also demands the development of novel materials able to handle high temperatures and high forces on control surfaces. China publishes three times as many highly cited papers as the second-place country (often, but not always the US) on novel metamaterials, eight times as many on coatings and three times as many on high-specification machining processes. These are areas where China manufacturing producing nearly twice as much output as the US, gives the PRC an advantage. The CCP’s penchant for secrecy is reflected in its research focus. Their research leadership in photonic sensors, quantum communications, advanced optical communications, and post-quantum cryptography could allow the CCP to make their communications impenetrable by the West and make the West’s classified communications vulnerable. The ASPI study shows the US leading in research publications in high-performance computing, integrated circuits design and fabrication, and natural language processing. But it trails China in machine learning, advanced analytics, and protective cybersecurity technologies. It shows the US leading in terms of research in small satellites and space launches, but trailing China in drones, autonomous systems, and advanced robotics. Finally, it shows the US leading in quantum computing research, but trailing China in post-quantum cryptography, quantum communications, and quantum sensors. China Contesting Military Leadership How does this translate into military applications? During the decades America spent fighting terrorism, the CCP rapidly built its military capabilities. The US military is sprinting to retool to deter great power conflict. At the time of JFK’s address, defense spending represented 9% of GDP. Today it is at a post-World War II low of 3.5%. Since the time of JFK’s inauguration, the Department of Defense’s (DoD) research funding has declined from 36% of global R&D to a mere 3% now. Today’s America’s military is more a consumer than a provider of technology. The CCP has fused its quest for technological and military leadership. It is no different in the US. The contest for technological military superiority is in great part determined by which side can more quickly adapt commercially developed technologies. The CCP has the advantage of building anew while the US is handicapped by needing to replace an installed base of aging technology and bloated base structure that is aggressively defended by elected representatives in Congress prioritizing keeping federal jobs in their districts. The CCP has aggressively steered its industry to focus on technologies that give its military a technological edge, while US industry remains focused on gaining the greater payback from consumer markets. Captains of American industry gave Xi Jinping a standing ovation during his US visit last year, even as the US military is increasingly reliant on industry for its innovative edge. Inflection Point We are at an inflection point. Depending on its response, America will continue to provide leadership that benefits both the nation and the world or surrender leadership to an ascendant China, at great risk to its future prosperity and national security.**

#### **The US can’t afford to lose**

**Matthew Kroenig, 11/12/2019, [Matthew Kroenig is an American political scientist and national security strategist currently serving as vice president of the Atlantic Council and professor in the Department of Government and the Edmund A. Walsh School of Foreign Service at Georgetown University.]Will disruptive technology cause nuclear war, https://thebulletin.org/2018/11/will-disruptive-technology-cause-nuclear-war/**[**)/**](https://thebulletin.org/2018/11/will-disruptive-technology-cause-nuclear-war/)/JLPark)**/ doobz + JZ//recutZM**

**Russia’s military modernization have been on full display in its ongoing intervention in Ukraine. Moreover, China may have the lead over the United States in emerging technologies that could be decisive for the future of military acquisitions and warfare, including 3D printing, hypersonic missiles, quantum computing, 5G wireless connectivity, and artificial intelligence (AI). And Russian President Vladimir Putin is building new unmanned vehicles while ominously declaring, “Whoever leads in AI will rule the world.” If China or Russia are able to incorporate new technologies into their militaries before the United States, then this could lead to the kind of rapid shift in the balance of power that often causes war. If Beijing believes emerging technologies provide it with a newfound, local military advantage over the United States, for example, it may be more willing than previously to initiate conflict over Taiwan. And if Putin thinks new tech has strengthened his hand, he may be more tempted to launch a Ukraine-style invasion of a NATO member. Either scenario could bring these nuclear powers into direct conflict with the United States, and once nuclear armed states are at war, there is an inherent risk of nuclear conflict through limited nuclear war strategies, nuclear brinkmanship, or simple accident or inadvertent escalation. This framing of the problem leads to a different set of policy implications. The concern is not simply technologies that threaten to undermine nuclear second-strike capabilities directly, but, rather, any technologies that can result in a meaningful shift in the broader balance of power. And the solution is not to preserve second-strike capabilities, but to preserve prevailing power balances more broadly. When it comes to new technology, this means that the United States should seek to maintain an innovation edge. Washington should also work with other states, including its nuclear-armed rivals, to develop a new set of arms control and nonproliferation agreements and export controls to deny these newer and potentially destabilizing technologies to potentially hostile states. These are no easy tasks, but the consequences of Washington losing the race for technological superiority to its autocratic challengers just might mean nuclear Armageddon.**

### **Successful strikes against schools are devastating – They’re critical infrastructure**

**DHS ND. Department of Homeland Security, ND, "," https://www.dhs.gov/xlibrary/assets/nppd/nppd-ip-education-facilities-snapshot-2011.pdf, accessed 2-22-2025, //ZM**

**Education Facilities is a Subsector of the Government Facilities Sector, one of 18 critical infrastructure sectors**

**established under the authority of Homeland Security Presidential Directive 7 (HSPD-7).**

### **Successful strikes cause nuclear tit for tat escalation**

**Orlov, 20 (Vladimir Orlov, Founder & Director, PIR Center, President of the Trialogue Club International, Co-Founder & Academic Supervisor, International Dual Degree MA Program in Nonproliferation & Global Security Studies from MGIMO University, 5-12-2020, accessed on 7-18-2022, Security Index #1, “'No Holds Barred' and the New Vulnerability: Are We in for a Re-Run of the Cuban Missile Crisis in Cyberspace?”,** [**https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=3538078**](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3538078)**, HBisevac)//recutZM**

**Not hundred per cent of the dialogue has been frozen, fortunately. Certain informal, mostly off the-record, meetings of US and Russian experts on cyber agenda continue taking place, both through Track 2 and Track 1.5. One of the most intellectually stimulating meetings, with frank exchanges, took place in Vienna in December 2018. The report produced after the meeting stressed “the significant risk […] that cyber-attacks could conceivably lead to a military escalation that may further trigger a nuclear weapons exchange, a fact that became more explicit with the adoption of the current Nuclear Posture Review. This issue gets complicated given that third parties may have the capabilities to invoke a cyber conflict between Russia and the United States. Whether a country or a non-state actor, they could put the two countries on the verge of an armed conflict by attacking critical infrastructure of either of them and making it look as if the aggressor were the other one”[22]. However, one should have no illusion: such informal meetings may be fully fruitful only when their reports and policy recommendations are utilized by the governments. And for that, a warmer climate in bilateral relations is a must. So far, we see exactly the opposite: mercury falling to freezing levels. Risk of cyber clashes growing into a chaotic global cyber war has been emphasized by the UN Secretary-General Antonio Guterres in his Agenda for Disarmament: “Malicious acts in cyberspace are contributing to diminishing trust among States… States should implement the recommendations elaborated under the auspices of the General Assembly, which aim at building international confidence and greater responsibility in the use of cyberspace.[23]” However, as the members of the US-Russian Track 1.5 working group on strategic stability recently concluded, “without a constructive dialogue on cyber issues between the United States and Russia, the world would most likely fail to agree on any norms of responsible behavior of states in cyber space”[24]. Do we really have to survive a cyber equivalent of the Cuban Missile Crisis to realize the importance of achieving some kind of agreement on cyber issues, and on the broader agenda of international information security?[25] Or is that kind of talk plain old alarmism? I don’t want to sound a fatalist, but I am even less keen on sounding like an ostrich that’s buried its head in the sand. We cannot ignore the obvious: whether the world’s most powerful actors like it or not, the world is sliding to another major crisis like the one in 1962. The cyber war is already raging. There are no rules of engagement in that war. The uncertainty is high. The spiral of tension is getting out of control. The cyber arms race is gaining momentum. And there are no guarantees that the next crisis will be controllable, or that it will result in a catharsis as far as international information security regulation is concerned. There’s no telling what will happen once the cyber genie is out of the bottle.**

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**Rebuttal Evidence:**

# **On C1**

# **1. [No Link] Cowen 23 explains AI is constantly improving at a very rapid rate, evolving in its accuracy and quality through new development.**

# **2. [T] Chamorro-Premuzic 23 finds an objective technology like AI is much better than relying on biased individuals. He explains that AI can be used to quantify diversity and actually measure the biases in behavior beyond just opinions, which is very important given that biases and preconceptions are innate parts of human perception that can never be fully eradicated. Rather, relying on technology that can be improved and being able to verify its results is a better alternative to reliance on individual biases.**

# **a. This method solves the issue as Miller’18 confirms: Humans were so remarkably bad that replacing them with algorithms both increased accuracy and reduced institutional biases, beat[ing] the alternative on every outcome.**

# **3. [NL] AI may be helpful in some cases and biased in other datasets. We can choose what to use. Indeed, Miller continues: If we find that algorithms have an unacceptably high degree of bias then there is no harm done by following the evidence**

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# **Cowen 23**

# **Tyler Cowen. "AI Is Improving Faster Than Most Humans Realize". 1-24-2023.** [**https://www.washingtonpost.com/business/ai-is-improving-faster-than-most-humans-realize/2023/01/23/43972ea2-9b24-11ed-93e0-38551e88239c\_story.html**](https://www.washingtonpost.com/business/ai-is-improving-faster-than-most-humans-realize/2023/01/23/43972ea2-9b24-11ed-93e0-38551e88239c_story.html) **//PC**

# **Artificial intelligence advances in a manner that’s hard for the human mind to grasp. For a long time nothing happens, and then all of a sudden something does. The current revolution of Large Language Models (LLMs) such as ChatGPT resulted from the advent of “transformer neural networks” in about 2017. What will the next half-decade bring? Can we rely on our current impressions of these tools to judge their quality, or will they surprise us with their development? As someone who has spent many hours playing around with these models, I think many people are in for a shock. LLMs will have significant implications for our business decisions, our portfolios, our regulatory structures and the simple question of how much we as individuals should invest in learning how to use them. […] I have a story for you, about chess and a neural net project called AlphaZero at DeepMind. AlphaZero was set up in late 2017. Almost immediately, it began training by playing hundreds of millions of games of chess against itself. After about four hours, it was the best chess-playing entity that ever had been created. The lesson of this story: Under the right conditions, AI can improve very, very quickly.**

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# **Chamorro-Premuzic 23**

# **Tomas Chamorro-Premuzic. "How Artificial Intelligence Can Boost Diversity & Inclusion". 2-7-2023.** [**https://www.forbes.com/sites/tomaspremuzic/2023/02/07/how-artificial-intelligence-can-boost-diversity--inclusion/?sh=4bf965227b82**](https://www.forbes.com/sites/tomaspremuzic/2023/02/07/how-artificial-intelligence-can-boost-diversity--inclusion/?sh=4bf965227b82) **//PC**

# **The second is being able to actually measure inclusion, in particular whether someone’s demographic status or identity can predict their actual status at work. Diversity is easy to quantify, at least once organizations pick their target categories and goals (e.g., get more women, minorities, older workers, neurodiverse individuals, etc). But inclusion, which is about how people are really treated, is much harder to assess, let alone track. Think of AI as a data mining tool that is the equivalent of an X ray for human interactions, and can tell us what goes on when people interact with each other, and how people are treated when they are part of vulnerable or underrepresented groups, especially compared to those who benefit from privilege. This is important because it allows us to go beyond perceptions and decode whether there are biases in behavior, which is really what we should be tackling.**

# **[…]**

# **However, if we are genuinely interested in creating more open and diverse societies, it is clearly useful to keep our biases in check. This starts by accepting that when we are free to follow our instincts or intuition, we are rarely as open minded as we like to think. Left to their own devices, managers would mostly hire people like them and promote them based on how similar their opinions are, which is the right recipe for creating a cult rather than a healthy culture. Likewise, without the tools and data to reveal how different people are treated at work, particularly when they are different, leaders will continue to perpetuate their self-serving delusion of having created an inclusive culture, an experienced shared only by those who continue to enjoy the nepotistic privileges of belonging to the in-group.**

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# **Harvard Business Review, 7-26-2018, "Want Less-Biased Decisions? Use Algorithms.,"** [**https://hbr.org/2018/07/want-less-biased-decisions-use-algorithms**](https://hbr.org/2018/07/want-less-biased-decisions-use-algorithms) **//SC**

# **But humans can’t be all that bad, right? Yes, we may be biased, but surely there’s some measure of performance on which we are good decision makers. Unfortunately, decades of psychological research in judgment and decision making has demonstrated time and time again that humans are remarkably bad judges of quality in a wide range of contexts. Thanks to the pioneering work of Paul Meehl (and follow-up work by Robyn Dawes), we have known since at least the 1950s that very simple mathematical models outperform supposed experts at predicting important outcomes in clinical settings.In all the examples mentioned above, the humans who used to make decisions were so remarkably bad that replacing them with algorithms both increased accuracy and reduced institutional biases. This is what economists call a Pareto improvement, where one policy beat[ing]s out the alternative on every outcome we care about. While many critics like to imply that modern organizations pursue the operational efficiency and greater productivity at the expense of equity and fairness, all available evidence in these contexts suggests that there is no such trade-off: Algorithms deliver more-efficient and more-equitable outcomes. If anything should alarm you, it should be the fact that so many important decisions are being made by human beings who we know are inconsistent, biased, and phenomenally bad decision makers.**

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# **Harvard Business Review, 7-26-2018, "Want Less-Biased Decisions? Use Algorithms.,"** [**https://hbr.org/2018/07/want-less-biased-decisions-use-algorithms**](https://hbr.org/2018/07/want-less-biased-decisions-use-algorithms) **//SC**

# **Of course, we should be doing all we can to eradicate institutional bias and its pernicious influence on decision-making algorithms. Critiques of algorithmic decision making have spawned a rich new wave of research in machine learning that takes more seriously the social and political consequences of algorithms. There are novel techniques emerging in statistics and machine learning that are designed specifically to address the concerns around algorithmic discrimination. There is even an academic conference every year at which researchers not only discuss the ethical and social challenges of machine learning but also present new models and methods for ensuring algorithms have a positive impact on society. This work will likely become even more important as less-transparent algorithms like deep learning become more common. But even if technology can’t fully solve the social ills of institutional bias and prejudicial discrimination, the evidence reviewed here suggests that, in practice, it can play a small but measurable part in improving the status quo. This is not an argument for algorithmic absolutism or blind faith in the power of statistics. If we find in some instances that algorithms have an unacceptably high degree of bias in comparison with current decision-making processes, then there is no harm done by following the evidence and maintaining the existing paradigm. But a commitment to following the evidence cuts both ways, and we should to be willing to accept that — in some instances — algorithms will be part of the solution for reducing institutional biases. So the next time you read a headline about the perils of algorithmic bias, remember to look in the mirror and recall that the perils of human bias are likely even worse.**

### **AT: Bias---Topshelf**

#### **1. New “scanning” strategies solve.**

**Billy Perrigo 24, 5/21/2024, Correspondent at TIME based in the London bureau, No One Truly Knows How AI Systems Work. A New Discovery Could Change That, DOA: 3/05/2025,**

**https://time.com/6980210/anthropic-interpretability-ai-safety-research/)// JZ**

**On Tuesday, the AI lab Anthropic announced it had made a breakthrough toward solving this problem. Researchers developed a technique for essentially scanning the “brain” of an AI model, allowing them to identify collections of neurons—called “features”—corresponding to different concepts. And for the first time, they successfully used this technique on a frontier large language model, Anthropic’s Claude Sonnet, the lab’s second-most powerful system, .**

**In one example, Anthropic researchers discovered a feature inside Claude representing the concept of “unsafe code.” By stimulating those neurons, they could get Claude to generate code containing a bug that could be exploited to create a security vulnerability. But by suppressing the neurons, the researchers found, Claude would generate harmless code.**

**The findings could have big implications for the safety of both present and future AI systems. The researchers found millions of features inside Claude, including some representing bias, fraudulent activity, toxic speech, and manipulative behavior. And they discovered that by suppressing each of these collections of neurons, they could alter the model’s behavior.**

**As well as helping to address current risks, the technique could also help with more speculative ones. For years, the primary method available to researchers trying to understand the capabilities and risks of new AI systems has simply been to chat with them. This approach, sometimes known as “red-teaming,” can help catch a model being toxic or dangerous, allowing researchers to build in safeguards before the model is released to the public.**

#### **That outweighs---the alternative is worse AND biases can and are being rectified now.**

**Michael Zeltkevic 23, 6/30/2023, Managing Partner and Global Head of Capabilities of the World Economic Forum, Why AI bias may be easier to fix than humanity’s, DOA: 2/07/2025,**

**https://www.weforum.org/stories/2023/06/why-ai-bias-may-be-easier-to-fix-than-humanity-s/)// JZ**

**The fact that artificial intelligence (AI) can produce biased outcomes should not surprise us. Its algorithms are based on design choices made by humans that are rarely value-neutral.**

**We also ask the algorithms to produce outcomes that replicate past decision-making patterns where our preconceptions may come to play as well. But what if we don’t want the future to look the same as the past, especially if fairness is in question?**

**The mere probability that using AI can lead to unfair outcomes shouldn’t require us to swear off it — or put it on hold, as several prominent technologists have suggested. Just the opposite.**

**Recognizing that AI is inclined to perpetuate inequities may give us a leg up in the fight for fairness. At the end of the day, it would no doubt be easier to mitigate AI’s biases than it has been to remedy those perpetuated by people.**

**That’s because a lack of fairness in AI can be systematized and quantified in a way that makes it more transparent than human decision-making, which is often plagued by unconscious prejudices and myths.**

**AI doesn’t create bias. Rather, it serves as a mirror to surface examples of it — and it’s easier to stop something that can be seen and measured.**

**AI fairness must be a priority**

**But first, we must look in that mirror. Governments and companies need to make AI fairness a priority, given that algorithms are influencing decisions on everything from employment and lending to healthcare.**

**Currently, the United States and European Union are driving efforts to limit the rising instances of artificial intelligence bias through Equal Employment Opportunity Commission oversight in the US and the AI Act and AI Liability Directive in the EU.**

**The focus initially should be on certain sectors where AI bias can potentially deny access to vital services. The best examples include credit, healthcare, employment, education, home ownership, law enforcement and border control. Here, stereotypes and prejudices regularly propagate an inequitable status quo that can lead to shorter life expectancy, unemployment, homelessness and poverty.**

**Control of artificial intelligence bias must begin with testing algorithm outcomes before they are implemented. Mistakes on AI bias are most often made when those evaluating algorithms focus on data going into decision-making rather than whether the outcomes are fair.**

**In most cases, because of the complexity of AI models and the lives of the people they touch, we can’t always anticipate the potential disparate impacts from AI’s recommendations which is where the bias manifests.**

**To do this reliably, central databases of such sensitive data as age, gender, race, disability, marital status, household composition, health and income would need to be created by the private sector or government against which AI-driven models can be tested and corrected for bias.**

**Such “AI fairness” datasets would allow employers to check for bias in job eligibility requirements before deploying them and universities could proactively analyse AI recommendations for the influence of an applicant’s economic status, gender, race or disability on acceptance.**

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## **at: critical thinking**

**[Turn] AI actually helps critical thinking**

**Thiga, Moses. *Generative AI and the Development of Critical Thinking Skills*. Mar. 2024.** [**https://www.irejournals.com/formatedpaper/1705580.pdf**](https://www.irejournals.com/formatedpaper/1705580.pdf) **{TOAO Shah}**

V. GENERATIVE AI AND CRITICAL THINKING Generative AI as a Danger to Critical Thinking

According to Bhosale (2023), over-reliance on GenAI can lead to a reduction in critical thinking by researchers. Farrokhnia et al (2023) established that the use of GenAI tools by teachers and students can lead to a decline in high-order cognitive skills such as critical and analytical thinking. On the part of students the use of GenAI tools makes it easy to obtain solutions and reduces the motivation to conduct independent research, exploration and analysis in order to arrive at their own findings and conclusions.On the part of teachers, the ease with which GenAI tools can generate lesson plans and assessments can lead to a reliance on the tools leading to a reduction in their mastery of the subject matter. In workplace settings GenAI capabilities are now increasingly being integrated into productivity tools. They are able to assist users with tasks such as writing email, drafting reports, and in developing concepts and proposals. While these are well intended they have the overall impact of reducing users ability to think through and critique their writing. With time, over reliance can lead to the loss of creativity and critical thinking skills (Benard, 2023). In this regard, Korolov (2023), recommends that employers constantly help their employees to develop critical thinking skills in order to use these tools effectively. GenAI tools are also increasingly in use for code development though auto-complete features, natural language input and direct interaction through a chat interface. From the perspective of the tool developers the generated code should be inspected before being put into production but this is not always the case. In this regard, these GenAI tools that generate code can also lead to diminishing coding and critical thinking skills among programmers (SonarSource SA, 2024) **Generative AI as an Enabler of Critical Thinking GenAI has been found to play a role in influencing the development of critical thinking skills. In a study by conducted among undergraduate students in Ghana by Essel et al (2024) the use of ChatGPT was found to influence the development of the students' critical, reflective, and creative thinking skills and their dimensions discernibly.** The use of GenAI in teaching programming was explored by Yilmaz and Yilmaz (2023) with a group of students. **Students who used the GenAI tool, ChatGPT, were found to perform better on the computational thinking scale, computer programming self-efficacy scale, and learning motivation in computer programming courses scale. According to Risvold et al (2024) GenAI can play the role of a non-judgmental collaborator who can patiently and objectively entertain all manner of questions.** This can help learners explore their ideas through questioning and reflecting on the variety of responses provided by a GenAI tool. A similar argument is advanced by Gigster (2023) who describe the potential value of GenAI in a medical setting where **healthcare students and professionals can exercise critical thinking in a virtual environment thereby limiting exposure of actual patients to ‘Experiments’.** An approach to integrate AI into a teaching and learning experience for learning critical thinking skills was proposed by Aithal and Silver (2023). Their approach comprises of three steps, understand and analyze ideas and arguments, evaluate ideas and arguments and then apply the knowledge gained to solve problems and make decisions. The first two are conducted collaboratively with an AI chatbot through a Q & A session. Developing Critical Thinking Skills with Generative AI Critical thinking is also a key skill for the development and use of GenAI. Carruci (2024) notes that fact checking, source and other critical thinking skills are crucial for the proper training of AI models as well as in using the applications derived from them. According to the MIT Horizion (2023), continuous learning to grow one’s body of knowledge on a subject, cross checking the accuracy of the information in the outputs, and reflecting on the output to establish if it is what was desired and if there are any missing or inadequate aspects are important skills for GenAI users (MIT Horizon, 2023).

AI can create simulations that enhance critical thinking by creating a safe to fail environment.

**Staff**. “The Impact of Artificial Intelligence (AI) on Critical Thinking Development in Healthcare.” Health Stream. April 20**21**. https://www.healthstream.com/resource/blog/the-impact-of-artificial-intelligence-(ai)-on-critical-thinking-development-in-healthcare //AG

“Kerwan emphasizes application as a fundamental part of critical thinking, “Seeing how someone applies what they’ve learned based on their experiences and then formulates those things into a real plan that can be implemented is the crucial second part of critical thinking. AI and simulation enable application at a much higher level while eliminating the biggest risk of developing critical thinking skills in the healthcare environment—the fact that it’s a matter of life and death.” **AI and simulation remove the effects of bad decisions, of life or death as the outcome. They allow the freedom for the student to make the wrong decision and for the evaluator to allow that wrong decision to occur, which lets students learn from failing. Kerwan adds, “Students are allowed to make a mistake and see the result of that mistake. When they get to the clinical floor, they will have seen what happens when they make a specific decision and they will know whether or not to follow that same path. AI and simulation afford us the ability to let students take these risks and learn from them.”**

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