Testimony: The Role of Artificial Intelligence, Emerging Technology, and Computer Instruction in New York City Public Schools.

NYC COUNCIL COMMITTEES ON EDUCATION & TECHNOLOGY

The past few years have brought many pivotal moments for NYC Public Schools, beginning with the switch to remote learning, to the ongoing need to ensure public school students are getting the best access to digital skills training. And now schools face the crucial task of preparing students to thrive in a world where artificial intelligence is widespread. It is widely understood that AI will change the way people work and the jobs people have, but it will also change the way people interact with the world on a daily basis. This is why NYC Public Schools must continue to increase their computer science education efforts while working with local industries and nonprofit education providers to prepare our youth to not only work in tech and the jobs of the future, but have the skills to understand how and why AI and other emerging technologies work.

Artificial Intelligence in Education

Tech:NYC recommends that the NYC public school system addresses AI in two distinct, though overlapping, ways: 1) in terms of preparing students for careers in AI; and 2) in terms of building general knowledge on the advantages and risks associated with AI technology, and how to discern between the two.

Tech:NYC recommends that educators are informed on the uses and differences between the various AI methods, including Machine Learning, Large Language Models, Automated Decision Making, and Generative AI and that they are given related professional development opportunities. Teachers should be able to use real life examples of AI, or even use AI within their teaching or class preparation. Additionally, as NYC is a hub for so many tech companies developing AI, we encourage Public Schools to tap into this network of professionals to help shape curriculum and provide in-school demonstrations of AI. Introducing students to this

technology early and constructively should help identify the students who have interest and aptitude to continue studying it, preparing themselves for technical careers. And it will have the additional benefit of preparing their peers to live in a world where they must understand mis- and disinformation and how to use AI tools productively and effectively, all while giving them a framework to understand the risks and rewards that come with new technologies.

At its core, it is most important that NYC Public Schools continue to teach the basics of computational thinking to its students. AI is changing how programmers and software developers work, and it is expected in future years that AI will allow for most programming to be done in human languages that AI translates into code. But youth will still need basic computational thinking skills to understand programming methods, and to prepare themselves for popular new jobs like prompt engineers, which help train AI models and do not require coding expertise.

We are encouraged by how NYC Public Schools is embracing AI tools in classrooms, including giving students and educators the opportunity to learn with ChatGPT, which has led to Public Schools working with Microsoft to develop an Azure OpenAI based chatbot that has been used in three high school computer science classes, allowing students to ask the chatbot questions on the coursework. Outside of the classroom, AI can also be helpful for improving attendance and graduation rates, as a Google.org and Datakind pilot program recently proved at John Jay College and is expected to be applied to 6 more CUNY schools. Tech:NYC also recommends that Public Schools align instruction on AI with President Biden's administration's pledge with leading AI companies, which focuses on principles of transparency and "watermarking" AI content, sharing information on risks, and reporting potential bias in AI tools.

Computer Instruction & Emerging Technology in Education

This month, the U.S. Department of Labor released employment projections that found that out of the top 10 fastest growing occupations expected between 2022 - 2032, tech roles made up three of these: data scientists, information security analysts, and software developers. Tech has also been one of the fastest growing industries in NYC, with 114,000 new tech jobs created between 2010 and 2021. At

the same time, diversity within NYC's tech industry is not on par with the local population, with black and hispanic New Yorkers making up 20.8 percent of the local tech industry. The only way to meet the demand of employers while growing our local tech industry and providing New Yorkers with good paying employment opportunities is to educate and produce more technologists locally.

CS4ALL has made great progress training teachers and school administrators in computer science curriculum, having worked with over 800 schools and 2,000 teachers. According to the Center for an Urban Future, 91 percent of the city's public schools now offer computer science classes, thanks to this program. Tech:NYC supports the goals of CS4ALL to ensure that every NYC public school provides computer science education to their students, and we encourage Public Schools to continue investing in this program so that every grade level provides education on computer science skills and thinking.

It's also crucial for NYC teachers to leverage programs like CUNY's Computing Integrated Teacher Education (CITE) to ensure they are prepared to teach computational thinking and computer science education to students. At the same time, NYC has some great examples of providing technical education, including nine CUNY P-TECH schools, as well as the famous Brooklyn STEAM Center and leading STEM high schools including Bronx Science and Queens High School for the Sciences at York College. As Mayor Adams and Chancellor Banks have prioritized specific skill and career training, we encourage them to embrace and continue expanding specialized schools and educational tracks focusing on STEM skills.

Connecting into NYC's tech ecosystem

Beyond building out computer science education curriculum and capacity in schools, Public Schools should support and collaborate with the many great nonprofits providing computer science training in NYC, including Girls Who Code, Mouse.org, Code Nation, the Knowledge House, and others. The Center for an Urban Future's "Plugging In" study found that there were 113 different organizations providing tech education related programs to NYC's K-12 population.

NYC is also home to a thriving tech ecosystem, with over 25,000 tech startups. Public school students should be exposed to these companies and their atmospheres, learn about job opportunities at these companies, and have opportunities to intern at them or be mentored by New Yorkers working in tech. This will also provide opportunities for students to learn about AI and other developing technologies directly from the companies creating them. Tech:NYC works with NYC Public Schools and DYCD each year to coordinate tech companies that participate in the Summer Youth Employment Program, which is hugely impactful on the participating youth, but is only a small program compared to what it could be with increased resources.

This is an exciting time for our youth and educators, and with the right investment in computer science education, our next generation will have countless opportunities to build new technologies and change the world.

NYC Public Schools
Chancellor David C. Banks

Testimony of the New York City Public Schools
Before the New York City Council Committees on Technology and Education

September 20, 2023

Good afternoon, Chair Joseph and Chair Gutierrez, and Members of the New York City Council Education Committee and Technology Committee. My name is Melanie Mac, Senior Executive Director for the Office of Student Pathways in NYC Public Schools. On behalf of Chancellor Banks, thank you for the opportunity to testify today on the roles of artificial intelligence, emerging technology, and Computer Science education in New York City Public Schools. I am joined by Tara Carrozza, Director of Digital Learning and Innovation, and Anuraag Sharma, Chief Information Officer of NYC Public Schools.

Before I begin, I would like to thank Speaker Adams, Chair Joseph, Chair Gutierrez and the entire council for your advocacy on behalf of all New York City school students and meeting their needs in the digital age.

The team members present today represent collaboration underway across NYC Public Schools to directly address the global acceleration of emergent technology development and its impact on K-12 education. Generative AI is already transforming the way we teach, learn, and engage in modern work.

Our mission is to ensure that each student graduates on a pathway to a rewarding career and long-term economic security, equipped to be a positive force for change. To pursue this mission, NYCPS is aspiring to be a global leader in embracing AI and expanding existing programs that build computer science and digital fluency skills as essential concepts layered across core curricula and subject areas.

To advance digital equity for all learners, we are embracing AI as an important lever for us to continue dismantling inequitable systems, cultures, policies, mindsets, and behaviors that impede communities from civic and cultural participation, employment, and lifelong learning. Through our work, we will activate a sustainable model for all learners, of all backgrounds and identities to participate in society, education, and the workforce.

We are grateful for the opportunity today to share our personal and professional experiences, and our passion over many years in driving this transformational work.

This is deeply personal for me, having previously served NYC Public School students and families as a teacher and assistant principal. Prior to my current role, I helped found the Academy for Software Engineering, a small high school with a mission of providing equitable

access to Computer Science Education and real work experience in tech. That school was part of the impetus for the citywide Computer Science for All Initiative.

Bright Starts

In this morning's address on the State of our Schools, the Chancellor laid out our vision for the 2023-24 school year.

Our bright start to this year has already begun! We have been aligning divisional and program objectives with respect to AI to enhance its positive impact on students. Today we would like to highlight key elements of our forward-thinking AI approach that starts as early as PreK and extends to preparing our future workforce, students and NYC community members in a rapidly evolving job market and technological landscape.

Our cross-divisional collaboration started in February 2022, and will expand through a proposed K-12 AI Policy Lab, culminating in an open-resource K-12 AI Policy Toolkit to be shared publicly. In alignment with existing efforts to build digital, informational, and computational literacy, we're designing and delivering a comprehensive AI literacy capacity plan that provides equitable access points for all stakeholders. Finally, we are developing and providing ongoing AI Resources and training to the field, including divisional-specific supports. Through an equity lens and spirit of AI for good, our collective AI capacity building efforts will engage internal and external partners alike, including our district and school leaders, educators, school staff, students, families, and community members.

Bold Futures

As part of our agenda, we are reimagining the school experience so that students can be "Future Ready." As of this school year, 100 high schools are launching FutureReadyNYC college and career pathways – 45 of which are building pathways in tech focused on specific careers, like software development, data science and cyber security analyst. In programs like our "Data Analytics, Visualization, & Machine Learning" pathway, students are learning about AI.

Preparing for future careers begins long before high school and is reflected in our systemwide shift to 21st century, student-centered, flexible learning environments. Over the last year, we've built citywide capacity to deliver high quality blended instruction, engaging more self-led learning and student competency-based mastery across content areas. This year, our intentional focus on activating critical thinking and problem-solving in real-world contexts is exemplified by Teaching and Learning's partnership with the Brooklyn South HE3AT program, a place-based, experiential learning model that will expand to multiple sites thematically focused on AI with respect to policy, safety, game-based learning, accessibility, and sustainability.

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The future of education is now. Generative AI is the catalyst for New York City Public Schools to be the national leader in setting a new vision and uniting to transform K-12 education by integrating AI, emerging technology, computational literacy, and AI literacy as part of the newly universal digital literacy required across core curricula and instruction to deliver quality education for all.

Infrastructure

First, we recognize that embracing emerging technology and implementing Computer Science programs depends heavily on schools' tech infrastructure and capacity. I would like to thank the City Council for its generous technology grant funding for our schools. Since 2020, the NYCPS has purchased approximately 550,000 iPads and 200,000 Chromebooks and distributed them to students and schools for student use. We have taken proactive steps to ensure that every school has sufficient bandwidth, including identifying about 250 schools in the 2022-23 school year in need of bandwidth upgrades. Half of those have already been upgraded and the remaining half will be upgraded by December 2023. Ongoing monitoring will continue to assess upgrading bandwidth at schools that exceed 50% to 60% of their capacity.

Teaching and Learning Intentionality

During my time as a District 75 educator at the largest District 75 alternate assessment high school in NYC, PS 811X, I experienced first-hand how intentional technology use gave students access to learning that otherwise would not happen. One memory that resonates most is seeing the smile and sense of accomplishment when a student reads independently for the first time, made possible only through the combination of a read-aloud tablet and an assistive technology button to turn pages. Intentionality with technology matters. It provides access to instruction, builds self-confidence, and creates a sense of belonging by using a cell phone to communicate with friends despite speech or communication impairments. Like a teacher's intentionality with instructional design, our intent is to build AI and digital literacy skills for all students in our school system to is intended to overcome the kinds of disparities we see in today's computer science and tech-related fields.

In July 2022, DLI partnered with the International Society for Technology Education (ISTE) to offer professional development on AI well before Generative AI launched. We offered thirteen courses aligned to digital learning, with the most popular called "AI Exploration and their Practical Use in Schools."

Fast forward to a few weeks ago, I was graciously asked to participate in a roundtable on AI by the National Secretary of Education, Miguel Cardona. During the roundtable, K-12 stakeholders echoed the need for national guidelines and guardrails. through AI education policy and

regulations. That applies as well to New York City and New York State given the unknowns of this new exploratory technology.

Computer Science Education

Computer Science for All (CS4All) was launched in 2015 to address the lack of access to Computer Science education in NYC public schools. It aimed to develop high-quality coursework and programming for all NYC K-12 public school students to build foundational skills in computational thinking and Computer Science. In 2015, over half of all AP Computer Science course takers in NYCPS attended Bronx Science, Stuyvesant, and Brooklyn Tech, and were disproportionately white and male. Student access to Computer Science education was extremely limited citywide, and there were few teacher education and training programs. Since 2015 the CS4All initiative has trained over 2,900 teachers and supported over 1,000 elementary, middle, and high schools, providing more than 170,000 students with access to a K-12 Computer Science education each year.

When a school participates in CS4All, teachers and administrators receive extensive professional learning on computer science curriculum, resources for building a Computer Science culture, and support from the Computer Science Education Team. Teachers selected to participate in the CS4All initiative attend ongoing, (typically year-long) professional development sessions and dedicated support from the Office of Student Pathways' CSE team in the form of school visits, office hours, and troubleshooting help. Participating teachers are subsequently invited to our CS Leads and Equity Leads programs.

The CS4All initiative influenced the design of the New York State K12 CS and Digital Fluency DF) Learning Standards, and informed the expansion of teacher certification pathways in Computer Science with the Statement of Continued Eligibility, both of which will formally go into effect in the 2024-25 school year.

While CS4All has helped the city make tremendous gains in access to Computer Science education, we still have a long way to go to achieve our goal of making it available to all students. Only 48% of students leave elementary school with a CSE experience from kindergarten through 5th grade; 34% of students leave middle school with a CSE experience; and 31% of students graduate high school with a CSE experience. We also see persistent gaps in Black and Hispanic students' access to CSE. Those disparities have long term implications with 18% of tech jobs being filled by NYC public school graduates. This is a critical moment and we are actively exploring how to take this strong foundation to the next level to ensure all students are ready for the future. This includes shifting our focus from training teachers to student attainment and readiness in computational thinking skills.

Teaching and Learning: Digital Learning and Innovation (DLI)

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Under this Administration, the goal for the Digital Learning Initiative (DLI) is to set a vision for "anytime, anywhere learning" enabled through technology. DLI has built a systemwide capacity to design and deliver flexible learning environments, empowered by blended/remote, experiential, competency-based learning experiences that are student-centered, career-connected, rigorous, and culturally responsive. Digital reskilling and upskilling of leaders and educators is a continuous requirement, offering digital skills pathways and certification pathways with Microsoft, ISTE, Adobe, and more.

In the 2022-23 school year, our newly launched Digital Learning and Innovation team provided:

- Over 17,000 hours of professional learning in digital learning areas
- Over 2,000 hours of district and school-based coaching in blended learning
- Support for 200+ schools to create Digital Learning professional learning plans
- DLI Professional Learning Fall & Spring Catalogues, with over 75 offerings
- First-ever Digital Financial Literacy Institutes with Student Pathways

Learning and Innovation with AI and Generative AI

According to MIT, "Artificial intelligence is the ability for computers to imitate cognitive human functions such as learning and problem-solving. Through AI, a computer system uses math and logic to simulate the reasoning that people use to learn from new information and make decisions." Generative AI refers to a category of AI that generates new outputs based on the data they have been trained on. Unlike traditional AI systems that are designed to recognize patterns and make predictions, generative AI creates new content in the form of text, audio, images, and more.

We are excited to expand our AI, Generative AI, and emergent technologies innovations through an equity lens. For an innovation to be authentic, it must address equity in explicit, scalable, and sustainable formats, and improve outcomes for all students. Our collective efforts intend to optimally prepare students and educators with foundation knowledge artificial intelligence, including what it is, how it works, and its ethical impacts on society.

To be clear, we have been using AI and machine learning solutions before Generative AI. For example, for a student with a mandated Assistive Technology device, we are designing instructional models that increase knowledge, skills, and use of inclusive learning tools, such as text-to-speech and speech-to-text tools, for both students and staff. The intended impact is to ensure fidelity to assistive technology while providing access to other tools that may support students with disabilities in reading, writing and social communication. For English language learners, AI-powered language learning tools can help students develop language skills faster.

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When Open AI introduced ChatGPT to the public in November, a new technology that much of the world had not seen before, many questions and unknowns arose with respect to its impact on teaching and learning. We placed ChatGPT on our list of restricted web-filtered sites, like YouTube, Netflix, or Facebook. At the same time, schools can request to 'unfilter' these sites, including ChatGPT, at the discretion of the school leader.

Simultaneously, we began discussions with tech industry leaders about their platforms' potential and the future possibilities for schools, educators, and students. We consulted with educators citywide, many of whom had already started teaching about the future and ethics of AI, while using generative AI to enhance their teaching. To meet the immediate need for leader and educator support, we took the following steps this past year:

- Created and published a citywide course called "From AI to Generative AI in Education" that can be completed in 30 minutes; it has been accessed by nearly 1,700 educators to date.
- Published a field-facing AI Resource Guide and Library Services AI resource collection on the Soro digital library.
- Launched an Equity and AI summer intensive for educators with 20 hours of professional learning based on MIT's DAILy Curriculum; all participating educators will lead "Day of AI" events in their schools in Spring 2024.
- Hosted "Ready for Revolution", a CS4All virtual event with Mutale Nkonde, founder of AI for the People, who shared her work to advance racial literacy and help educators understand and teach the ethical considerations of AI. During this event, educators shared lesson plans on topics such as Ethnocomputing, the Ethics of ChatGPT, and Abolition in Computer Science.
- Established PLC of Digital Learning and Innovation Ambassadors, who provide real-time feedback on classroom AI experiences.
- Created AI resources and turn-key, ready-to-use lesson plans, appropriate for the needs of students with disabilities and English Language Learners.

What's Next?

During NYC EdTech Week (October 2-5), we will kick off our NYCPS K-12 AI Policy Lab, with the goal of finalizing our K-12 AI Policy by June 2024, and sharing that information on a global scale in the form of a digitized "K-12 AI Toolkit."

We also will provide comprehensive AI Literacy professional learning and skills training citywide, across all stakeholders. Combining the K-12 AI Policy Lab and AI Literacy Professional Learning and Training, NYCPS will pursue a comprehensive, equity-focused approach to implementing skillful and responsible AI use in our schools. Together, we'll foster

educational equity, building skills that increase access to career and college options to achieve economic stability and optimal quality of life for all students.

Here is a selection of our collective AI-related pilots and initiatives:

- Citywide AI Literacy training to build core understanding of the technologies and to develop a critical lens for classroom implementation
- Expanded capacity for the ISTE 15-hour "AI Explorations in the Classroom" course
- A small-scale pilot of a generative AI teaching assistant to offer real-time feedback and provide answers to student questions
- Support for schools and districts to create Digital Learning Plans, including planning for AI and Cybersecurity
- A partnership with MIT RAISE (Responsible AI for Social Empowerment and Education) to bring professional learning to educators for the Day of AI curriculum

NYC Public Schools is the ideal K-12 environment to explore and build AI policy, AI literacy training, and pilot innovative learning models that critically examine and problem solve around one of the most important technologies of our time: Generative AI. Our unified efforts, continuous feedback loops from diverse perspectives, and public sharing of learning will position NYC Public Schools as a global leader in K-12 AI policy, AI literacy training at scale, and AI in education.

Conclusion

The rapid assimilation of AI in the education sector has raised critical challenges related to data privacy, ethical implementation, systemic biases, and digital equity. While AI has the potential to revolutionize teaching and learning, our approach is measured. We intend to follow the nationally recognized EdSafeAlliance AI Framework and benchmarks to align specific needs and equitable outcomes for all learners. With responsible AI use as an equity lever, we can integrate digital literacy, AI literacy, and computational literacy as essential parts of our 21st century core curriculum.

We look forward to continuing to engage the Council on our plans to advance Computer Science education and digital learning and leveraging the best of AI and generative AI to improve student learning. To advance digital equity for all learners, AI can act as a lever to continue dismantling inequitable systems, cultures, policies, mindsets, and behaviors that impede communities from civic and cultural participation, employment, and lifelong learning. We thank the Council for their commitment to preparing students of New York City for their Bold Futures.

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Mark Levine, Borough President

MANHATTAN BOROUGH PRESIDENT MARK LEVINE TESTIMONY BEFORE THE CITY COUNCIL COMMITTEES ON EDUCATION AND TECHNOLOGY SEPTEMBER 20, 2023

Good afternoon, Chairs Gutiérrez and Joseph, and members of the Committees on Education and Technology. My name is Mark Levine, and I am the Manhattan Borough President. Thank you for the opportunity to testify at today's hearing tackling the integration of emerging technologies in New York City's public schools. There are many valuable topics this hearing is sure to explore, including not only the role of generative AI products in the classroom, but also improvements to the CS4All initiative and necessary upgrades to hardware and broadband accessibility.

Bureaucracy can move slowly adapting to new technologies. It took decades for schools to change math curriculums after calculator applications were developed for smart phones. We cannot make the same mistake with generative AI. Tools like ChatGPT, Bard, Midjourney, and Runway are already being used in offices, homes, and classrooms across New York City. As of March 2023, over 33% of students aged 12 to 17 used ChatGPT for school according to the Walton Family Foundation.

This should not be a cause for alarm. Rather, it presents a new resource for our teachers and the opportunity to provide a better education for our students as we prepare them for a rapidly changing job environment.

Achieving that goal will only be possible if we proactively equip our students and teachers with appropriate guidelines that outline the great potential of generative AI and its weaknesses. Teachers need to receive orientation on these new tools and be given the space to share their experiences. The Department of Education (DOE) should provide a framework that shows educators how tools can be used to aid with lesson planning and quiz creation, creating a better learning experience for our students. According to Alexis Ocampo, generative AI can address the learning needs of students with disabilities like dyslexia or ADHD and can convert content in a way that aligns with a student's learning style. Ensuring teachers are prepared and comfortable with uses of generative AI is the first and most important step to ensure the safe implementation of this new technology.

Students should be taught how to effectively use tools like ChatGPT and Midjourney, including an understanding of their limitations as a source of factual, unbiased content.

Moreover, we need to teach students to identify generated content and the increased spread of misinformation that will inevitably grow with these products.

As we teach students of the growing influence technology has in our education, work, and daily life, we must renew our efforts to provide them pathways to careers in STEM. Yet, in October 2022, New York University's Research Alliance on CS4All showed that only 17% of DOE schools met participation and equity goals set for girls, Black, and Latinx students. Largely this failure stems from a lack of qualified instructors. We simply are not giving students the chance to develop an interest in computer science. The DOE must make a concerted effort to improve access and increase training for educators to become qualified CS4All instructors.

Still, the greatest barrier to equity in education remains basic resources. Students can only learn when we empower them. A student whose only access to these new tools and the wealth of opportunities online comes from a few hours in the classroom will always be at a disadvantage.

To this end, I am proud to have introduced Resos 766, 767 and 742 in partnership with Chair Joseph and Council Member Abreu, and I look forward to working with the Council and the Administration to establish policies shaping the role of emerging technologies in our public schools.

SURVEILLANCE TECHNOLOGY OVERSIGHT PROJECT

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STATEMENT OF
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SURVEILLANCE TECHNOLOGY OVERSIGHT PROJECT ("S.T.O.P.")

BEFORE THE COMMITTEES ON EDUCATION AND TECHNOLOGY,
NEW YORK CITY COUNCIL

FOR AN OVERSIGHT HEARING ON THE ROLE OF ARTIFICIAL INTELLIGENCE, EMERGING TECHNOLOGY, AND COMPUTER INSTRUCTION IN NEW YORK CITY PUBLIC SCHOOLS

PRESENTED
September 20th, 2023

Good afternoon, Chair Gutiérrez, Chair Joseph, and members of the Committees on Technology and Education. The Surveillance Technology Oversight Project ("S.T.O.P.") is a New York-based civil rights and anti-surveillance group that advocates and litigates against discriminatory surveillance. Thank you for organizing this important hearing. We urge the Council to adopt an ethical approach to the pedagogical use of artificial intelligence (AI) and to keep harmful, ineffective, and discriminatory tools of surveillance technology out of New York City classrooms.

I. Ethical Education

It is crucial that ethics are taught alongside coding and considered before using generative AI tools like chatbots, so that we do not raise a generation of tech solutionists who do not consider the potential negative consequences of the technology they use or make. New York University professor Meredith Broussard coined the term "technochauvinism" to describe the potentially dangerous belief that technology is always the solution, when it actually leaves historically marginalized students in an even worse position.[1] A parallel to the more commonly used technosolutionism, her framing of technochauvinism intentionally underscores the gender and racial biases often baked into algorithmic systems. New York City schools must avoid becoming breeding grounds for techno-chauvinists.

Human bias infects AI systems, and curriculum on AI must educate students about that reality. AI datasets reflect historical inequities. In the educational context, this can have an impact on student outcomes such as grades and college admissions, especially for disabled, Black, and female students. We need to ensure that systems used in schools do not discriminate.

Additionally, AI systems can collect vast amounts of student data, including sensitive information such as demographic data, health, and learning disabilities. OpenAI, the company that created the popular chatbot ChatGPT, was sued in California for its use of data scraped from the internet.[2] Teachers need to understand how data given to AI tools is collected, stored, and used to ensure that student privacy is protected.

Many schools employ spyware technology that searches students' browser histories, emails, and typed assignments for images and keywords that supposedly indicate mental illness.[3] One of the most common tools is Gaggle, which often fails to understand context when it monitors online behavior. [4] AI cannot reliably understand when a student is simply conducting research or truly in need of intervention.[5] For

[1] Meredith Broussard, *Artificial Unintelligence: How Computers Misunderstand the World* (MIT Press, 2018).
[2] Gerrit De Vynck, "ChatGPT Maker OpenAI Faces a Lawsuit Over How It Used People's Data," *Washington Post*, June 28, 2023, https://www.washingtonpost.com/technology/2023/06/28/openai-chatgpt-lawsuit-class-action.
[3] "FAQs: Bark for Schools," Bark, May 19, 2023, https://support.bark.us/hc/en-us/articles/360050483491-FAQs-Bark-for-Schools; Rachel Franz, "Get Gaggle out of Schools Today," *Fairplay* (blog), May 17, 2022, https://fairplayforkids.org/get-gaggle-out-of-schools-today/; "Securly - The Student Safety Company," Securly, accessed June 22, 2023, https://www.securly.com/; "Tracked," accessed June 22, 2023, https://interactives.dallasnews.com/2022/social-sentinel/.
[4] Franz, "Get Gaggle out of Schools Today."
[5] Deciduous Livingston, "LGBTQ Students Reportedly Targeted by Surveillance Programs," *Out Front*, November 2, 2021, https://www.outfrontmagazine.com/lgbtq-students-targeted-by-surveillance-programs/.

example, Gaggle erroneously flagged a student who served as an editor for her school's literary journal after other students submitted their fictional stories to her for publication.[6]

As another example, many schools are opting to implement computer tutoring programs equipped with generative AI chatbot technology.[7] Chatbots work with students to answer questions about problems and provide guidance.[8] However, chatbots can also integrate with AI spyware tools to alert teachers and law enforcement if students discuss mental health with the chatbot.[9] But like other AI, classroom chatbots don't understand context, and are very likely to wrongly alert school officials that a student may be at risk, wrongly compromising the students medical privacy. One such chatbot is Khan Academy's automated teaching aid, Khanmigo.[10] Khanmigo monitors students' interactions with its system, alerting schools if topics like self-harm are discussed with the chatbot.[11] Just like with Gaggle, Khanmigo is likely to make wrong calls about students' meanings, potentially leading to counterproductive intervention.

A comprehensive curriculum should incorporate ethics, privacy, and equity. Cornell University, for example, suggests the following questions for educators and students to ask about AI tools in the classroom:

- Is the AI-generated content accurate? How can you test or assess accuracy?
- Can other credible sources (outside of generative AI) validate the data or item produced?
- How does the information generated impact or influence your thinking on this topic?
- Who is represented in this data? Is the data inclusive in terms of the material's scope and the perspectives that it presents?
- Knowing [large language models] may also be collecting the data your students input (i.e., in their prompts), how will you make students aware of this practice so they will in turn safeguard their own privacy?[12]

Additional helpful questions include:

- Would you be comfortable with the information you give chatbots being stored and shared with others? Is there any private information, such as medical or financial records, included?
- Does the AI system include interaction modes suitable for disabled students or others with specific individual learning needs?
- Is student data protected and stored securely, only to be used for the specific purposes for which it was collected?

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[6] Mark Keierleber, "Gaggle Surveils Millions of Kids in the Name of Safety. Targeted Families Argue It's 'Not That Smart,'" October 12, 2021, https://www.the74million.org/article/gaggle-surveillance-minnesapolis-families-not-smart-ai-monitoring/.
[7] Chris Sadler, "The Future of AI Tutoring in Higher Ed," *New America* (blog), April 4, 2023, https://www.newamerica.org/oti/briefs/the-future-of-ai-tutoring-in-higher-ed/.
[8] Sadler, "The Future of AI Tutoring."
[9] Natasha Singer, "New A.I. Chatbot Tutors Could Upend Student Learning," *New York Times*, June 8, 2023, https://www.nytimes.com/2023/06/08/business/khan-ai-gpt-tutoring-bot.html?searchResultPosition=3.
[10] Sadler, "The Future of AI Tutoring."
[11] Singer, "New A.I. Chatbot Tutors Could Upend Student Learning."
[12] "Ethical AI for Teaching and Learning," Cornell University Center for Teaching Innovation, accessed September 18, 2023, https://teaching.cornell.edu/generative-artificial-intelligence/ethical-ai-teaching-and-learning.

Widespread adoption of AI must be accompanied by the asking of these questions and guardrails must be in place to ensure privacy and equity. Anything else is a disservice to our students.

II. The Harms of Using AI Surveillance in Schools

Beyond adopting a questioning lens when it comes to the use of AI in pedagogy, we must also understand how AI surveillance tools are weaponized against students, creating an unsafe learning environment. Facial recognition technology (FRT) and other biometric surveillance should be banned in schools and schools should stop using online proctoring tools that surveil students and do not adequately accommodate disability.

Biometric Surveillance Technology

The New York Office of Information Technology Services detailed the harms posed to students by the use of biometric identifying technology like FRT in a recent report, which found that the risks of using this tech likely outweigh any potential benefits in school settings.[13] FRT and other AI tools are built with bias baked in. FRT systems may be up to 99 percent accurate on white men, but can be wrong more than one-in-three times for women of color. [14] Additionally, one study found that CCTV systems in U.K. secondary schools, a fundamental prerequisite for many FRT systems, led many students to suppress their expressions of individuality and alter their behavior.[15] Voice recognition software, another widely publicized biometric surveillance tool, echoes the pattern of poor accuracy for those who are nonwhite,[16] non-male,[17] or young.[18]

The data collected by biometric surveillance technologies is vulnerable to a variety of security threats, including hacking, data breaches and insider attacks.[19] This data—which includes scans of facial features, fingerprints, and irises—is unique and highly sensitive, making it a valuable target for hackers, and once compromised, impossible to reissue like you would a password or PIN. Collecting and storing biometric data in schools, which tend to have inadequate cybersecurity practices,[20] puts children at great risk of

[13] "Use of Biometric Identifying Technology in Schools," New York Office of Information Technology Services, August 2023, https://its.ny.gov/system/files/documents/2023/08/biometrics-report-final-2023.pdf.
[14] Steve Lohr, "Facial Recognition Is Accurate, If You're a White Guy," *New York Times*, February 9, 2018, https://www.nytimes.com/2018/02/09/technology/facial-recognition-race-artificial-intelligence.html.
[15] Claire Galligan, Hannah Rosenfeld, Molly Kleinman, and Shobita Parthasarathy, "Cameras in the Classroom: Facial Recognition Technology in Schools," University of Michigan Technology Assessment Project Report 2020, https://stpp.fordschool.umich.edu/sites/stpp/files/uploads/file-assets/cameras_in_the_classroom_full_report.pdf.
[16] Rachael Tatman and Conner Kasten, "Effects of Talker Dialect, Gender & Race on Accuracy of Bing Speech and YouTube Automatic Captions," *Interspeech* 2017, https://drive.google.com/file/d/1-KguIOU0B9CFBli9nN9U9ZintWLVufry/view.
[17] Rachael Tatman, "Gender and Dialect Bias in YouTube's Automatic Captions," *Proceedings of the First Workshop on Ethics in Natural Language Processing*, 53–59, April 4, 2017. https://aclanthology.org/W17-1606.pdf.
[18] Patricia Scanlon, "Voice Assistants Don't Work for Kids: The Problem with Speech Recognition in the Classroom," *TechCrunch*, September 9, 2020, https://techcrunch.com/2020/09/09/voice-assistants-dont-work-for-kids-the-problem-with-speech-recognition-in-the-classroom.
[19] "How Biometrics are Attacked," Biometric Recognition and Authentication Systems, UK National Cyber Security Centre, published January 24, 2019, https://www.ncsc.gov.uk/collection/biometrics/how-biometrics-are-attacked.
[20] Rachael Altman, "Cybersecurity Concerns Escalate in the Education Industry," *G2*, November 2, 2021, https://www.g2.com/articles/cybersecurity-concerns-in-the-education-industry.

being tracked and targeted by malicious actors.[21] There is absolutely no need to expose children to these privacy and safety risks when low tech solutions exist that collect none of the same sensitive information.

New York should not make the mistake of allowing young kids to be subjected to the harms of FRT. Normalizing biometric surveillance will bring about a bleak future for New York City school children.

Remote Proctoring

During the COVID-19 pandemic, as schools shifted to remote learning, many started using surveillance to discourage cheating, including video monitoring to flag supposedly suspicious behavior and remote access to students' computers to control their activity during exams. The need for these tools is not clear: evidence suggests that students cheat less on online exams than in traditional classroom settings.[22] Moreover, their effectiveness at encouraging academic honesty is simply unknown. But the dangers of such tools are all too clear.

Remote proctoring disadvantages some groups of students more so than others: automatic flagging of suspicious behaviors penalizes students with disabilities and stigmatizes a range of normal behaviors.[23] For example, the tech may flag students with Tourette's who have motor tics, autistic students who rock back and forth, or visually impaired students who have atypical eye movements. And biased FRT is a component of identity verification for many proctoring services. Such tools also require students to meet significant technological requirements to participate in education, penalizing low-income students unfairly.

In addition to these equity concerns, these tools normalize spying on students, allowing unseen proctors to closely monitor students during exams. In their disrespect for student privacy, they also pose a significant risk to students' data security.[24]

S.T.O.P. recommends that educational institutions stop using online proctoring services. If schools do continue to use these services, they should be required to use the least invasive technology possible—those that avoid biometric monitoring and require third party verification of claims of efficacy. New York should also mandate those systems be audited for unfairness and bias. New York City schools should not subject students to intrusive or discriminatory surveillance as the price of receiving an education.

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[21] Benjamin Herold, "FBI Raises Alarm on Education Technology and Security of Students," *EducationWeek*, September 18, 2018, https://www.edweek.org/leadership/fbi-raises-alarm-on-education-technology-and-security-of-students/2018/09.

[22] Chris Pilgrim and Christopher Scanlon, "Don't Assume Online Students Are More Likely to Cheat. The Evidence Is Murky," *The Conversation*, July 26, 2018, https://theconversation.com/dont-assume-online-students-are-more-likely-to-cheat-the-evidence-is-murky-98936.

[23] Lydia X.Z. Brown, "How Automated Test Proctoring Software Discriminates Against Disabled Students," *Center for Democracy & Technology*, November 16, 2020, https://cdt.org/insights/how-automated-test-proctoring-software-discriminates-against-disabled-students.

[24] Albert Fox Cahn, Caroline Magee, Eleni Manis, and Naz Akyol, "Snooping Where We Sleep: The Invasiveness and Bias of Remote Proctoring Services," Surveillance Technology Oversight Project, November 11, 2020, https://static1.squarespace.com/static/5c1bfc7eee175995a4ceb638/t/5fd78bac79515d2e1fde4bb7/1607961518518/Snooping+Where+We+Sleep+Final.pdf.

COMMUNITY EDUCATION COUNCIL DISTRICT 3

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Vol 24 (P) No 1

Resolution in Support of Bilingual Program Extension to Middle Schools and Citywide Remote & Digital Learning World Language Programs Access

Sponsor: Dr. Darling J. Miramey

We, the members of the Community Education Council in District 3 (CEC3), hereby present this resolution in support of extending bilingual programs to middle schools and implementing digital programs for all students within the New York City Department of Education (NYCDOE).

WHEREAS, language proficiency is a vital skill in our increasingly globalized world, enabling students to communicate, collaborate, and understand diverse perspectives, cultures, and ideas.

WHEREAS, the NYCDOE is committed to promoting equity, access, and excellence in education, ensuring that all students have the opportunity to succeed.

WHEREAS, research has shown that early language learning benefits cognitive development and enhances overall academic performance.

WHEREAS, the inclusion of bilingual programs in elementary schools has shown significant positive effects on students' language acquisition, cognitive skills, and cultural awareness.

WHEREAS, the transition from elementary to middle school is a crucial time in students' education, and it is essential to continue supporting their language development during this critical period.

WHEREAS, remote learning has become a reliable educational tool in a Post Covid Shutdown learning space.

WHEREAS, the need for accessibility and flexibility in language education, including remote and digital options, has become increasingly important in our evolving educational landscape.

THEREFORE, BE IT RESOLVED, that the Community Education Council in District 3 (CEC3) supports the expansion of bilingual programs to middle schools within the NYCDOE, to foster continuous language development and enrichment for students as they progress through their educational journey in the classroom, remote as well as using digital learning.

BE IT FURTHER RESOLVED, that the Community Education Council in District 3 (CEC3) calls for immediate establishing of citywide remote and, digital learning programs at the earliest possible to ensure that all middle and high schools students have equal access to quality language education, regardless of their school location or available resources. As well as considering opening, as soon as possible, a citywide remote and digital learning world language program, Language Other Than English (LOTE) .

BE IT FURTHER RESOLVED, that the NYCDOE should allocate sufficient resources to support the successful integration and execution of bilingual programs extension in middle schools.

BE IT FURTHER RESOLVED, that the NYCDOE should collaborate with language experts, educators, and community stakeholders to develop comprehensive, culturally responsive, and age-appropriate world language curricula that align with students' diverse needs and interests.

BE IT FURTHER RESOLVED, that the NYCDOE should regularly monitor and assess the effectiveness of these programs, taking into account feedback from students, parents, educators, and the community, and make necessary adjustments to ensure continuous improvement and success.

THEREFORE, BE IT RESOLVED that the Community Education Council of District 3 (CEC3) urges the continuation and expansion of any currently offered Elementary School bilingual programs to Middle and High Schools within District 3 so that students can continue their course of studies.

BE IT FURTHER RESOLVED, that if no in-person option is readily available, that remote learning options are made available to students so that they may continue their bilingual education with the support of the NYCDOE.

We, the members of the Community Education Council in District 3 (CEC3), wholeheartedly believe that expanding bilingual programs to middle schools and implementing citywide remote and digital learning world language programs are integral steps towards fostering a linguistically diverse and inclusive learning environment that prepares our students for success in the global society.

Testimony of the United Federation of Teachers
before the
New York City Council Committees on Education and Technology
regarding
The Role of Artificial Intelligence, Emerging Technology, and Computer Instruction in New York City Public Schools

September 20, 2023

Our names are Janella Hinds, United Federation of Teachers (UFT) Vice President for Academic High Schools, and Leo Gordon, UFT Vice President for Career and Technical High Schools. On behalf of the union's more than 190,000 members, we would like to thank Technology Committee Chair Jennifer Gutiérrez and Education Committee Chair Rita Joseph for holding today's public hearing on the role of artificial intelligence, emerging technology and computer instruction in New York City public schools.

Over the past years, we and our union have been deeply involved in conversations and policy development about the role of technology in our schools. One element of this has been continuously updating the professional learning we provide to our members on this topic. During the pandemic, our UFT Teacher Center was crucial to supporting our city's educators in the transition to remote learning in early 2020 and has continued to make this area of professional learning a priority. We appreciate the Council's support in providing the Teacher Center with grant funding for the past several years to maintain the accessibility and relevance of this training, including the opportunity to offer over 20,000 hours of free training to city educators on the use of Apple technology to support translation services for our English language learners and other classroom practices. In addition, the American Federation of Teachers provided multiple workshops at its annual conference this summer dealing with the impact of technology on the ways in which we teach and our students learn. At all of these sessions, teachers are grappling not only with the skillsets that they need to successfully teach our students using the latest technology but also the emotional element of fear that some people have about technology potentially taking our work away from us, changing the way that we have been used to teaching or changing the way students experience the world.

All of these elements are being considered as we continue to roll out the agreement in our new contract to provide for a major expansion of virtual learning in New York City public schools. Starting this fall, the Department of Education's current centrally run pilot program for virtual learning will be expanded, with 25% of high schools eligible to be selected for the program this year and all high schools eligible in the 2027–28 school year. In addition, both high schools and 6–12 schools will be able to offer school-level

virtual programs after school and on weekends to students who volunteer to take part. It is important to note that UFT-represented employees can volunteer to apply for this program and that no employee will be required to participate. In addition, teachers who volunteer to participate will maintain their license and therefore tenure. Only if a teacher changes their license (from math to ELA, for example) would they go back on probation, as is true outside the Virtual Learning Program as well.

With all this in mind, we have both been working on the question of how artificial intelligence (AI) will transform the way we teach and our students learn. The fact is, we've been consumers of AI for over 10 years — for example, through the password process in banking and online purchases. The difference now is that rather than being consumers of AI, we and our students are increasingly becoming creators and composers of it. It can be scary when you look behind the curtain at what AI can do, but we have to understand that the process of its integration into our lives has been going on for over a decade — and we have to now teach young people how to utilize it as a tool.

What we have found is that our members are already thinking, "Well, how do I incorporate this into the lessons that I'm going to be teaching? How do we give students the template for successfully using these platforms? How do they question the product that they get out of ChatGPT?" Rather than allowing their students to accept what AI produces as the truth, teachers are working on ensuring that their students know that ChatGPT and similar AI tools often have lots of inaccuracies in what they produce, whether it's in science, math, history or other subjects. Prompting is another skillset necessary in order to do more escalations and experimentation with AI. I have spoken with educators and teachers in the high schools who combine these goals by assigning students projects such as giving ChatGPT a prompt to write poetry in the style of a particular person and then analyzing the product that they've received. New York City educators are developing lessons like these to teach our students to critically think about the way in which they use the tool and what the tool actually produces now, so they can more successfully use it when they go into the world of work.

We can't forget that we're building the skills for the future job market, which is one reason we also have partners like Tech in School. We and these partners have been working with schools around AI for the last couple of years, including doing professional development on how to apply AI technology and how to create tools in the classroom. In terms of Career and Technical education programs, educators are learning how AI affects coding at various levels, including by increasing productivity when coding, introducing cybersecurity implications, and creating access to programming languages that are beyond the average student's experience. AI is helping them develop and improve their knowledge in an area that goes outside the class.

In terms of next steps, including those called for in the three resolutions introduced last week, we strongly support increased attention to the issues of education technology and

call for a thoughtful rollout of efforts to address those issues. We welcome updates to the Computer Science for All initiative to increase access to professional development for educators and administrators, particularly for those in underserved schools, and to increase training for all teachers. We support the development of curriculum around issues of machine learning and generative AI.

You'd be hard-pressed to find any professional learning workshops right now that deal with technology that don't have some kind of AI information, warning or hands-on training. For now, most of these trainings are focused on teachers at a secondary level, including high school and upper-level middle school educators who are thinking about taking it into the classroom in ways that our elementary school colleagues don't necessarily have to grapple with yet. What we've heard from elementary school teachers in terms of how to make this content relevant to their work is a need to focus on the nuts and bolts of how to learn — to help students individually do things with the materials that are right in front of them. For middle school, there's promise in developing a special education tool, intelligent tutoring and the kind of data analysis that happens as the demand for personalized learning increases at this level. For older students, who are moving toward secondary readiness, there is a focus on longer-term critical thinking, work that is more in-depth and projects that require the use of technology — whether it's a Canva presentation, a podcast or a video analysis.

When it comes to adjustments to current policies and the mandating of new professional learning for all educators, however, we recommend moving forward thoughtfully and in full consultation with both educators themselves and experts in these technical fields before making any significant changes or mandating specific types of professional learning. When the conversation about generative AI first happened at the school level last year, there were fears of the implications of this new tool at the system and school levels, and it was immediately shut down by the DOE before being permitted again later in the school year. Currently, there is no AI-specific tool has been certified through the DOE and given full access yet. Most of the commercial AI programs are free tools that schools can access, though some of them are blocked by the DOE. As educators and school leaders are learning more and more about how to utilize this technology, we look forward to collaborating with the Council and with other stakeholders to make sure that these reasonable fears don't outweigh appropriate access to these new and important tools.

For us, we believe appropriate access means starting with older students and making sure the tools we provide access to are developmentally appropriate for this age group, a process that can be phased in over the coming years. We encourage the DOE and Council to look beyond a one-size-fits-all model on this issue. Our schools each have their own technology teams, which ideally work in partnership with their schools' professional development teams. Both of these groups are thinking about the way to successfully use technology in their schools, and that's going to look different from one school to the next.

Finally, we look forward to continuing to have these important conversations with the Department of Education, because we realize that as technology expands, there are going to be changes in our working conditions as well as in the learning conditions for our students. We want to be at the front of that conversation, and we want to make sure that the voices of teachers who are in classrooms are being heard and respected as we think about how these rapid changes are being implemented in our schools. We want to have conversations to try to dispel some of those feelings of apprehension about AI and to encourage educators to approach these opportunities to improve our students' education with excitement rather than fear.

Thank you again for today's hearing. We look forward to our continued engagement throughout the process of developing policies and practices around this issue that work for our educators and students.

Testimony of Rachel Neches

Data Researcher, Center for an Urban Future

Before the NYC Council Committees on Technology and Education

Expanding the Training of NYC's Future Teachers to Integrate Computing Education

September 20, 2023

My name is Rachel Neches. I am the data researcher at the Center for an Urban Future, an independent research organization focused on building a stronger and more equitable New York City.

I'll be testifying on behalf of the Center's Editorial and Policy Director, Eli Dvorkin. Thank you to Chair Gutiérrez, Chair Joseph, and members of the committees for the opportunity.

I'm here today to share some of our research and recommendations around expanding computing education in New York City public schools to ensure that more New Yorkers of color, women, and low-income students gain access to technology-powered careers. The impact of emerging technologies like generative AI will only accelerate the need to ensure that every young person graduates high school equipped with the building blocks of computational thinking.

We commend Chair Joseph for introducing Resolution 0766-2023, calling on the Department of Education to expand training for all teachers in computing education through increasing access to CS4All professional development.

In addition to training current teachers, our research at the Center for an Urban Future suggests that achieving computational fluency across the K-12 system will only be possible by training thousands more of the city's future teachers—at all grade levels and in every subject—to integrate the core concepts of computing education into their classrooms. We detailed these findings in a report published last week titled *Expanding on CS4All: Training NYC's Future Teachers to Integrate Computing Education.*

Right now, fewer than 5 percent of new teachers each year are equipped to teach computational thinking. This gap is a key reason why, despite the fact that 91 percent of the city's public schools now offer computer science classes, just 17 percent of schools are achieving CS4All's participation & equity goals, meaning most students are still not participating in computer science classes.

Our latest report finds that the key to increasing computer science participation rates in high school is to introduce core computational concepts in the earliest grades, helping more young

people build confidence in this area. And the best opportunity to achieve this is to train more teachers before they even enter a New York City classroom.

CUNY—which, incredibly, supplies about a third of all new public school teachers each year—has a promising program that is doing just this, the Computing Integrated Teacher Education (CITE) program.

To prepare all of New York City's children to navigate the fast-changing technology landscape—and get on the path to growing careers—the City Council should work with the Adams administration to scale up the CITE program to serve all teachers in training.

This decision alone would add more than 8,000 new teachers at all grade levels who are equipped to integrate computing education into their classrooms over the next five years.

The City Council should also consider establishing a new Computing Education Fellowship to encourage more aspiring teachers—particularly from low-income communities—to pursue integrated computing education and bring the benefits back to their communities.

New York City is well-positioned to capture a meaningful share of the growth in AI-powered jobs, start-ups, and industries in the years ahead. Ensuring that far more New Yorkers have access to these jobs, however, will require a new level of investment in universal computing education.

To start, the Council should invest now in training New York City's future teachers to become champions of computational thinking.

Thank you for the opportunity to testify today, and for bringing attention to the need for expanding computing education in New York City schools.

From the Desk of
Jacquelyne (Dr. Jackie) Cody, Ed.D.
nanedcommittee@gmail.com

This discussion on AI is another reason why the Citywide Leadership Team Bills need to pass in New York, State Legislation. We urge the New York City Council to pass the resolutions below, because when it comes to teaching and learning, we need the village, we need all hands on deck, and making sure every student has direct access to high quality education. This means making sure AI is instituted in a safe and productive manner.

- *Res. No. 444* **(Joseph)**, *a Resolution calling upon the New York State Legislature to pass, and the Governor to sign, S.1689/A.1793 requiring all district leadership teams to operate under open meetings law requirements*
- *Res. No. 445* **(Joseph)**, *a Resolution calling upon the New York State Legislature to pass, and the Governor to sign, S.2949/A.1203, requiring District Leadership Teams and School Leadership Teams to include student representatives*
- *Res. No. 446* **(Joseph)**, *a Resolution calling upon the New York State Legislature to pass, and the Governor to sign, S.2967/A.1799, establishing the citywide leadership team*

Yours in Solidarity, Liberty, & Justice for All!

Dr. J. M. Cody,

NAN's Eastern Regional Education Advisor & Liaison

Vice President, NAN's Brooklyn Central Chapter &

Education Committee Chair

The Research Alliance for New York City Schools

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Testimony of Cheri Fancsali, Ph.D.,
Executive Director, Research Alliance for New York City Schools
To the New York City Council Committees on Education and Technology
Regarding the Role of Artificial Intelligence, Emerging Technology, and Computer Instruction in New York City Public Schools
September 20, 2023

On behalf of the Research Alliance for New York City Schools, I would like to thank Chairs Jennifer Guitierrez and Rita Joseph and the members of the Education and Technology committees for the opportunity to provide testimony for the hearing on the "Role of Artificial Intelligence, Emerging Technology, and Computer Instruction in New York City Public Schools." My name is Cheri Fancsali, and I am the executive director of the Research Alliance for New York City Schools, an independent research center housed at New York University. Our mission is to conduct rigorous studies on topics that matter to the City's public school system. We are dedicated to advancing equity and excellence in education by providing credible, nonpartisan evidence about policies and practices that promote students' development and academic success. Since our inception, the Research Alliance has conducted a variety of studies examining conditions and trends in NYC schools, and assessing the impact of various policies, programs and initiatives, including work focused on students' social and emotional well-being, high school choice, college and careers preparation, school improvement, and accountability. We have amassed a substantial body of work in the realm of computer science education, currently serving as the external evaluator of NYC's CS4All initiative. As the principal investigator for the evaluation of CS4All, I am pleased to provide the testimony below based on our research to date.

Background on CS Education

Over the past decade, there has been increasing demand, at district, state, and national levels, to ensure that all students have opportunities to acquire computational thinking skills and to experience hands-on computer science (CS) curriculum and courses throughout their educational journeys. Several factors have fueled this recent surge in CS activity in K-12 education. One of the most frequently cited motivations for bringing CS to all students is economic necessity. Today, there are an estimated 500,000 open computing jobs nationwide. At the same time, only about 62,000 students graduated college and entered the workforce with a CS degree in 2019 (Code.org, 2019), contributing to a sizable and growing gap in our workforce. Jobs in computer occupations are projected to increase by 12 percent between 2018 and 2028, primarily due to heightened demands related to cloud computing, the collection and storage of big data, and information security (BLS, 2019). The need for workers with computer science

skills is prevalent across all industries, not just high-tech. Further, wages for these positions are well above the national average.

Issues of equity and social justice have also been catalysts for the CS education movement, particularly given the job prospects and earning potential for those with CS skills. Disparities in access to and participation in CS education are well documented (Google Inc. & Gallup Inc., 2016b). Women and girls, Black and Latinx students, low-income students, and students with disabilities all have been systematically underrepresented in CS education and careers. Research shows that Black, Latinx, and low-income students are much less likely than their White and more affluent peers to have access to CS learning opportunities in school or access to computers at home. Girls and young women face additional social barriers: Compared with male students, they report less interest in and awareness of CS opportunities, and they are less likely to report having ever learned CS in grades 7-12 (Margolis, et. al., 2017). These disparities persist further along in the CS pipeline, with women earning only 18 percent of computer science bachelor's degrees in the US, and Black and Latinx students earning less than 10 percent.

The broad support for K-12 CS education also stems from a widely held belief that the use of computational concepts and methods—problem solving, designing systems, refining the steps in a process, and tinkering toward creative solutions—are relevant in nearly every discipline, profession, and industry (Grover & Pea, 2018; Wing, 2006). Often referred to as "computational thinking", these 21st Century skills are considered fundamental for everyone, not just computer scientists.

In short, an increasing number of policymakers, business leaders, and educators see it as both a practical and moral imperative to provide all students with opportunities and access to high-quality CS education. They seek to empower underserved students and communities to participate as creators—not just consumers—in a digital world. This commitment is rooted in the recognition that a diverse range of voices, including those who have historically been underrepresented and marginalized, is essential to the design and development of innovations that address pressing societal needs. Expanding participation in computer science is seen as a means to not only strengthen the workforce but also arm students with skills that allow them to address significant societal problems, fostering a more equitable and inclusive future.

The NYC CS4All Initiative

Since 2015, New York City Public Schools (NYCPS) have been engaged in an effort to bring computer science education to all students in the district. Through the CS4All initiative, NYCPS aspires to provide CS experiences that develop students' computational thinking, problem-solving, creativity, and critical thinking skills. The initiative aims to provide every student with a meaningful CS learning experience at each grade band (K-2, 3-5, 6-8, and 9-12), with an explicit focus on engaging girls, Black students, and Latinx students. Meaningful CS learning experiences are defined as units of CS instruction that last at least 11 hours and are integrated into another course, or semester- or year-long standalone CS courses. As part of the initiative, NYCPS has provided CS curricula and materials, in-depth professional development (PD) for teachers and school leaders, and a range of other supports, including coaching, implementation planning guides and tools, and facilitated communities of practice.

Evaluation Focus

As part of the Research Alliance's ongoing evaluation of CS4All, we have been examining progress toward the initiative's goals, with a particular focus on equity in CS in NYC schools. To gauge progress, we calculated a **saturation measure** based on the percent of students in each school who had at least

one CS experience in their respective grade band. We also calculated an **equity measure** by looking at the gender and race/ethnicity of students who took CS. Using the saturation and equity measures, we then calculated an **overall progress rating** for each school and grade band in community school districts 1 through 32, and the district as a whole. For more details on this methodology and our results, please see our report, *CS4All: Examining Equity in Computer Science Access and Participation in NYC Schools*.

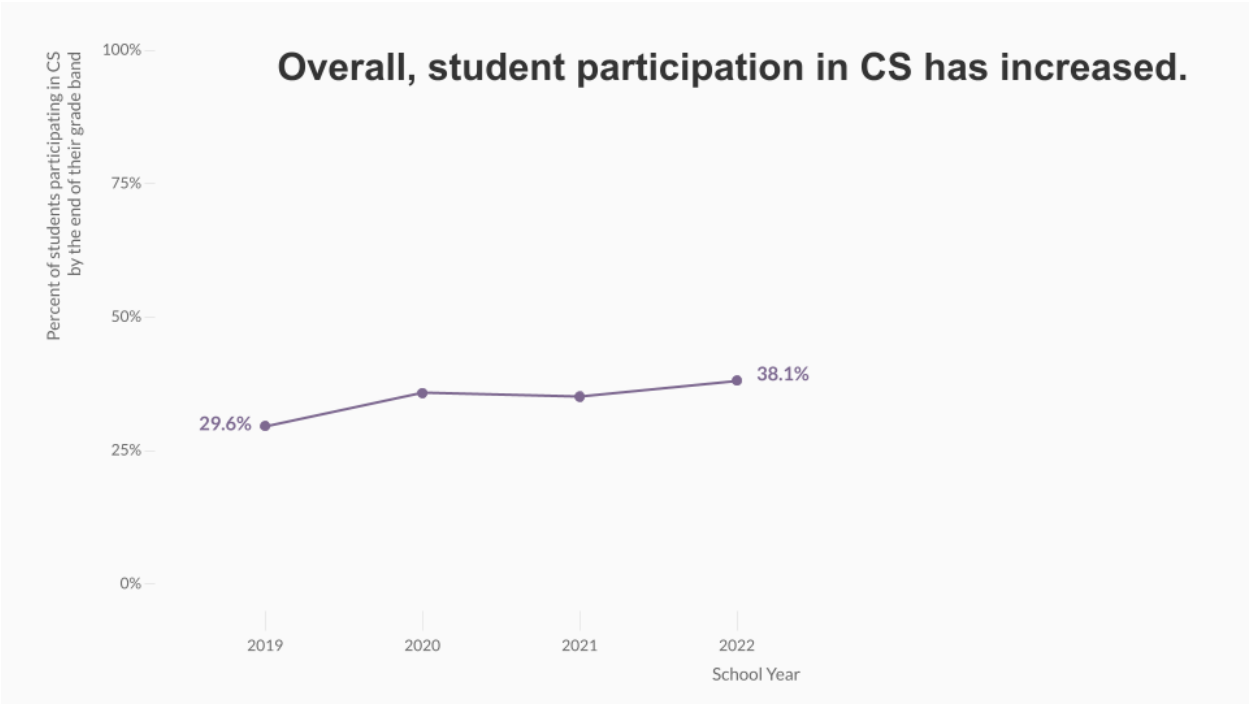
Our evaluation has also collected and analyzed data from surveys and interviews of teachers and school leaders; classroom observations; surveys, focus groups, and assessments of students; and analysis of school records data. The following findings and recommendations draw from these varied data sources.

Key Evaluation Findings

- **The initiative has reached a substantial number of teachers and schools** with professional development designed to lead to the implementation of CS.
    - By 2022, over half of the district's schools (57%) participated in CS4All curriculum PD, and 33% participated in school leader PD.[1] Most of those schools (64%) offered CS in 2022.
    - Schools that participated in PD in the early years of the initiative were just as likely to offer CS in 2022 as schools participating more recently, an encouraging sign of sustainability.
    - By 2022, a total of 2,534 teachers from districts 1-32[2] participated in PD designed to prepare them to teach CS.
- **Access to CS learning opportunities for students across K–12 has increased.**
    - Overall, from the 2018-2019 to 2021-2022 school years, the district made important progress toward the initiative's goal of all students having at least one CS experience at each grade band (k-2, 3-5, 6-8, 9-12).
    - The graph below shows the percentage of students participating in at least one CS experience by the end of their grade band starting in 2019, the first year we were able to look at data for the entire three- or four-year grade span. The graph shows steady improvement over time, with the exception of 2020 to 2021 — the year that schools were hardest hit by the pandemic. By 2022, nearly 40 percent of students had at least one CS experience by the end of their grade band.
    - By 2021-2022, most schools in NYC (92% of over 1500 schools) were offering some CS; 17 percent of schools were achieving the initiative's participation and equity goals.
    - Over this time period, we also found increases in saturation (the percentage of students the school reaches with CS) and equity (the extent to which girls, Black, and Latinx students participated at rates that were similar to their peers).

[1] CS4All provides a variety of curriculum PD to K-12 teachers ranging from 25 hours for foundational and integrated unit curriculum to 100 hours or more for more advanced curriculum. PD courses are intended to prepare teachers to implement the curriculum in their classroom. In addition CS4All provides two types of leadership PD beginning: one for CS teacher leaders, and another for school administrators. Both are designed to help school leaders develop plans to grow and sustain CS programming, including a schoolwide vision for CS and strategies to promote a positive culture and community involvement in CS.

[2] Teachers from alternative school districts (e.g., 75, 79 and 84) are not included in this count.



- **Uptake of CS4All supports is linked to stronger implementation.**
    - Schools that made greater improvements were more likely to have multiple teachers participate in CS4All PD and to have an administrator or teachers participate in the CS4All leadership PD, suggesting these experiences may have helped facilitate implementation.
    - Higher implementing schools were more likely to have a strong vision for CS at the leadership level, to make CS an instructional priority, and to implement supportive structures, such as having a CS team and a clear implementation plan (including a vision statement and a plan for evaluating progress towards goals). CS4All school leader PD and supports have facilitated development of these components.
- **Persistent disparities in CS access reflect larger structural inequities.** Schools that made greater improvement also enrolled lower percentages of Black and Latinx students on average, pointing to persistent inequities in CS access and participation not only within schools, but also across schools.
- **Preliminary findings suggest benefits from CS exposure.** Preliminary findings related to student outcomes show that early exposure to CS is associated with subsequent interest and engagement in CS. Students who took CS in elementary school were more likely to take CS in middle schools, and CUNY students who took CS in high school were more likely to major in CS in college.

Key Challenges

- As expected, **not all teachers who participate in CS4All PD ultimately implement CS**. In total, 69% of CS4All PD participants implemented CS in their classrooms at some point between 2016 and 2022, but only 35% were implementing CS in the 2021-2022 school year. The most

frequently reported challenges were: Lack of instructional time, lack of preparation time, CS classes not being scheduled or lack of time in students' schedules to take CS, and competing priorities (e.g., the need to prepare students for high-stakes tests). These findings suggest schools and teachers need more support to consistently offer CS instruction over the long term.

- **Progress toward the initiative's goals is uneven.**
    - Elementary schools were more likely than middle and high schools to have achieved the goals of the initiative. At the same time, high schools were more likely to show improvement from 2020 to 2023. Middle schools had the largest percentage of schools not offering CS. Gender and race/ethnicity disparities were larger at the middle and high school levels.
    - The relative success of elementary schools is related to the fact that, at this level, CS is often integrated into classes that all students take. The CS content at the elementary level may also be easier to grasp for teachers who are new to CS, compared with the more advanced content typically offered in middle and high school courses.
    - Some schools backslid in progress, serving fewer students or no longer offering CS at all. This points to challenges related to sustaining and scaling CS.

- **There are disparities in CS access and participation across schools as well as within schools.**
    - Despite districtwide increases in the percentage of students getting CS, fully half of schools were reaching only a small portion of their student enrollment with CS (i.e., less than 10 percent) by 2022, indicating that the district still has a considerable way to go toward meeting the initiative's goals.
    - Schools reaching fewer than 10 percent of their students with CS were more likely to face multiple challenges, including higher economic need, lower achievement, and less experienced staff
    - Schools that have met the initiative's goals serve fewer students who are Black or Latinx, on average, than schools that have not yet met the goal. These findings indicate persisting disparities in access to schools that offer CS.

Recommendations

Our findings point to several areas of success as well as actions needed to address persisting challenges, including building on many strategies the CS4All team already has in place.

1. **Target recruitment efforts and support to schools making the least progress toward the initiative's goals**. Despite promising improvement and progress toward the initiative's goals, there remains a substantial portion of schools that have yet to offer CS, or are only offering it to a small percentage of their enrollment. Further, progress toward CS4All's goals intersects with preexisting inequalities along lines of race/ethnicity and poverty, with schools that are more successful serving lower proportions of Black and Latinx students. Addressing these inequities requires shifting the allocation of limited resources to target those schools and districts that are the furthest behind and investing in equity-based instructional practices (such as culturally responsive-sustaining education). The CS4All team has acted on this recommendation by explicitly recruiting and prioritizing support for schools and districts that have made the least progress and implementing a set of multi-year in-depth learning experiences around equitable CS.

2. **Differentiate support strategies for schools at different stages of progress and in different contexts**. Our findings point to substantial differences in progress by grade band. Because the way CS is implemented (e.g., integrated vs. standalone courses), as well as the content covered, is very different for elementary, middle, and high schools, the challenges and factors related to school success are also different—suggesting a need for more contextually specific support strategies. Similarly, schools at different stages of progress need different types of support. Schools not offering CS, not making progress, or regressing in their progress face different contextual factors and implementation challenges—requiring different solutions—than schools that have been more successful in implementing CS to date.
3. Continue to support and build on CS4All leadership PD. Our findings suggest schools benefit from leadership PD that facilitates the development of a **schoolwide CS vision and implementation plan, alignment of CS with other initiatives and priorities**, **as well as schoolwide activities and events that increase awareness and engagement around CS**. The NYCPS should continue to invest in and build on these strategies, and encourage both administrators and teachers to participate in leadership PD. In addition, school leaders would benefit from targeted assistance aimed at making CS an instructional priority and understanding how CS can support, complement, and enhance other priorities, rather than competing against them. For example, this would include ensuring access to curricular materials and resources that integrate CS into instruction, and implementing policies and schedules that support collaborative planning time for teachers.
4. **Continue to encourage multiple teachers from each school to participate in the CS4All PD**. Our findings, and ample prior research, suggest that school reform initiatives are more successful when multiple teachers participate, allowing the development of communities of practice that foster collaboration and support and mitigate challenges due to teacher turnover. NYCPS should continue to encourage groups of at least two or three teachers from each school to participate in PD. They should also facilitate collaboration and the development of communities of practice within and across schools where educators can share best practices and problem solve around persistent implementation and sustainability challenges.
5. **Continue to emphasize the importance of early exposure to CS**. Early findings suggest that introducing CS at the elementary school level holds promise for fostering students' interest and engagement in CS, while developing a foundation of essential skills, such as problem-solving, critical thinking, and creativity, which are invaluable in any field. This early exposure may have a positive influence on students' persistence in CS while preparing them for the challenges and opportunities of the digital age.

For additional information and findings from our evaluation, please see related publications on our website. Thank you for the opportunity to provide this testimony. Please feel free to contact me at CF94@nyu.edu with any questions about our research.

Sincerely,

Cheri Fancsali, Ph.D.
Executive Director
Research Alliance for NYC Schools

Testimony Submitted by
Tom Liam Lynch, Ed.D., Vice President of Education, United Way of New York City
Oversight - The Role of Artificial Intelligence, Emerging Technology, and Computer Instruction in New York City Public Schools
September 20, 2023 at 1:00 PM

About United Way of New York City

For over 85 years, United Way of New York City (UWNYC) has worked to support low-income New Yorkers throughout the five boroughs. We partner across the business, government, non-profit and philanthropic sectors to fight for the health, education, and financial stability of every person in New York City. Our mandate is to stem the root causes of poverty and create systems-level change so that everyone can access quality education and the opportunity to lead healthy and financially secure lives.

About United Way of New York City in Education

UWNYC has a long track record of educational equity work in and with New York City communities, including via a decade-long program in the South Bronx called ReadNYC. The lasting effects of our work are visible in education policy itself. UWNYC influenced the de Blasio Administration's push for universal early childhood education; UWNYC incubated proof-of-concept community school models that continue to spread in New York City and nationally; our model for summer learning, Once Upon a Summer, served as a precursor to the City's Summer Rising program that now serves 110,000 students annually; early literacy in communities, homes, and schools, which UWNYC has championed for a decade, is echoed with frequency in the speeches of the Mayor and Chancellor alike as they overhaul the literacy curriculum in elementary schools citywide.

During the pandemic, UWNYC leveraged the ReadNYC infrastructure to provide communities with essential support, including food, health services, and access to digital devices. In addition to coordinating the delivery of 22,068 meal boxes, access to digital devices was particularly important during a citywide health crisis in which life-saving information and even public education itself all went online. UWNYC coordinated the delivery of 217 laptops and 2,500 hotspots to 26 schools in Mott Haven. Without basic devices and broadband access, children would have been left with no formal educational option at all. The impact of Covid-19 showed that digital learning starts with digital equity. UWNYC will be building upon ReadNYC to address digital equity and learning via its new program Read & Write + Code.

The Issue

Digital equity is a precondition for digital learning, including computer science and applications of artificial intelligence (AI). Covid-19 exposed more clearly what the contours of digital **in**equity look like in New York City, which has a direct implication for the future of digital learning in New York City Public Schools.

But digital equity means more than devices and Internet access. Digital equity is better considered in terms of at least three layers: digital access, digital literacy, and digital empowerment.

> **Digital access**. Do children and caregivers have digital devices and Internet? Access to sufficient devices and high-speed Internet tracks to families' socioeconomic status. Nationally, 97% of families who make over $100K have access to broadband at home, compared to 57% of families who make below $30K (Pew Research Center). During Covid-19, New York City distributed over 357K devices to families in need, but access to high-speed internet remained a barrier for many students. UWNYC worked with partners at T-Mobile to deliver 2,500 hotspots to families who had insufficient bandwidth at home.
>
> **Digital literacy and fluency**. Do children and caregivers know how to use their digital devices purposefully? Even with access to devices and the Internet, families do not necessarily have the digital literacy and fluency skills to use the devices confidently for productive learning and community betterment. Though young people are often assumed to be confident users of technology, researchers emphasize that the difference between liking YouTube videos and using technology for sophisticated learning purposes is vast (National Council of Teachers of English).
>
> **Digital empowerment**. Do children and caretakers know how the digital world works, including the risks and opportunities to their wellness? Digital technologies, including AI and algorithms, too often perpetuate and even worsen societal inequity and injustice. Compelling research argues that bias is encoded into the digital tools we use. Consider this: 83% of computing professionals identify as White or Asian, and 75% identify as male (Pew Research Center). Digital platforms, AI, and algorithms have been demonstrated to discriminate against Black and Latinx communities, and people in poverty (Algorithmic Justice League).

Unless digital equity is tackled as a precondition for digital learning, then attempts to leverage digital learning to improve educational equity runs the risk of making discrimination worse.

But there are ways to avoid such a pitfall, which are recommended below.

Recommendations

1. Invest more heavily in the integration of computer science into core content areas, especially humanities subjects like English Language Arts, to ensure computer science is truly equitably and sustainably accessible to all students.
2. Offer schools and community-based organizations more guidance and resources to bolster families' and school staff's understanding of how digital technology platforms, algorithms, and AI can negatively and positively affect communities' civic and economic opportunities, including school engagement.

3. Commission the creation of an equity-forward digital learning strategy for New York City Public Schools that does the following: (1) engages multiple stakeholders within city agencies and outside, (2) consults the latest research, and (3) draws lessons from the experiences of other education systems—both nationally and internationally.

Conclusion

In a digital world, it is insufficient to speak of equity without referring to digital equity. In a digital world, it is insufficient to speak of learning without calling it digital learning. In a digital world, it is vital that the largest school system in the country has the support and resources it needs to ensure that its children and families are prepared for the new challenges of an increasingly digital world.

Our Support

United Way of New York City supports the following resolutions introduced at today's hearing:

- Res 0742-2023: Department of Education to develop curriculum on machine learning, and adapt their current curriculum and policies to account for the safe use of generative AI.
- Res 0766-2023: Department of Education to update its CS4All initiative to increase access to CS4All professional development for educators and administrators, particularly for those in underserved schools, and to increase training for all teachers.
- Res 0767-2023: Department of Education to mandate training on generative artificial intelligence tools for all educators.

FOR THE RECORD

City Council Committees on Education and Technology
September 20th, 2023

Mouse Design League AI Innovations: Providing NYCPS students and educators with AI tools, skills, and knowledge

Good afternoon to the Committee on Technology and the Education Committee. Thank you, Madam Speaker and Madam Chairs for this opportunity to present this evening.

My name is Joshen Ayukawa, Program Manager at Mouse, a leading provider of computer science curriculum training and programming to New York City's K-12 public school students and teachers, including D75 schools.

Mouse is a nonprofit education organization based in New York City. Since our founding in 1997 and thanks to the longstanding and generous support by the New York City Council, Mouse has provided career-oriented tech education to students and educators. In the 2022-23 school year, Mouse provided computer science programming at 70 schools serving over 4,500 students in all 5 boroughs, 95% of whom are students of color, and most attend Title I schools, including at the High School for Youth and Community Development at Erasmus in District 40 and in the 2021-22 school year, MS 582 The Magnet School for Multimedia, Technology, and Urban Planning in District 34. This year, Mouse is delivering AI, machine learning, and neural networks training to New York City public school students and educators.

Mouse prepares students to embrace technology education—for their own career advancement, and to ensure that future technology systems are inclusive and representative of our society. Design League, Mouse's core program, delivers advanced tech and computational thinking skills, accelerated SEL growth, training in design thinking, and connections to meaningful careers in tech.

In Design League, Mouse provides teacher training in professional software and tenets of design thinking. Once trained, teachers support collaborating teams of middle and high school students in the development of an original app designed to solve problems in their community. Addressing issues like: improving student mental health, promoting sustainability, or enhancing community engagement, students leverage design thinking principles and UX/UI skills to tackle problems they are passionate about.

A central focus of Design League is career-connected learning. Students learn essential tech career skills like problem-solving, team collaboration, and user feedback. Students also develop year-long mentor relationships with New York City tech industry professionals, who coach students and provide constructive feedback on their work.

The program culminates in Emoti-Con, the NYC Digital Youth Media & Tech Challenge, which celebrates student achievement, honors educator involvement, and provides students with networking and learning opportunities with tech industry professionals.

Last year, Mouse introduced AI to students, and this year, Mouse is putting AI at the center of the program. Understanding AI is essential to our students' success. **Students and educators deserve to know what AI is, how it works, how to use it safely, and how this knowledge can transform teaching and learning. That is exactly what Mouse is doing with NYC middle and high school students and teachers.**

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Mouse is teaching Design League students and educators how AI works, and how it connects to career opportunities. Starting with our educator professional development series this fall, Mouse is partnering with leaders like CUNY to train New York City Public School Design League educators to deliver a 3-part module in AI technology for their students:

- First, learning the frameworks for AI and machine learning. In other words, introducing the concept of data in, performing a task, and data out.
- Second, applying paper-based activities so students can use non-digital tools to make meaning of these concepts.
- And third, applying higher-level digital tools to access data sets with machine learning in order to understand how quality data can impact performance.

Additionally, all Design League students are using Adobe, Google, and Figma products in the course, and learning how AI plugins facilitate an accelerated pathway for adoption. Mouse is grateful to work with leading tech corporations across New York City to implement these innovations. These AI integrations help students with no coding or computer science experience make the leap to advanced application of tools, so that their ideas can be fully realized with AI. Mouse trains and coaches teachers to navigate the intersection of AI with design thinking, UX/UI, and app creation skills. Mouse recommends pursuing AI for uses other than generating text for assignments.

Mouse is grateful for our longstanding partnership with the CS4All Initiative and NYC Public Schools, for their support to lead computer science training and implement the Design League program. We are grateful to continue to support CS4All Initiative's growth into the field of AI and machine learning education. Mouse fully supports the three resolutions under consideration today.

Thank you so much for your time and attention.

For any questions or follow-up, please reach out to:

- Danny Shapiro, Senior Director of Program Strategy and Impact, danny.shapiro@mouse.org
- Larry Lieberman, CEO, larry@mouse.org

Hearing Testimony: The Role of Artificial Intelligence, Emerging Technology, and Computer Instruction in New York City Public Schools
September 20, 2023

Esteemed members of the City Council, distinguished colleagues, and concerned citizens,

I stand before you as a father of a NYC Public School student, as a member of District 30 Community Education Council, and as the executive leader of All Star Code, a national computer science education nonprofit with a mission to create economic opportunity by preparing a new generation of boys and young men of color with an entrepreneurial mindset, skills, and tools to succeed in a technological world.

This past summer, we had the privilege of teaching artificial intelligence to a group of 300 high school students in our flagship Summer Intensive Program, introducing generative AI models, what AI can and cannot do, and how AI should be used for good, including responsible use to enhance learning their daily lives.

Through this experience, we witnessed firsthand the transformative potential of AI and emerging technologies in the hands of our youth. These tools are not just about machines; they're about amplifying dreams, aspirations, and the inherent potential within every student.

Integrating AI, emerging technology, and computer instruction in public schools equips our students with essential skills and knowledge for the digital age. We know as technology continues to evolve at an unprecedented pace, proficiency in these domains becomes crucial for future academic and professional success. By providing access to these resources early on, we empower our students to navigate the technological landscape effectively.

We also acknowledge a pressing concern: the lack of diversity and equity in the data that underpins machine learning algorithms. As I was recently quoted, the promise of robots, AI, and advanced tech is to bring us, the humans, closer to

simplicity, intelligence, and abundance in our daily lives. However, much of the data used to train these algorithms fall short, perpetuating racial bias and inequity. This has a disproportionate impact on communities of color. We must address this concern head on; turning it into a core design principle for future system wide implementation.

In conclusion, promoting the prominent role of AI, Emerging Technology, and Computer Instruction in our public schools is an investment in a more equitable, innovative, and prosperous future. Let us ensure that every student has access to the tools and knowledge they need to succeed in this fast-paced, technology-driven world. Thank you for your consideration and dedication to a brighter tomorrow for all.

Danny Rojas

HUNTER
THE SCHOOL OF EDUCATION

The Role of Artificial Intelligence, Emerging Technology, and Computer Instruction in New York City Public Schools

September 20, 2023

1) Good afternoon Chair Gutiérrez and members of the Technology and Education Committee. My name is Dr. Rhonda Bondie; I am an associate professor in special education at Hunter College and the director of the Hunter College Learning Lab.

2) Thank you for this opportunity to discuss the Role of Artificial Intelligence, Emerging Technology, and Computer Instruction in New York City Public Schools.

3) Prior to joining Hunter's faculty, I was a lecturer and researcher at the Harvard Graduate School of Education examining teacher learning through new technologies. I am glad to be back in New York City where I began my teaching career in 1987 as an artist in residence in 18 of New York City's 32 school districts. I became a special educator and taught in K-12 schools for 23 years before transitioning to teacher education. New York City Public Schools are like a magnet for my heart, I am drawn toward the students and teachers and energized by their learning.

4) In this testimony, I argue that for emerging technologies to have a meaningful role in the New York City Public Schools, we will need career-long computer integrated teacher education. Bodies such as this council could support coordination and prioritizing a system wide career long approach involving CUNY's teacher education programs and ongoing professional learning for practicing educators in New York City Schools.

5) Open access to AI tools has sparked debates regarding possible impacts on learning and all school activities. While this feels new, we have had experiences like this before. When I started teaching in the Bronx, new technologies, such as computers and video disc players followed a slow expected evolution; we literally had years to prepare. However, when I was teaching in a school district just outside of Washington, DC - an extraordinary event happened - the Internet became widely available. In response to this new technology, Harvard Graduate School of Education offered one of the first online courses for classroom teachers. Teachers from around the world were invited to engage in this new form of professional learning and fortunately, I was one of them. I received by US mail a CD with videos of lectures and a printed textbook for the online course. I studied the materials and then engaged in online discussion boards using dial-up Internet. Learning through this new technology opened up the world to me and

had an indelible impact on my teaching. Over a sustained period of three months, I interacted almost daily with teachers who lived all over the world and learned about their students, curriculum, challenges, and joys. Learning in this new context prompted me to think deeply about myself and my teaching and equipped me to not only use, but also lead technology initiatives. Similar to that first online course, **New York City must provide all educators with computer integrated professional learning that nurtures individual interests and builds career-long capacities for engaging with new technologies as leaders, critical consumers, and creators.**

But, choices in a catalog of professional development isn't enough, communities need to debate and develop strategic plans that include new technologies. For example, the Internet brought all stakeholders into exploring questions such as: Should students have email?, How would families access communication?, What computer skills did students need?, and How would we find time?. Teachers urgently needed core technical skills and collaborative time to develop new teaching methods and curriculum. Families needed technology learning opportunities, too. **When determining how the Internet would change daily school life, stakeholders didn't agree. Simple solutions were not available. We had to create vehicles that supported school communities in collaboration and imagining education in completely new ways. We are fortunate to already have one such vehicle in place through CUNY's Computer Integrated Teacher Education (CITE) program.**

6) CITE currently serves CUNY faculty and New York City Public Schools teachers. Along with more than 200 CUNY faculty, I participated in the CITE 2023 summer professional development. Through the program, we explored our values, learned technical skills, reimagined teacher learning in our courses, and collaborated to build strategic program plans. We used the opportunity to think about AI and emerging technologies with our culturally, linguistically, and ability diverse learners, given technologies are not always designed with or for all learners.

I applied my learning to continue refining an AI powered classroom, called *Teaching with Grace*, that I developed through support from the Reach Every Reader and CUNY's CITE initiatives. *Teaching with Grace* uses machine learning and large language models to enable educators to develop teaching skills in an open-source data-rich consequence-free virtual classroom environment with personalized support. *Teacher with Grace* is open-source software developed by me, real classroom teacher. We can use emerging tools to create new forms of professional learning.

7) Our policies can promote innovations and research in teacher education. We know that the traditional one-size-fits all approach for professional learning for educators has

resulted in limited impact on teacher and student learning (Bondie et al., in press, Garet et al., 2007; Kennedy, 2016; Yoon et al., 2007). CUNY could use additional support to explore ways that AI and other emerging technologies can help meet diverse teachers needs and help future teachers meet the diverse needs of their students. Generally, research supports three key components of effective educator professional learning, tending to: 1. motivation, 2. intellectual challenge, and 3. feelings of meaning (Kennedy, 2016). These components are also relevant for our P-12 students. Now is the time for us to explore new approaches for teaching and learning adult learners.

8) I urge you to prioritize contemporary innovative approaches to teacher education and research as exemplified through the CITE initiative. Your support will enable New York City to build a system of career-long computer integrated teacher education that positions teachers and their students as leaders and innovators of new technologies.

9) I am deeply grateful for your time and the opportunity to share my experiences. I look forward to your questions and of course, if you are interested in trying out AI powered practice to develop teaching expertise then contact me to explore *Teaching with Grace*.

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September 21, 2023

This testimony is in response to the hearing held by the Committee on Technology and the Committee on Education, focused on AI and Emerging Technology in NYC Public Schools on September 20, 2023.

My name is Hally Thornton, I'm a resident of Brooklyn, and I am testifying on behalf of Fight for the Future in support of banning facial recognition and electronic monitoring software in schools – two forms of technology that are automated and at times AI-driven. Experts have found that this tech is incredibly invasive and disproportionately harmful to students with disabilities as well as students of color and other marginalized students. We urge New York City to take immediate action to protect students from discriminatory AI-driven facial recognition and monitoring software, as well as all other forms of discriminatory tech.

Fight for the Future is a digital rights organization with over 2.5 million members nationwide, including over 85,000 in New York City.

At Fight, we believe facial recognition is more like biological weapons than it is like alcohol or tobacco. It poses such a threat to safety and the future of liberty that it cannot be effectively regulated. It must be banned.

A team of experts at the University of Michigan published a report on the effects – and potential effects – of facial recognition in schools and concluded unequivocally that the technology should be banned. The researchers found the technology is racist, brings state surveillance into the classroom, punishes nonconformity, allows companies to profit from children's personal data, and is inaccurate.

A recent report conducted by the state of New York similarly highlights significant risks associated with the use of facial recognition technology in schools.

We are especially concerned about the consequences of facial recognition on the development and expression of students' identities and political views at such a critical time in their lives. A slew of research has demonstrated the chilling effect on speech and other fundamental freedoms produced by facial recognition and other forms of surveillance technology.

Equally concerning is this report that found that school districts across the country are using eproctoring tools and artificial intelligence surveillance tools that allow school officials and police to track everything kids and teens are saying and doing both inside and outside of school.

Software like Gaggle, GoGuardian, Proctorio, ExamSoft, Securly, and Bark isn't just unfair and discriminatory, it makes students less safe. Due to systemic bias, inefficacy at preventing cheating, negative impacts on mental health and testing performance, and dangerous data collection and storage practices, we strongly opposed the use of eproctoring technology and other student monitoring technology.

More research from the Center for Democracy and Technology “highlights how technologies such as online monitoring and content filtering and blocking software are increasing students’ encounters with law enforcement and other disciplinary actions — often resulting in disparate impacts on the basis of race, sex, and disability.”

We urge the City Council to freeze any funds allocated for purchasing products or services that include discriminatory edtech tools like facial recognition and eproctoring and immediately investigate the harms to students. We also urge the Council to continue to be in conversation with the organizations and advocates researching the civil rights and racial justice implications of AI and other emerging forms of technology in schools.

Testimony on The Role of Artificial Intelligence, Emerging Technology, and Computer Instruction in New York City Public Schools

- **Res 742** - *By Council Members Abreu, Joseph, Gutiérrez and Farías* - Resolution calling on the New York City Department of Education to develop curriculum on machine learning, and adapt their current curriculum and policies to account for the safe use of generative AI.
- **Res 766** - *By Council Members Joseph, Powers, Gutierrez, Abreu, Stevens, Louis and Schulman (by request of the Manhattan Borough President)* – Resolution calling on the New York City Department of Education to update its CS4All initiative to increase access to CS4All professional development for educators and administrators, particularly for those in underserved schools, and to increase training for all teachers.
- **Res 767** - *By Council Members Joseph, Powers, Gutierrez, Abreu and Schulman (by request of the Manhattan Borough President)* - Resolution calling on the New York City Department of Education to mandate training on generative artificial intelligence tools, including for potential classroom implementation, for all educators.

Wednesday, September 20th
1pm in New York City Hall

Good afternoon, members of the New York City Council.

My name is Dr. Thomas Gilbert, I have a PhD in Machine Ethics and Epistemology from the University of California, Berkeley. I now work as a consultant on AI & Society at the New York Academy of Sciences.

The ability of Generative AI chatbots like ChatGPT to produce valuable content is already transforming how students learn. Completing course assignments is being reduced to prompt engineering, of getting an AI model to do one's bidding. Meanwhile we hear about the biases of AI, its existential risks to civilization or to the most vulnerable, and the urgent need to align AI with human values.

In the face of these challenges, our schools are asking whether or how chatbots should be used. Should they be banned? If not, how should teachers assess students' work? What responsibilities do administrators have in this transition?

These are important questions. But as Jane Jacobs warned us, "Credentialing, not education, has become the primary business of North American [schools]." Abstract concerns about the biases and risks of AI models ignore the material anxiety schools face: what is the value of the degree we confer?

What is at stake here is not generative AI, but generative education. The purpose of education is to facilitate the transition from adolescence to adulthood, to empower the vulnerable with skills, and preserve human civilization. We might ask a different question: are the challenges AI poses to schools in the context of Resolutions 742, 766, and 767 also an opportunity to re-articulate the aims of education itself?

Taking up this challenge, the New York Academy of Sciences is launching a new program this fall on the theme of "Generating New Relationships Between AI and Education". Drawing on our deep ties to both leading AI professionals and the academic institutions of New York City, our goal will be to facilitate discussion on generative AI as the value of education is transformed.

As Manhattan Borough President Mark Levine said, "Our city is home to the second largest concentration of AI companies in the nation, a large academic research community, a thriving startup sector, and an estimated 40,000 AI professionals. This gives us the ability and responsibility to influence the direction of the field and the ways society manages it."

I invite students, parents, teachers, administrators, and citizens to join us on this journey and help generate a new articulation of the aims of AI and education in tandem.

To echo the words of our former Vice President Margaret Mead, "We are now at a point where we must educate our children in what no one knew yesterday, and prepare our schools for what no one knows yet."

Thank you for your attention.

Dr. Thomas Krendl Gilbert
Consultant on AI & Society, New York Academy of Sciences
tgilbert@nyas.org
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Testimony of Class Size Matters and the Parent Coalition for Student Privacy before the Technology and Education Committees of the NYC Council

Sept. 20, 2023

Thank you to Chair Guttierez and Chair Joseph for holding these important oversight hearings today.

My name is Leonie Haimson; I'm the Executive Director of Class Size and also the co-founder and national co-chair of an organization called the Parent Coalition for Student Privacy. I'll be testifying with my Associate, Michael Rance.

The Parent Coalition for Student Privacy formed in 2014 and has been invited to testify twice before Congress about the need to strengthen federal student data protections. Members of our group were also instrumental in advocating for the passage of NY State's Student Privacy Law in 2014. I am also a member of the NY State Education Department Data Privacy Advisory Committee.

We are very concerned about the decision by the NYC Department of Education to expand online learning. There is strong evidence that virtual education seriously undermines student engagement and the opportunity to learn. After expanding digital learning, Sweden found that it led to a sharp fall in basic skills and has since reversed course. According to Sweden's Karolinska Institute, "There's clear scientific evidence that digital tools impair rather than enhance student learning." [1]

A recent UNESCO report, entitled "An Ed Tech Tragedy", examines how during the pandemic the "unprecedented educational dependence on technology often resulted in unchecked exclusion, staggering inequality, inadvertent harm and the elevation of learning models that place machines and profit before people". The report also found that putting education online undermined engagement and learning outcomes the most for the most disadvantaged students, even when they had full access to the internet and whatever technologies were employed.

Indeed, as we saw, the expanded use of ed tech during the pandemic amplified and worsened the inequities of our educational systems here in NYC, in the United States, and throughout the world. As the authors of the UNESCO report explained:

"*Many of the technology-dependent learning platforms and apps adopted during the crisis made students feel as though they were anonymous and interchangeable units being directed by unprecedented levels of automation. This was especially true for asynchronous apps where learning was guided by algorithms instead of teachers. But even in more human-mediated digital learning spaces, a student's membership in a particular community, family,*

[1] https://www.theguardian.com/world/2023/sep/11/sweden-says-back-to-basics-schooling-works-on-paper

school and class was often irrelevant. Affiliations that had organized learning in physical spaces, such as age and geography, tended to melt away in the new virtual learning environments that were spaces for everyone and no one and existed everywhere and nowhere." [2]

All students need the close support and personal interaction of human beings, both their teachers and their fellow students, as education is an inherently social activity, but those who need this connection the most are those students who are struggling.

We're especially concerned about the DOE's plan to increase online learning in nearly all high schools in the next few years, which will be used with students who failed their courses and are in need of additional credits to graduate on time. These are the exact students who most need in-person and close feedback from their teachers to stay motivated and involved in the challenges they face. [3]In fact, putting struggling students on remedial ed tech programs may instead reproduce the discredited, low-quality, and rote credit recovery programs that too often have been used to artificially inflate graduation rates in New York City in the past.[4]

Our misgivings were further amplified when the DOE announced that they will be using "AI-powered teacher assistants to offer real-time feedback and answer questions from students." According to Microsoft, this AI bot has already been used in three high school computer science courses.[5] Instead of machine learning bots, our students need and deserve the smaller classes and the emotional and academic support and encouragement of their teachers to succeed. No AI teaching assistant can replace this human contact and feedback.

While delivering education through algorithms is often called "personalized", it is anything but. As the authors of the UNESCO report explained, "*While some ed-tech solutions had appealing user interfaces and carried labels like 'AI-enabled', 'smart', 'adaptable', 'agile' or 'personalized', much of the learning experiences these solutions facilitated were rote: a linear progression through machine-dispensed learning content with limited, if any, possibilities for interaction with peers and teachers*."

My other serious concern about the planned expansion of ed tech in our schools is the serious risk to privacy that this involves. By handing over instruction, assessment, and behavioral management to private companies that collect, process, market and sell student data, NYC schools are playing with fire.

The use of AI carries special dangers, and even the President of Microsoft, Brad Smith, and Sam Altman, the CEO of OpenAI, which makes ChatGPT, have called for more government regulations to better protect the risks, including to user privacy. [6] And yet the DOE is experimenting on our students with these precarious programs.

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[2] UNESCO report here: https://unesdoc.unesco.org/ark:/48223/pf0000386701
NY Times article about the report; https://www.nytimes.com/2023/09/06/technology/unesco-report-remote-learning-inequity.html

[3] https://www.nytimes.com/2018/01/19/business/online-courses-are-harming-the-students-who-need-the-most-help.html

[4]https://www.nydailynews.com/2013/09/24/critics-blast-credit-recovery-as-city-data-reveals-frequent-use-by-public-high-school-students/ https://nypost.com/2018/12/08/some-nyc-schools-using-controversial-credit-recovery-to-boost-grad-rates/

[5] https://news.microsoft.com/source/features/digital-transformation/how-nyc-public-schools-invited-ai-into-its-classrooms/ https://www.cityandstateny.com/policy/2023/09/after-initially-shunning-artificial-intelligence-nyc-schools-partner-microsoft-ai-teaching-assistant/390292/

[6] https://www.nytimes.com/2023/05/25/technology/microsoft-ai-rules-regulation.html

Already there have been too many serious DOE breaches of personal student information over the last few years, ranging from data found on unsecured Google Drives, to the massive Illuminate breach that exposed the personal and sensitive data of nearly one million students, to the recent MoveIt breach, in which hackers were able to access the information about 40,000 students and approximately 170,000 DOE staff and third-party evaluators. [7]

Moreover, a comprehensive analysis of school technology practices by Internet Safety Labs released in June 2023 found that 96 percent of the ed tech apps they analyzed share information with third parties or contain ads.[8]

As the UNESCO report pointed out about the use of ed tech during the pandemic, *"Around the world, students and their families signed away their privacy and submitted to new extremes of surveillance and control in order to pursue education in digital environments. This was an affront to the right to education, a human right intended to expand and reinforce other rights, including the right to privacy and to freedom of opinion and expression."*

As it is, the DOE has failed to comply with the New York State student privacy law, Ed Law 2d, which was passed in 2014.[9] Every single vendor that has access to student data is legally required by this law to have a contract as well as a privacy addendum called the Parent Bill of Rights (PBOR), specifying how the data will be used and protected, and each of the PBORs are supposed to be posted on the DOE website. Yet we have been told that neither GoGuardian, a computer surveillance system used by many schools, nor MoveIt, the program that recently breached, had any contract with DOE.

Of those companies that do have PBORs posted online, those agreements do not bar the sale or commercialization of student data, have extremely weak to nonexistent data minimization and deletion clauses, and many do not even require basic security protections, such as the encryption of personal student data at all times. [10] All of these are requirements of Ed Law 2d. Some examples:

- The DOE has two current contracts with the College Board, one for the administration of the AP and one for the PSAT/SAT, which was only recently posted. Yet the PSAT/SAT doesn't specify any date by when the personal student data will be deleted. The PBOR for the AP says that the data will be deleted only "***when all NYC DOE schools and/or offices cease using College Board's products/services***". [11]

- Both PBORs also say that the company itself, along with its subcontractors and others with whom it shares data, will NOT encrypt the data "***where data cannot reasonably be encrypted***"; contrary to the law which requires encryption at all times, in rest and in transit, and at a fairly high level as specified by NIST, or the National Institute of Standards and Technology.

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[7] https://www.schools.nyc.gov/about-us/policies/data-privacy-and-security-policies/data-security-incidents
[8] https://internetsafetylabs.org/wp-content/uploads/2023/06/2022-K12-Edtech-Safety-Benchmark-Findings-Report-2.pdf
[9] https://studentprivacymatters.org/wp-content/uploads/2016/06/NYS-student-privacy-law-section-2-D.pdf; the regulations for this law are posted here: https://www.nysed.gov/sites/default/files/programs/data-privacy-security/part-121.pdf
[10] https://www.schools.nyc.gov/about-us/policies/data-privacy-and-security-policies/supplemental-information-for-parents-about-doe-agreements-with-outside-entities
[11] https://www.schools.nyc.gov/about-us/policies/data-privacy-and-security-policies/supplemental-information-for-parents-about-doe-agreements-with-outside-entities/vendors-a-h

- Worst of all, the College Board has been shown to sell student data, including test score ranges, as part of its Student search program, for over $100 million per year.[12] And yet there is no prohibition against this practice in either of the PBORs, posted on the DOE website. While the State Attorney General office has apparently been engaged in negotiations for nearly a year with College Board to urge them to halt this illegal practice, the DOE should have put its foot down and required a halt to the sale of student data in its contracts and PBORs. [13]

- The DOE also recently posted a new PBOR for 17 privacy-invasive programs sold and marketed by PowerSchool, which will have access to a huge range of extremely sensitive personal student and teacher data.[14] One of the programs is Naviance, a college and career counseling program that profits by selling ad space within its student-facing platform to colleges, disguised as objective recommendations. Moreover, it has been shown that Naviance also allows these colleges to target ads to students based on their race, including targeting ads only to white students. [15]

- The just-recently posted PBOR for Naviance and these other data-hungry PowerBook products state that The company will "*Review data security and privacy policy and practices to ensure they are in conformance with all applicable federal, state, and local laws & the terms of this DSPP [Data Security Privacy Plan]…. In the event Processor's policy and practices are not in conformance, Processor will implement commercially reasonable efforts to ensure such compliance."[emphasis added]*

- In other words, PowerSchool will only comply with federal and state privacy laws and their privacy agreement with DOE when they feel it won't unduly affect their bottom line. This is unacceptable.

Other ways in which the DOE fails to comply with Ed Law 2D and continues to allow vendors to put at risk sensitive student data is described in a presentation we delivered to the Community Education Council District 15 last evening. [16] Until the DOE requires all its vendors to fully comply with the state law and ensures that the privacy and security of student data are rigorously protected, no further expansion of the use of ed tech and online learning should be contemplated.

Thank you for the opportunity to testify to you today.

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[12] https://www.wsj.com/articles/for-sale-sat-takers-names-colleges-buy-student-data-and-boost-exclusivity-11572976621

[13] On July 26, 2023, the Panel for Educational Policy approved a five-year DOE contract for $18,152,000 with the College Board for the PSAT/SAT assessments and associated materials. In the Request for Authorization, under Vendor Responsibility it says: "*In October 2022, the NYAG's requested information from College Board to assess its compliance with Education Law section 2-D and information relating to its financial aid products. College Board advised that the matters are on-going and continues to cooperate with NYAG.*" Why the DOE did not ask the NYAG office for their view of the matter under discussions is unknown.

[14] https://www.schools.nyc.gov/about-us/policies/data-privacy-and-security-policies/supplemental-information-for-parents-about-doe-agreements-with-outside-entities/vendors-i-q

[15] https://themarkup.org/machine-learning/2022/01/13/college-prep-software-naviance-is-selling-advertising-access-to-millions-of-students

[16] https://classsizematters.org/wp-content/uploads/2023/09/NYC-privacy-issues-updated-9.19.23-final.pdf

Concerns with DOE data privacy/security practices and adherence to NYS Student privacy law

Presentation to CEC 15

Leonie Haimson

Executive Director, Class Size Mattes

Co-chair, Parent Coalition for Student Privacy

9/19/23

inBloom controversy led to nearly 100 state student privacy laws being passed including NYS Ed Law §2-d in 2014

- inBloom Inc. launched in February 2013 with more than $100M in Gates Foundation funds, designed to collect and process the personal data of millions of public-school students in 9 states and districts, including NY, and share it with for-profit vendors to build their ed tech tools around.

- Many parents, educators and district leaders protested & every state and district pulled out. NY pulled out when Legislature banned this disclosure in March 2014, and in April 2014, inBloom closed its doors.

- Parents nationwide who had protested inBloom formed the Parent Coalition for Student Privacy in July 2014, having learned how weak federal laws were in protecting student data.

- In 2014, 24 new state student privacy laws were passed in 2014 including in NY; 77 more laws in in 2015 - 2017.

- NYS Legislature passed Ed Law §2-d in March 2014; after much delay, SED finalized the regulations to enforce the law in January 2020.

What does NY student privacy Ed Law §2-d say?

- Every vendor with access to student PII must have a contract with a Parent Bill of Rights (PBOR) that establishes how that data will be protected & these PBORs must be posted on the district website
- Student personally identifiable information (PII) must be encrypted at all times at a high level of encryption (***NIST for National Institute of Standards and Technology***)
- Student PII cannot be sold or used for marketing or commercial purposes
- Vendor access to PII must be minimized & deleted when no longer needed to carry out contracted services
- Parents must be told how they can access their children's data held by the vendor & challenge it if inaccurate
- Specific notifications required of vendors & districts w/ families to be informed within 60 days of districts becoming aware of a breach
- Vendors can be penalized financially by the state if they don't comply with law &/or barred from future contracts

SCI has repeatedly urged DOE to institute more privacy-protective measures

- Special Commissioner of Investigation for NYC Schools has repeatedly urged the DOE to establish more privacy protective policies and practices in its formal Policy and Procedure Recommendations (PPRs)

- To prohibit school staff or CBO employees from contacting students using their personal cellphone numbers, social media accounts, and other associated applications, which DOE has refused to do .

- To stop allowing schools to use free products and services, until vetted by trained personnel for privacy/security protections. State law requires this but DOE only starting this recently and very unevenly.

- SCI also noted how after a student data breach occurred in Aug. 2020, they urged DOE to tell staff to stop using unprotected Google drives to store PII; DOE said they would do so but didn't -- and additional breaches from Google drives occurred in January 2021 and March 2021, as a result of the same practice.

- In Jan. 2022 , DOE sent a letter to the SCI, noting that two of its "*most significant corruption hazards [were] in the following areas: (1) the procurement, distribution and safeguarding of air purifiers and (2) data security*"

State Comptroller audit in May 2023

- State Comptroller audit found that 80% of DOE cybersecurity incident reports lacked enough detail to tell if students and teachers were informed within the legally required 60-day timeline.

- In more than half of incidents, the city blew past the legal deadline to notify the state of the problem.

- And yet DOE determined to expand the use of ed tech and online learning in schools throughout the city, multiplying risk of more data breaches, including AI bots.

Some DOE vendors with access to student data have no posted Parent Bill of Rights

- Parent Bill of Rights are supposed to be posted on the DOE webpage **Supplemental Information for Parents About DOE Agreements With Outside Entities**

- Yet some have NO contracts or PBORs: Go Guardian is a surveillance/spyware program installed on student computers; can spy into student homes without their knowledge if not properly configured.

- When PEP members asked to see the GoGuardian contract, DOE said there none, but they "***make this product available to all schools through the Enterprise G-Suite/Google Workspace license at no cost to school nor to families,"*** in apparent evasion of the law**.**

- No PBOR posted for **ANY Google product**, including Google Workspace, Google classroom, G-suite for Education, or now renamed Google's Education Fundamentals --

- Other DOE vendors with access to student data, have NO contracts with DOE to this day, including MoveIt, that recently suffered a major breach.

Other ways in which DOE fails to comply with student privacy law

- DOE has not UPDATED the Chancellors regs regarding student privacy since 2009 – though new law passed in 2014
- When there a PBOR is posted, it very rarely is fully compliant with the law .
- Data minimization & deletion rarely occur, and most PBORs posted by DOE do not require this
- Result: Illuminate and MoveIt breaches exposed data from thousands of NYC students who had long graduated and left the system.
- Illuminate contract hinted at fact that data was not encrypted & though it called for independent security audits, it appears that DOE *never* asked for them

College Board – a known violator of state student privacy law

- College Board sells personal student data, including test scores, and its PBORs do not prohibit this practice though it violates the law.

- CB PBOR also says the company, its subcontractors and others with whom it shares this data will NOT encrypt student data "*where data cannot reasonably be encrypted*"

- PBOR for AP exam says it will delete the data only "***when all NYC DOE schools and/or offices cease using College Board's products/services***".

- For the just-posted SAT/PSAT, the PBOR contains no specific date or time when the data will be deleted.

- CB supposedly in negotiations with NY AG office to halt its illegal practices, but DOE just signed a new CB contract with a PBOR that is non-compliant with the law

Naviance: another program widely used by NYC schools that commercializes student data

- Naviance, a college and career planning program, had no PBOR posted until last week, though DOE has paid $1.7M on Naviance since 2020.

- Naviance, now owned by PowerBook, collects huge amount of personal student data & profits by selling ad space within its student-facing platform to colleges, disguised as objective recommendations

- Naviance allows colleges to target ads to students by their race, including targeting ads only to white students.

- NEW DOE PBOR for Naviance and 16 other data-hungry PowerBook products say this: The company will "*Review data security and privacy policy and practices to ensure they are in conformance with all applicable federal, state, and local laws & the terms of this DSPP [Data Security Privacy Plan]....* *In the event Processor's policy and practices are not in conformance, Processor will implement commercially reasonable efforts to ensure such compliance*."

- In other words, PowerSchool will only comply with federal and state privacy laws & even the contract itself when they feel it won't unduly affect their bottom line.

This deficient PBOR now pertains to 17 different privacy-invasive PowerSchool programs –with additional programs added daily. A sample:

- Student data: *Naviance, Enrollment, Enrollment Express, Performance Matters Advanced Reporting; Performance Matters Assessment;* and *PowerSchool SIS*

- Student and teacher data: *Unified Talent Employee Records; Unified Classroom Schoology Learning; Unified Classroom Curriculum and Instruction*

- Special education data: *Unified Classroom Special Programs ;* SEL and behavior data: *Unified Classroom Behavior Support*
- ***Plus six more!***

What should DOE contracts/PBORs require?

- No vendor should be able to access ANY student data without a legally-compliant contract and a PBOR posted on the DOE website.

- Contracts/PBORs should specify what data elements can be accessed by the vendor and for what specific purposes; too often DOE has no idea what data is being collected and transmitted by their vendors.

- Contracts/PBORs should require strong encryption (NIST) level & independent privacy & security audits -- and DOE should ask for those audits!

- Contracts/PBORs should require AT MINIMUM that the vendor delete the data when students graduate or move out of district, and optimally at the end of every school year.

- Contracts/PBORs need to clearly prohibit the sale or the commercial, marketing use of student data under all conditions.

NYC Comptroller has a role to play as well

- NYC Comptroller has the authority to refuse to certify any DOE contract that doesn't comply with the law, and he should do so in the case of vendors with access to personal student data.

- He should also audit already certified NYC DOE contracts with vendors, to see that those with access to student PII include PBORs that fully comply with the law, and that these PBORs are posted on the DOE website;

- He should also use his bully pulpit to propose what changes are needed in the state law, enforcement or policy to ensure that personal student data is better secured and protected from breaches, commercial use, or abuse.

NYC chapter of Parent Coalition for Student Privacy

- *We are looking for NYC parents interested in these issues to help us advocate for stronger student data privacy and security.*

- *If you have questions or are interested in joining us, please email us at: info@studentprivacymatters.org thanks!*

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Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Rachel Neches

Address: _____

I represent: Center for an Urban Future

Address: _____

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I intend to appear and speak on Int. No. T2023-3908 Res. No. 0742-2023

☐ in favor ☐ in opposition

of Overnight

Date: 9/20/2023

(PLEASE PRINT)

Name: Donalda Chumney

Address: Livingston St. Brooklyn, NY

I represent: Community Education Council, District 15, Brooklyn

Address: 131 Livingston St. 3rd fl. 11201

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☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Danny Kota?

Address: 80th St Flushing NY 11372

I represent: All Star Code

Address: 276 5th ave

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Date: _____

(PLEASE PRINT)

Name: Scott Strickland

Address: _____

I represent: DOE DIIT

Address: _____

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THE CITY OF NEW YORK

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I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Demond Waters

Address: Chief Information Security Offrer

I represent: NYCPS / DOE

Address: _____

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☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: _____

Address: _____

I represent: _____

Address: _____

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☐ in favor ☐ in opposition

Date: 9/20/2023

(PLEASE PRINT)

Name: ZEESHAN ANWAR

Address: _____

I represent: NYC Public Schools

Address: _____

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Appearance Card

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☐ in favor ☐ in opposition

Date: 9/20/2023

(PLEASE PRINT)

Name: Johel Placencia

Address: _____

I represent: NYC Public Schools

Address: _____

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Appearance Card

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☐ in favor ☐ in opposition

Date: 9/20/2023

(PLEASE PRINT)

Name: Anuraag Sharma

Address: Chief information Officer

I represent: NYC PS

Address: _____

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Appearance Card

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☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Dennis Doyle, CPO NYCPS

Address: _____

I represent: NYCPS

Address: _____

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Appearance Card

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☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Melanie Mac, Sr. Exec. Director, Office of Student Pathways

Address: NYC Public Schools

I represent: _____

Address: _____

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Appearance Card

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☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Tara Carriozza

Address: _____

I represent: Dir. Digital Learning & Innovation NYCPS

Address: _____

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Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. 766, 767, 742

☑ in favor ☐ in opposition

Date: 9/20/2023

(PLEASE PRINT)

Name: MARK LEVINE, MANHATTAN BOROUGH PRESIDENT

Address: 1 CENTRE STREET, 19TH FLOOR, NEW YORK, NY 10007

I represent: _____

Address: _____

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 0946 Res. No. 1

☑ in favor ☐ in opposition

Date: 9/15/2023

(PLEASE PRINT)

Name: Jamie Samuels

Address: _____

I represent: Tech:NYC

Address: _____

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Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 9/20/23

(PLEASE PRINT)

Name: Scott Strickland

Address: _____

I represent: DIIT

Address: _____

Please complete this card and return to the Sergeant-at-Arms

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Demond Waters

Address: _____

I represent: OCE / NYCPS

Address: _____

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Dennis Doyle, CPO NYCPS

Address: _____

I represent: NYCPS

Address: _____

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Appearance Card

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☐ in favor ☐ in opposition

Date: 9/20/23

(PLEASE PRINT)

Name: Joshen Ayukawa

Address: 25 Broadway 12th Floor

I represent: Mouse

Address: 25 Broadway 12th Floor

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☐ in favor ☐ in opposition

Date: 9/20/23

(PLEASE PRINT)

Name: Gemelli Bricetto

Address: 25 Broadway

I represent: House

Address: 25 Broadway, 12th FL

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THE CITY OF NEW YORK

Appearance Card

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☒ in favor ☐ in opposition

Date: 9/20/23

(PLEASE PRINT)

Name: Tunisia Mitchell Pettinelli

Address: Spencer Ave, Bronx NY 10471

I represent: NYCPS - Office of Student Pathways / CSYAH

Address: 110 William Street

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. 766

☐ in favor ☐ in opposition

Date: September 20, 2023

(PLEASE PRINT)

Name: Rachel Noches

Address: 573 Classon Ave

I represent: Center for an Urban Future

Address: _____

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Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 9/20/2023

(PLEASE PRINT)

Name: Dr. Thomas Kredl Gilbert

Address: W 82nd St, New York, NY 10024

I represent: New York Academy of Sciences

Address: 115 Broadway, Suite 1701, New York, NY 10006

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Melanie Mac

Address: _____

I represent: NYCPS

Address: _____

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Tara Carrozza

Address: _____

I represent: NYCPS

Address: _____

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I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Anuraag Sharma

Address: _____

I represent: NYLPS

Address: _____

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THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. 767

☑ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: DR. DARLING J. MIRAMEY

Address: CEC 3 TREASURER

I represent: self.

Address: _____

Please complete this card and return to the Sergeant-at-Arms