

NYC DOE Strategic Technology Plan case study

PROJECT

Assist the NYCDOE visualize a five-year technology plan for the largest school system in the country.

MY ROLE

- Conduct interviews, gather strategy and project materials to establish user flow
- Work with writers and stakeholders
- Create outline
- Incorporate examples of applications built by team
- Illustrate and design technology plan

Strategic Technology Plan 2015-2020



CREATE OUTLINE

Collaborate with writers and strategists to create an outline of the plan.

Strategic priorities and related goals for 2015-2020

Integrate technology into instruction

Invest in infrastructure and devices

Focus on the user

Design and illustrate the “Integrate Technology into Instruction” section to focus on the following key areas:

- Increase access to Science, Technology, Engineering, Math (STEM) and computer science education for every New York City public school student
- Expand professional learning and collaboration opportunities for New York City educators and other school staff
- Provide additional and improved access to digital instructional materials for students with disabilities and English Language Learners

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Increase access to Science, Technology, Engineering, Math (STEM) and computer science education for every New York City public school student.

WHAT IT LOOKS LIKE

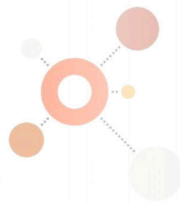
All New York City public school students have the opportunity to acquire content knowledge and skills in STEM disciplines, and graduate from high school with the ability to pursue post-secondary opportunities in STEM fields.

HOW IT WILL HAPPEN

The NYCDOE will increase the availability of training, curriculum, professional development, and other supports to expand opportunities for NYC students to develop knowledge and skills in computer science and other STEM disciplines.

Key initiatives include:

- The NYC STEM Education Framework, launched in August 2015, offers a structured approach schools can use to implement or expand STEM programming. The framework is designed to help schools develop a STEM approach that integrates well with each school's existing instructional mission and vision.
- The NYC Summer STEM program, a four-week summer learning program for NYC students completing second, seventh, and tenth grades, that focuses on students living in high-need communities. This program was piloted in Summer 2015 with philanthropic support and university partnership.
- Career and Technical Education (CTE) programs support both students' postsecondary aspirations and the City's economy. Students in CTE programs have the opportunity to learn “hands-on” career skills while earning a high school diploma. CTE in New York City prepares students for a diverse range of career and post-secondary education pathways, including technology fields such as Computer Science, Computer Systems Networking, Digital Multimedia and Communications, Digital Art & Design, and Information Technology. CTE programming is offered through 50 dedicated CTE high schools, as well as programs offered within other high schools.



- Computer Science for All, an initiative to make computer science education an integral part of the NYC public school experience over the next ten years. Through an unprecedented public-private partnership, we will invest significantly in professional development, programming, and curricular resources, and will train a projected 4,775 NYC teachers. Our vision is that all NYC students will experience at least one meaningful, high-quality computer science learning experience during each major stage of their education: elementary, middle, and high school.

Schools will have flexibility and support to develop an approach that works for their students; there will not be one, mandated curriculum. Where some schools may choose to offer computer science courses, others may choose to embed computer science skills and concepts into other subject matter. Examples of potential implementation approaches include:

- Integrate a unit of computer science into a content course or sequence of courses such as robotics, web design, physical computing, computer programming and coding, multimedia design, 3D design and fabrication, or other emerging skills and technologies.
- Offer a semester or full-year course on computer science, such as Advanced Placement Computer Science.
- Offer a multi-year sequence of computer science courses or units within technology classes, similar to the NYCDOE's Software Engineering Pilot (SEP).
- Integrate computer science into art, technology, or other classes.

WHO'S DRIVING

Division of Teaching and Learning; Division of Strategy and Policy; and the Division of Instructional and Information Technology

LEARN MORE

[Computer Science for All: Fundamentals for Our Future](#)
[NYC Summer STEM](#)
[STEM Framework](#)
[Blended Learning Institute – Computer Science Track](#)
[Software Engineering Pilot program](#)
[Bronx Academy for Software Engineering](#)
[Academy of Software Engineering](#)

WHAT IT WILL TAKE

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\$25M-\$50M

Integrate Technology into Instruction

Integrate Technology into Instruction

Design and illustrate the “Invest in infrastructure and devices” section to focus on the following key areas:

- Bring next generation broadband and wireless technologies to school buildings
- Use technology to improve the efficiency and safety of pupil transportation services
- Increase the number of computing and web-enabled devices available to students
- Increase the sustainability and efficiency of our facilities and operations
- Promote good digital citizenship and thoughtful use of social media among students and staff

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Increase the number of computing and web-enabled devices available to students.

WHAT IT LOOKS LIKE

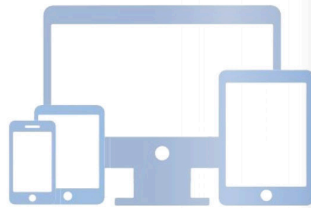
All students have consistent access to computers and other technology tools while at school.

HOW IT WILL HAPPEN

The NYCDOE will make a significant investment over five years to increase the number of devices available for student use. Additionally, lifting the prohibition on student-owned mobile phones in school offers new opportunities to expand the use of devices in learning environments.

The NYCDOE will use several new funding streams to invest in devices over the next five years:

- \$1.2 million in New York State School Technology Voucher Program (STVP) funds targeting 267 schools with documented device gaps. Each school will receive 70 licenses for a system that enables 10+ year old computers to run contemporary programs and software. In the first year and a half, STVP will fully fund these licenses. Thereafter, STVP will subsidize 50% of the program costs. Schools will receive full technical support throughout the project.
- \$7 million in technology-focused Race to the Top grants from New York State to purchase devices for approximately 160 schools integrating computer science into their curriculums and to seven persistently struggling schools.



- Investment of a portion of the funds allocated to New York City from the New York State Smart Schools Bond Act to acquire technology equipment over the next five years. This investment, with the support of other funding sources, will further the NYCDOE’s plan to deliver high-quality curriculum and coursework in computer science, and increase availability of devices for use across content areas. As of fall 2015, NYC’s Smart Schools Bond Act investment plan for classroom technology is under development.

As of March 2015, NYC schools can allow students to bring their devices to school and each school may determine its own policy on use of student devices. The NYCDOE launched an annual Bring Your Own Device (BYOD) Institute to support educators in developing policies, programs, and practices that use student devices to enrich teaching, enhance learning, and improve school culture. Through the Institute, and ongoing support via face-to-face and online opportunities, educators will learn how to start small and gradually incorporate mobile devices into meaningful interactions with students and families.

To increase and share insight into the ways schools are using devices across the city, the NYCDOE will also launch a School Technology Map that displays information about devices, infrastructure, and applications in use at each school. This map will offer information for educators, policymakers, the philanthropic community, and families to inform collaboration across schools, targeted investments in technology, and the development of policies and practices that support schools in deepening the integration of technology into instruction.

WHO’S DRIVING

Division of Instructional and Information Technology; Division of Teaching and Learning

LEARN MORE

- [New York State School Technology Voucher Program](#)
- [New York State Smart Schools Bond Act](#)
- [Chancellor’s Regulation A-413, Cell Phones and Other Electronic Devices in Schools](#)
- [NYCDOE BYOD Google Group](#)



Invest in Infrastructure & Devices

Invest in Infrastructure & Devices

Design and illustrate the “Focus on the user” section to focus on the following key areas:

- Support teaching, learning and operational excellence with NYCDOE data that is secure, appropriately accessible and of high quality
- Connect educators, families and key partners with timely relevant information about students’ academic progress
- Replace the NYCDOE website with a streamlined, mobile-first service that focuses on the information most relevant to families
- Expand proactive technical support for schools
- Improve the clarity, simplicity and accessibility of NYCDOE

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Connect educators, families, and key partners with timely, relevant information about students’ academic progress.

Focus on the User

WHAT IT LOOKS LIKE

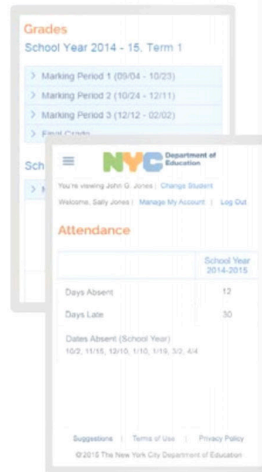
Staff, families, and where relevant, community partners will use an evolving suite of web-based tools to access, analyze, and understand student data.

HOW IT WILL HAPPEN

In a school system of our scale, there is no one-size-fits-all approach to student data. Educators, families, and community partners need to access data of various and different types—and interact with that data differently.

The NYCDOE currently supports the use of several data-collection and analysis tools; in the near future, we envision developing a comprehensive, adaptable system that can meet diverse needs and integrate seamlessly and securely with third-party tools. Individual schools will continue to be able to adopt the tools that best meet their needs for specific functions (e.g., attendance, parent communication, assessment).

- **NYC Schools**, which offers families direct access to information about their children’s progress in school, including attendance, grades, and state exam results. Information can be viewed in ten languages, and displays clearly on any type of mobile or desktop device. In the years ahead, the NYCDOE will continue to add new features and functionalities based on feedback from families.



- Two spreadsheet-based tools launched in spring 2015—the **School Performance Data Explorer** and the **Progress to Graduation Tracker**—offer educators easy-to-navigate, current data to help tailor interventions and supports for students.
- The **iLearn NYC** platform will expand to give more students access to complete online lessons and courses customized by their teachers, who in turn can interact with real-time data about their students’ progress. Participating schools (over 300 in 2015-16) receive ongoing support to develop a blended-learning vision and familiarity with online systems, as well as opportunities for professional learning.
- Beginning in the 2015-16 school year, **128 NYC Community Schools** will adopt a suite of secure, web-based tools that facilitate data analysis and web-based collaboration by school staff and community-based organization partners. These tools, which are based on Google Apps for Education and Tableau, present real-time academic, attendance, and other data in a format designed to facilitate action-planning and timely intervention. Community Schools receive training and support to help them integrate these tools into their day-to-day work.

As with any data tool used by the NYCDOE, student data shared with partner organizations is governed by formal data-sharing agreements, and all applicable laws and regulations.

WHO'S DRIVING

Division of Teaching and Learning; Division of Instructional and Information Technology; Division of Strategy and Policy

LEARN MORE

[Press Release: Chancellor Fariña Announces New School Data Tracking Tools to Drive School Improvement and Increase Accountability](#)

[iZone NYC](#)

[Community Schools Initiative Overview](#)

[Google Apps for Education at the NYCDOE](#)

WHAT IT WILL TAKE

\$\$\$
\$25M-\$50M

Focus on the User

OUTCOME

The new technology plan supports the mission and vision of the New York City Department of Education which promotes strong family-ties, a supportive environment, trust and collaboration between parents, educators, school communities and external stakeholders to improve student achievement throughout their school career.

