Date of Hearing: July 2, 2024

ASSEMBLY COMMITTEE ON PRIVACY AND CONSUMER PROTECTION
Rebecca Bauer-Kahan, Chair
SB 1288 (Becker) – As Amended June 26, 2024

**SENATE VOTE**: 38-0

**SUBJECT**: Public schools: artificial intelligence working group

## SYNOPSIS

*This bill directs the Superintendent of Public Instruction to convene a working group in order to study the risks and benefits of artificial intelligence (AI) in education. The working group would be composed of teachers, public school staff, administrators, university and community college faculty, private sector representatives, and pupils enrolled in public school. In assessing the current and future state of AI use in education, the working group would focus especially on the risks and benefits of AI for students and teachers.*

*This bill is sponsored by Superintendent Tony Thurmond and by GenUp, and is supported by several organizations representing educators as well as by TechNet. The bill has no opposition. The bill is very similar to AB 2652 (Muratsuchi), which passed this Committee on consent.*

*This bill passed the Assembly Education Committee on a 7-0 vote. Amendments described below ensure that the working group includes individuals with expertise in AI and its uses in education.*

**SUMMARY**: Requires the Superintendent of Public Instruction (SPI) to convene a working group for the purpose of exploring how artificial intelligence (AI) and other forms of similarly advanced technology are currently being used in education. Specifically, **this bill**:

1) Requires the SPI to convene a working group consisting of public school teachers, staff, administrators, university and community college faculty, representatives of private sector business or industry, and pupils. Requires that at least one-half of the workgroup be composed of teachers with knowledge of the use of AI in education.

2) Requires the working group to do, among other things, the following:

    a) Assess the current and future state of AI use in education, including various specified topics.

    b) On or before January 1, 2026, develop guidance on the safe use of AI in education that addresses specified subjects. This guidance must be posted on the working group's website.

    c) On or before July 1, 2026, develop a model policy, to be posted on the working group's website, regarding the safe and effective use of AI in ways that benefit, and do not negatively impact, pupils and educators.

    d) On or before January 1, 2027, submit a report to the appropriate policy and fiscal committees of the Legislature with the assessment in (a) and any findings or recommendations related to the assessment.

3) Sunsets January 1, 2031.

**EXISTING LAW**:

1) Requires the Instructional Quality Commission to consider developing and recommending to the SBE, on or before July 31, 2019, computer science content standards for kindergarten through 12th grade pursuant to recommendations developed by a group of computer science experts. (Ed. Code § 60605.4.)

2) States that if a school district requires more than two courses in mathematics for graduation from high school, the district may award a student up to one mathematics course credit for successfully completing a "category C" approved computer science course. (Ed. Code § 51225.35.)

3) Requires the California State University, and requests the University of California, to develop guidelines for high school computer science courses that may be approved for the purposes of recognition for admission. (Ed. Code § 66205.5.)

4) Through regulation, authorizes holders of credentials in mathematics, business, and Industrial and Technology Education, as well as holders of supplementary authorizations in computer science, to teach computer science. (Cal. Code Regs, Tit. 5, § 80005.)

**FISCAL EFFECT**: As currently in print, this bill is keyed fiscal.

**COMMENTS**:

1) **Background.** The development of AI is creating exciting opportunities to improve California's education system – but with novel technologies come novel safety concerns. As AI becomes ubiquitous in schools, can students be confident that their personal information is not being captured and sold without their consent? Are the automated decision tools influencing the careers of educators being trained on unbiased datasets? When school districts partner with industry to develop AI tools for their classrooms, who ultimately owns these models and their outputs? The widespread adoption of AI has the potential to transform education for the better – but without careful implementation, these changes could also erode the privacy of students and educators while widening existing equity gaps.

*Crash course on AI.* AI uses algorithms – sets of rules – to transform inputs into outputs. Inputs and outputs can be anything a computer can process: numbers, text, audio, video, or movement. This is because AI is not fundamentally different from other computer functions. Its novelty lies in its application: unlike normal computer functions, AI is able to accomplish tasks that are normally performed by humans.

AI that are trained on small, specific datasets in order to make recommendations and predictions are sometimes referred to as "predictive AI." This differentiates them from "generative AI," (GenAI) which are trained on massive datasets in order to produce detailed text and images. When Netflix suggests a TV show to a viewer, the recommendation is produced by predictive AI

that has been trained on the viewing habits of Netflix users.[1] When ChatGPT generates text in clear, concise paragraphs, it uses GenAI that has been trained on the written contents of the internet.[2]

AI is already integral to many aspects of modern society, and the advent of GenAI will undoubtedly lead to an even greater number of applications. However, AI is not an inherently benevolent or harmful technology – it is simply a tool.

*Bias and bullying.* There is a common saying in computer science: "garbage in, garbage out." The performance of an AI tool is directly impacted by the quality, quantity, and relevance of the data used to train it.[3] If the data used to train an AI is biased, the AI's outputs will be similarly biased.

The capacity of AI to amplify existing biases can have major consequences, including on the careers of educators. People of various races, genders, and cultures are not distributed equally throughout the workforce. An AI trained on historical data to make hiring decisions will be predisposed to maintain the ratios it is trained on; as described by Aditya Malik, the Founder and CEO of Valuematrix.ai:

> Generative AI, for all its grandeur, has the potential to perpetuate latent biases inherited from human creators. A disconcerting echo of historical prejudices may inadvertently seep into the algorithms. Imagine a scenario where previous senior managers, driven by biases of gender, age, faith or race, rejected candidates for misguided reasons. The AI, if not vigilantly curated, might misconstrue these patterns as indicators of incompetence, thus exacerbating the exclusion of qualified candidates from underrepresented backgrounds.[4]

The interactions between humans and AI can themselves be subject to bias. If a voice-recognition system is trained using audio data that excludes certain accents, it can fail to understand accented speech once deployed:

> "Clow-dia," I say once. Twice. A third time. Defeated, I say the Americanized version of my name: "Claw-dee-ah." Finally, Siri recognizes it. Having to adapt our way of speaking to interact with speech recognition technologies is a familiar experience for people whose first language is not English or who do not have conventionally American-sounding names. I have even stopped using Siri because of it.[5]

*Plagiarism.* The originality of GenAI work products is frequently called into question. Tools such as ChatGPT are enabling rampant cheating and plagiarism in schools, as student use these

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[1] Netflix, "How Netflix's Recommendations System Works," help.netflix.com/en/node/100639, accessed on Feb. 22, 2024.
[2] OpenAI, "How ChatGPT and Our Language Models Are Developed," help.openai.com/en/articles/7842364-how-chatgpt-and-our-language-models-are-developed, accessed on Feb. 22, 2024.
[3] Rohit Sehgal, "AI Needs Data More Than Data Needs AI," *Forbes*, Oct. 5, 2023, https://www.forbes.com/sites/forbestechcouncil/2023/10/05/ai-needs-data-more-than-data-needs-ai/.
[4] Aditya Malik, "AI Bias In Recruitment: Ethical Implications And Transparency," *Forbes*, Sep. 25, 2023, https://www.forbes.com/sites/forbestechcouncil/2023/09/25/ai-bias-in-recruitment-ethical-implications-and-transparency/.
[5] Claudia Lopez Lloreda, "Speech Recognition Tech Is Yet Another Example of Bias," Jul. 5, 2020, www.scientificamerican.com/article/speech-recognition-tech-is-yet-another-example-of-bias/.

technologies to automatically complete writing, math, and coding assignments.[6] The AI-detection tools employed by teachers in response have been found to be ineffective and inaccurate – characterizing the entirety of the US Constitution as AI generated, for example.[7]

*Daydreaming.* When an AI tool produces a result that is not grounded in reality, it is said to be "hallucinating." Text-generators such as ChatGPT do not fundamentally understand the text they are producing. They calculate one word or symbol at a time – if they estimate that the next word/symbol they output should be a period, then the sentence ends. Otherwise, the sentence continues.

> These systems live in a world of language," said Melanie Mitchell, an A.I. researcher at the Santa Fe Institute. "That world gives them some clues about what is true and what is not true, but the language they learn from is not grounded in reality. They do not necessarily know if what they are generating is true or false."[8]

*The permanent record.* Just as humans cannot intentionally forget information they have learned, it is not currently possible to remove data from a trained AI tool.[9] Unlike an Excel spreadsheet, which stores data in neat columns, AI tools store data in the connections between neurons in a deep neural network. Every connection is influenced by every piece of training data, and a large model like ChatGPT-4 is reported to have more than 1.7 trillion connections.[10] It is not possible to specifically alter these connections in order to remove data without fundamentally changing the model; as a result, for data to be removed, the model must be retrained from scratch.

*Teacher substitute?* The overall effect that the widespread adoption of AI – especially GenAI – will have on labor is unknown. In 2020, the World Economic Forum published a report suggesting that 97 million new jobs may be created, while 85 million jobs may be displaced.[11] However, the report goes on to state that though job creation currently outpaces job destruction, the rate of creation is slowing while the rate of destruction continues to accelerate.

AI may bring both benefits and risks to the education workforce. AI may help improve teachers' practice by completing repetitive tasks like grading, lesson planning, scheduling, and routine paperwork, freeing up their time for direct instruction. Analysis by McKinsey and Company suggests that AI could help teachers reallocate 20% to 40% of their time to activities that support student learning. But research also indicates that teachers are concerned about the impact of AI on their profession.[12] Some fear that, in the drive to personalize instruction and optimize for

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[6] Kalley Huang, "Alarmed by A.I. Chatbots, Universities Start Revamping How They Teach," *New York Times*, Jan. 16, 2023, www.nytimes.com/2023/01/16/technology/chatgpt-artificial-intelligence-universities.html.
[7] Benj Edwards, "Why AI detectors think the US Constitution was written by AI", *arstechnica*, Jul. 14, 2023, arstechnica.com/information-technology/2023/07/why-ai-detectors-think-the-us-constitution-was-written-by-ai/.
[8] Cade Metz, "What Makes A.I. Chatbots Go Wrong?," *New York Times*, Mar. 29, 2023, www.nytimes.com/2023/03/29/technology/ai-chatbots-hallucinations.html.
[9] Stephen Pastis, "A.I.'s un-learning problem: Researchers say it's virtually impossible to make an A.I. model 'forget' the things it learns from private user data," *Yahoo! Finance*, Aug. 30, 2023, finance.yahoo.com/news/un-learning-problem-researchers-virtually-164342971.html.
[10] Reed Albergotti, "Microsoft pushes the boundaries of small AI models with big breakthrough," *SEMAFOR*, Nov. 1, 2023, www.semafor.com/article/11/01/2023/microsoft-pushes-the-boundaries-of-small-ai-models.
[11] World Economic Forum. "The Future of Jobs Report 2020," Oct. 2020.
[12] Nikolas McGehee, "Balancing the Risks and Rewards of AI Integration for Michigan Teachers," *Michigan Virtual*, Dec. 5, 2023, https://michiganvirtual.org/research/publications/balancing-the-risks-and-rewards-of-ai-integration-for-michigan-teachers/.

efficiency, teachers, and their pedagogical skill and human connection with students, will be devalued and they will ultimately be replaced. As the implications of AI on the teaching profession become clear, teachers will require opportunities to learn how to use AI and how to use it to support, rather than supplant, the unique skills that teachers possess.

1) **Author's statement.** According to the author:

> The use of generative artificial intelligence (GenAI) increased rapidly over the last year with the release of ChatGPT and other GenAI companies. While algorithms have been used in personalized student learning, voice assistants, and grammar correction programs, GenAI is quickly becoming a larger presence in the education space. The Pew Research Center recently reported that roughly one in five teenagers who are aware of ChatGPT, a popular GenAI, indicate they have utilized it in completing their schoolwork. Additionally, AI is increasingly being embraced as an educational topic of study. AI courses are included in computer science education, with the proportion of new computer science PhD Graduates who specialized in AI almost doubling since 2010.
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> Due to the increasing use of GenAI programs, schools have been forced to engage with the emerging technology, encountering issues such as a lack of centralized teacher training on GenAI, unauthorized use by students to complete assignments, and concerns on algorithmic biases.
>
> Given the profound impact the use of AI on students and teachers can have, California must develop guardrails and guidelines for AI's use in education. SB 1288 establishes the space for needed experts to develop guardrails and guidelines for the use of AI in education.

2) **What this bill would do.** This bill would create a working group to study the potential risks and benefits of AI in the education space. The working group would focus on both students and teachers. For students, the working group would emphasize education outcomes, student privacy, and equity. For teachers, the working group would additionally emphasize the effect of AI on the education workforce. The working group would be tasked with developing guidance for local educational agencies and charter schools, as well as developing a model policy for these entities regarding the safe of effective use of AI.

3) **U.S. Department of Education.** Recognizing the powerful influence AI will likely have in education, numerous organizations have called for the development of policies and guidance around the use of AI in education. The U.S. Department of Education notes that:

> Policies are urgently needed to implement the following:
>
> 1) Leverage automation to advance learning outcomes while protecting human decision making and judgment;
>
> 2) Interrogate the underlying data quality in AI models to ensure fair and unbiased pattern recognition and decision making in educational applications, based on accurate information appropriate to the pedagogical situation;
>
> 3) Enable examination of how particular AI technologies, as part of larger edtech or educational systems, may increase or undermine equity for students; and

4) Take steps to safeguard and advance equity, including providing for human checks and balances and limiting any AI systems and tools that undermine equity.[13]

5) **TeachAI.** In 2023, TeachAI, in collaboration with Code.org, CoSN, Digital Promise, the European EdTech Alliance, James Larimore, and Policy Analysis for California Education (PACE), launched an AI Guidance for Schools Toolkit to help school systems meet the urgent need for guidance on the safe, effective, and responsible use of artificial intelligence.

The AI Toolkit highlights seven key principles for educators to consider in developing guidance on AI and education for their staff and students:

1) Purpose: Use AI to help all students achieve educational goals.

2) Compliance: Reaffirm adherence to existing policies.

3) Knowledge: Promote AI literacy.

4) Balance: Realize the benefits of AI and address the risks.

5) Integrity: Advance academic integrity.

6) Agency: Maintain human decision-making when using AI.

7) Evaluation: Regularly assess the impacts of AI.[14]

6) **Analysis.** Just as the invention of the internet and personal computers fundamentally changed education more than 30 years ago, the widespread adoption of AI in California's schools promises to affect how students learn and teachers work. These technologies could be transformative: in the long term, AI mentorship and custom lesson plans could lead to every student in California having the equivalent of a personalized tutor at their fingertips. In the short term, beneficial AI technologies are unlikely to be distributed equitably throughout the state. The working group that this bill creates should focus on ensuring that the benefits wrought by AI are not limited to a privileged few.

As the working group proceeds, it should prioritize educational outcomes and student safety. This includes evaluating how AI tools impact learning processes and outcomes, and ensuring these technologies do not compromise student welfare. Furthermore, the group should consider what training will be necessary for both students and faculty to safely and effectively engage with AI technologies. This training should address the capabilities of AI systems, the ethical considerations in their use, and strategies for mitigating risks associated with these technologies.

Even now, the unregulated use of AI is raising significant concerns regarding privacy, security, and ethics. Children and teenagers are known to be susceptible to misinformation and disinformation, phenomena that AI can exacerbate. Notably, there have already been troubling instances where AI has been misused by students, such as the creation of non-consensual

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[13] Office of Education Technology, "Artificial Intelligence and the Future of Teaching and Learning," May 2023.
[14] Hadi Partovi and Pat Yongpradit, "AI and education: Kids need AI guidance in school. But who guides the schools?" *World Economic Forum,* Jan. 18, 2024, https://www.weforum.org/agenda/2024/01/ai-guidance-school-responsible-use-in-education/

deepfake pornography. These incidents underscore the urgent need for robust guidelines and educational programs that empower students to recognize and resist such abuses of technology.

The working group should explore potential solutions to these problems, offering recommendations for educational institutions to better prepare students to confront and counter the negative implications of AI. Through comprehensive study and proactive strategy development, the group can help ensure that AI serves as a beneficial tool in education rather than a disruptive risk. Above all else, the workgroup that this bill creates should be neutral in its approach. AI has the potential to level the playing field with respect to educational resources. Conversely, it could serve to amplify historical inequities. When it comes to student education, new technologies and approaches should not be immediately discounted.

7) **Amendments.** The author has agreed to amend the bill to ensure that the working group includes members with expertise in AI and its uses in education. The amendments are as follows:

[ . . .]

(c) The working group shall include all of the following:

(1) Current, credentialed public school teachers serving in elementary and secondary teaching positions.

(2) Classified public school staff.

(3) Schoolsite administrators.

(4) School district or county office of education administrators.

(5) University and community college faculty***, including academics with expertise in artificial intelligence and its uses in education.***

(6) Representatives of private sector business or industry ***with expertise in artificial intelligence and its uses in education.***

(7) Pupils enrolled in public school.

(***8***) At least one-half of the workgroup shall be composed of current classroom teachers with knowledge of the use of artificial intelligence in education.

8) **Related legislation.**

AB 2652 (Muratsuchi) was similar to this bill. The bill was held on suspense in the Assembly Appropriations Committee.

**REGISTERED SUPPORT / OPPOSITION**:

**Support**

State Superintendent of Public Instruction Tony Thurmond (sponsor)

California School Employees Association
CFT- a Union of Educators & Classified Professionals, Aft, Afl-cio
Los Angeles County Office of Education
Los Angeles Unified School District
PERK Advocacy

**Opposition**

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