



Case Study
 Chicago Public Schools
 Chicago, Illinois

Chicago Public Schools Integrate Technology with Help from the Intel® Teach Program

How Chicago Public Schools, a large urban school district, is meeting the challenge of fully and effectively integrating technology into teaching and learning

“Even though the course is intense, especially for teachers who are emerging users of technology, they walk away with something completed and a vision of what technology integration looks like.”

Joan Kane
 Northwest Middle School, Chicago
 Intel® Teach Program
 Master Teacher

Grade Level	K-12
Educational Challenges	Large underprivileged population Diverse student body Lack of technical skills among faculty
Solution Methodologies	A continuum of formal, district-wide professional development focused on integrating technology with complementary pedagogical approaches

Getting Teachers Up to Speed is a Priority

When a school district the size of Chicago Public Schools (CPS) embarks on an effort to fully integrate technology into teaching and learning, it encounters staggering numbers. Some 600 schools require technology hardware and technical support. The majority of the district's 25,000 teachers need extensive professional development to gain proficiency in technology integration. More than 600 principals vary widely in their beliefs about how technology can support instruction. Yet as CPS's Chief Executive Officer Arne Duncan explains, sizeable challenges must be tackled for the sake of the district's 431,000 students. “Today's world is driven by information and technology. In order for our students to truly succeed in that world, they need to be conversant in these high-tech solutions and methods of learning,” says Duncan, who leads the nation's third-largest district.

To achieve the vision of technology fully embedded into teaching and learning, CPS is creating a comprehensive approach to professional development that builds the technical proficiency of both teachers and school leaders. In particular, the district is using the Intel® Teach Program, part of the Intel® Education Initiative, as a catalyst for changing the way teaching and learning take place in classrooms throughout Chicago. Intel Teach is a worldwide effort to help teachers effectively integrate technology into instruction. Says Duncan, “The collaboration with Intel should enhance both our students' education and our teachers' ability to deliver lessons effectively.”



Confronting Big City Challenges

The Chicago district is no stranger to challenges. The current school reform effort dates to 1995, when Mayor Richard Daley took control of the district and introduced sweeping changes. There have been positive signs. Graduation rates have risen from 61.2 percent in 1995 to 70.7 percent in 2004. The percentage of students meeting or exceeding state standards has been slowly but steadily increasing.¹ There is still considerable room for improvement; about a third of CPS schools are not making Adequate Yearly Progress (AYP), as outlined under the No Child Left Behind Act (NCLB).

Like other large urban districts, CPS faces a constellation of issues that affect student achievement. Nearly 85 percent of students are growing up in poverty. The population is diverse: 50 percent African American, 38 percent Latino, 9 percent white, 3 percent Asian/Pacific Islander, and 0.2 percent Native American.² Some 17.3 percent of students are English language learners.³

Although educational technology offers innovative approaches for serving diverse learners, it has been slow to reach the classrooms of Chicago. A 2002 report from the Consortium on Chicago School Research found the district lagging behind other

U.S. districts in terms of classroom technology use, with few CPS teachers integrating technology into instruction and most students unlikely to use technology to learn.⁴ The Consortium identified high-quality professional development and leadership buy-in as essential supports needed to propel the use of educational technology. Because of the district's site-based school management philosophy, decisions about acquiring and integrating technology have traditionally been made at the building level, creating huge variations from school to school.

In the landmark year of Y2K (2000), the Chicago School Board formed the eBrigade—composed of teachers, administrators, technology experts, businesses, universities, and other community stakeholders—to set a more strategic direction for the role of technology. The eBrigade's research found pockets of excellence within the district, but generally an uneven system of professional development for technology integration. The eBrigade outlined a systemic plan for using technology to meet goals: "Technology will propel teaching, learning, communication, and management to generate concrete results, a competitive advantage, and a sense of the possible for all Chicago Public School children."⁵

"How do I know when a project has been successful? I look for teamwork. I like it when students are willing to revise and improve their project, even if they have already worked hard on it."

Juanita Douglas Thurman
Lincoln Park High School, Chicago
Intel® Teach Master Teacher



Solution: Technology Plus a Continuum of Professional Development

Under the direction of Chief Information Officer Robert Runcie, who came to CPS from the business sector in 2003, major technology initiative efforts were rolled out in 2005. These efforts included a new student information system, new instructional management system, a strategic computer leasing program, field support services program, and program management offices. These efforts were implemented to save time, reduce costs, and improve daily operations in schools. To ensure that this new technology achieved desired results, the district also focused on comprehensive professional development for teachers and school leaders.



“Intel® Teach provides us with the courses and resources to enhance student learning by providing our teachers with the skills to effectively integrate technology into the curriculum.”

Robert Runcie
Chief Information Officer
Chicago Public Schools

As Runcie explains, “At CPS we recognize two fundamental principles that drive student learning and achievement: (1) Improved student learning requires improved instruction, and (2) Schools are the unit of change for instructional improvement. Therefore, it is imperative that we provide excellent professional development to our teachers and principals.”

The Intel Teach program, Runcie adds, “provides us with the courses and resources to enhance student learning by providing our teachers with the skills to effectively integrate technology into the curriculum.

We are extremely pleased with our collaboration with Intel and will continue to leverage their resources to help our teachers.”

Sharnell Jackson is leading the charge to bring CPS teachers and administrators into the 21st century. As Chief eLearning Officer for CPS since 2003, she is responsible for implementing the vision for effective technology integration.

Jackson explains her approach to strategic planning: “You start with the goal in mind. You ask yourself: What is it we want to achieve?” It’s no accident that Jackson, a 25-year education veteran, invokes the instructional concept known as backward design. “We know that we want teachers actually using technology effectively, embedded within their standards-based instruction, to increase students’ problem-solving ability,” she explains. In particular, the district aims to use technology to support math and reading instruction, and is researching the connection between use of technology and increased student achievement in those critical content areas. One of Jackson’s first decisions was to adopt the Intel Teach professional development program. Launched in 2000, the Intel Teach program has reached more than 3 million teachers worldwide. When she evaluated the curriculum for the 40-hour Intel Teach Essentials Course, Jackson appreciated the sound pedagogical approach: emphasis on standards-based instruction, project-based learning, authentic assessment, and the use of backward design to meet learning goals. Most teachers leave the course with a well-planned unit ready to use with their students.⁶ The train-the-trainer model also fosters collaboration and instructional leadership. Jackson says she was “enthusiastic about the opportunity” to adopt the program.

As Jackson expected, Intel Teach got off to a fast start in Chicago. Participants came from all corners of the city, including schools with the highest concentrations of poverty.



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Arne Duncan
Chief Executive Officer
Chicago Public Schools

Meeting Needs through Backward Design

Despite the strong program launch, Jackson worried that the district was not offering enough support for teachers brand-new to technology. Word filtered back that some participants lacked the basic skills to open a browser window, save work to a drive, or even use a mouse. "If teachers had not acquired these basic technology skills, how could we expect them to keep up during Intel Teach?" Jackson says. "You have to prepare teachers for this kind of rigorous coursework. You can't just drop them in and expect them to be successful." Jackson realized that the Essentials Course would solve part of the challenge of increasing teachers' technology fluency, but could not provide the whole answer to systemic change.

Once again, Jackson applied the concept of backward design. "How were we going to prepare teachers to succeed with Intel Teach? What else did we need to provide? We worked backward from Intel to figure out how to help teachers get there."

To better meet the needs of all teachers, the Office of Technology Services eLearning designed a continuum of professional development for technology integration. Developed in collaboration with educational researchers at Learning Point Associates, it outlines a six-stage progression that takes into account both the pedagogical focus and the technological fluency of an individual teacher.

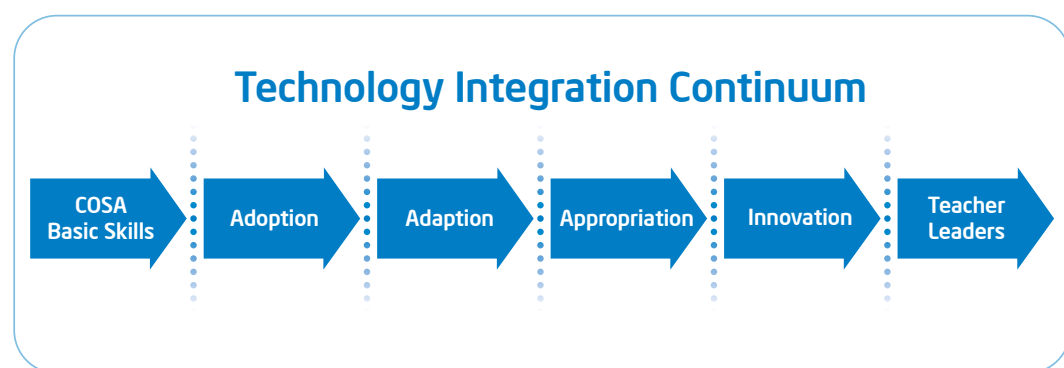
The continuum addresses the standards outlined in the International Society for Technology in Education's (ISTE) National Educational Technology Standards for Teachers (NETS-T). As teachers progress from beginner to advanced in terms of technology literacy, they also are expected to change their instructional practice, shifting from teacher-centered to student-centered instruction.

Teachers evaluate where they are along the continuum by taking an online assessment of technology literacy, the Chicago Online Skills Assessment (COSA). COSA also suggests courses to help a teacher move further along the continuum.

The Office of eLearning has developed a slate of professional development offerings designed to meet teachers' learning needs at different stages along the continuum. All learning is job-embedded. Basic skills courses show teachers how to use e-mail to communicate with parents and staff, and how to use the Internet for research and curriculum planning. Next, teachers focus on using technology skills for professional purposes. Teachers with at least intermediate technology skills are considered ready to take the Intel Teach Essentials Course and focus on effective technology integration.

By the time teachers reach the final stage of proficiency, they have acquired advanced technology skills and are capable of serving as teacher leaders who mentor their colleagues. Those trained as Master Teachers for Intel Teach, for example, are considered to be at this highest level of proficiency.

COSA and the continuum were piloted in the summer of 2004 and introduced districtwide during the 2004-05 school year. Although more than 94 percent of CPS teachers had taken the online assessment by January 2005, only about 13 percent were rated as proficient in basic technology skills. "Now we know where we have to go," Jackson says, "and we have identified a scaffold of supports to help our teachers get to effective technology use."



Chicago Public Schools Office of Technology Services eLearning has developed a continuum of technology integration.

Increasing Leadership Support for Technology

Research shows that sustained professional development, tied to learning goals, is an essential component of technology integration. Equally vital is support from school leaders. Without buy-in from leaders, initiatives for technology integration will not succeed.⁷

As part of its broad vision for technology, CPS is working to build administrators' understanding of effective technology use so that school leaders will be better equipped to support their teachers' efforts at the classroom level.

One strategy is the ISTE Principal Technology Leadership Institute, launched in the summer of 2004. This is a yearlong effort to build school leaders' core technology skills, defined by ISTE's National Educational Technology Standards for Administrators (NETS-A). More than 100 CPS principals are participating in the institute, which includes 80 hours of online professional development with a mentor and four face-to-face sessions.

A separate but complementary effort is the Intel® Teach Leadership Forum. The forum is a four-hour event, facilitated by a trained administrator from CPS. Participating principals, assistant principals, and technology coordinators make hands-on use of technology as they:

- Examine the critical role leaders play in the effective integration of technology into teaching and learning
- Create a prioritized list of leadership behaviors that affect the integration of technology as a tool to improve student learning
- Analyze the ISTE NETS-A⁸
- Begin development of a personalized action plan

Chicago began offering the Leadership Forum during the 2004-05 school year. Jackson saw immediate results from the Leadership Forums; she saw principals "going back to their schools and starting to engage and empower their teachers."

One School's Journey

Dr. Larry Turner has spent all 32 years of his career in education working in the public schools of Chicago. Principal of the Horace Mann Math, Science, and Technology Academy on the city's south side for the past decade, he is also a district facilitator for the Intel® Teach Leadership Forum.

A clear and sustained vision has enabled Turner to build the school's solid technology infrastructure. "What we want is for the technology to be seamless," he explains, "so that for students, using technology becomes a natural part of what they do to learn."

Sustained professional development has built his teachers' capacity to integrate technology effectively. The school has two Master Teachers trained through Intel Teach who have teamed up to train more than 150 CPS colleagues in the Essentials Course.

During one recent Leadership Forum, Turner interrupted the discussion about whether technology integration is even feasible, given the competing challenges facing most urban principals. He asked the group, "Do you want to see it?" They walked down the hall to a classroom where a young teacher was leading an active discussion, using the

interactive whiteboard, enhanced audio, and other tools to engage his students in a high-powered language arts lesson. Turner smiles as he recalls "a perfect teachable moment"

When other administrators seek his advice about integrating technology, Turner boils down his experience to a few key ideas: "You have to create a shared vision. Once you agree on your vision, you have to find a way to communicate it to others. And you have to stay the course." That's especially important in Chicago, where site-based school management gives principals the responsibility for technology decisions. Turner has developed his school's technology infrastructure through careful use of local funds. When Turner makes hiring decisions, he only considers applicants who are willing to learn about technology. "We can train them, but they have to start with the desire to do it," he says.

Turner has been in Chicago long enough to know that district priorities and school politics are subject to change. Nonetheless, he is convinced that the current technology initiative is here to stay. "In this society, how can technology not last? Chicago isn't the only system that has been slow to integrate technology," he adds, "but we are definitely making progress."

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Dr. Larry Turner
Principal
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Technology Academy



“The Intel® Teach Leadership Forum is showing administrators how to use available resources to support the work that needs to be done in the classroom to meet NCLB AYP.”

Sharnell Jackson
Chief eLearning Officer
Chicago Public Schools

The forum offers an important counterpart to the professional development continuum for teachers. “The Leadership Forum is showing administrators how to use available resources to support the work that needs to be done in the classroom to meet NCLB AYP,” Jackson says. Among those resources, of course, are the Intel Teach classes for teachers.

Jackson expects the growth of leadership capacity to translate to improved teaching and learning. “Meeting AYP is about aligning and leveraging what already exists,” she says. “It’s about getting the resources and support you need, thinking beyond textbooks and test prep books.”

Analysis: Overcoming Barriers to Technology Integration

After implementing the Intel Teach program, it has become a cornerstone of the district’s comprehensive approach to professional development. The district’s goal is to have at least one Intel Teach Master Teacher in every school, to foster ongoing support and collaboration at the building level. CPS has learned important lessons about overcoming challenges so that all teachers can continue moving toward the goal of technology integration.

Program Management

A key decision was to hire a veteran Chicago educator to be the Senior Trainer and administrator for Intel Teach for all of CPS. In this new role, the Senior Trainer has a flexible schedule that allows the ability to focus on management details and communications during the day, then deliver classes for Master Teachers from 4 to 8 p.m. daily. With this system, Chicago has trained 480 Master Teachers.

Marketing

In a district with more than 25,000 teachers, how do you get the word out about a new professional development offering? After some trial and error, CPS had decided to focus on recruiting and training Master Teachers. Master Teachers then go back to their schools and recruit their colleagues to take the course. Jackson acknowledges, “We found out that our Master Teachers are the ones who can recruit through word-of-mouth.”

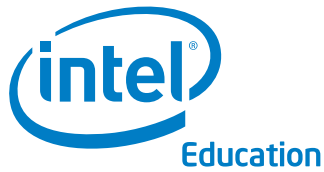
Incentives

A variety of CPS incentives encourage program participation. There is no charge for participants to take the 40-hour course. Participant Teachers can earn four credits toward recertification and two credits that apply toward salary advancement. They also receive free software and curriculum materials.

Master Teachers also receive free training, conducted either by a Senior Trainer like Karen Hicks, who is also an administrator in the district. Once trained, Master Teachers are paid their regular hourly rate for training a class of at least 15 participants in the 40-hour course. Master Teachers also are eligible to teach other CPS technology courses.

A System for Achieving Results

Although Chicago still has far to go to ensure that its technology vision is realized in every school, the district is making significant progress. Sharnell Jackson says, “By using technology, teachers are exposing children to so many new opportunities to learn, problem solve, and communicate. Students are writing more, reading more, learning more.”



Intel® Teach Program

The Intel Teach Program is a proven, worldwide professional development program that helps educators to improve the effective use of technology in the classroom to promote 21st century learning. The most successful educator professional development program of its kind, the program has been driving systemic change in teaching and learning since 2000, with over 3 million teachers trained in 35 countries.

Intel® Education Initiative

The Intel® Education Initiative is a sustained commitment to prepare students with the skills required to thrive in the knowledge economy. Through collaboration with educators and governments in more than 50 countries, Intel delivers programs that improve the effective use of technology to enhance 21st century learning, and encourage excellence in mathematics, science, and engineering. Intel's education programs are adapted to the needs of individual countries and utilize an approach focused on building local competency for teacher training and technology innovation.

- **For more information visit:** www.intel.com/education
- **For more information on the Intel Teach program, visit** www.intel.com/education/teach

¹ Council of Great City Schools: Beating the Odds IV: A City-by-City Analysis of Student Performance and Achievement Gaps on State Assessments. Washington, DC, 2002. Available online: www.cgcs.org/reports/beat_the_oddsIV.html

² CPS data for 2004: www.cps.edu/AtAGlance.html

³ Council of the Great City Schools: Beating the Odds IV: A City-by-City Analysis of Student Performance and Achievement Gaps on State Assessments. Washington, DC, 2002. Available online: www.cgcs.org/reports/beat_the_oddsIV.html

⁴ Hart, H., Allensworth, E., Lauen, D., & Gladden, R. Educational Technology: Availability and Use in Chicago's Public Schools. Chicago, IL: Consortium on Chicago School Research, 2002. Available online: www.consortium-chicago.org

⁵ http://ebrigade.cps.k12.il.us/html/about/findings_h.html

⁶ Martin, W., Hupert, N., Culp, K., Kanaya, T., & Light, D. Intel Teach to the Future Summary of Evaluation Findings, 2000-2003, U.S. Classic Program Implementation. New York, NY: Center for Children and Technology/Education Development Center Inc., 2004. Available online: <http://www2.edc.org/cct/teachfuture.asp>

⁷ Martin, W., Gersick, A., Nudell, H., and Culp, K. An Evaluation of Intel Teach to the Future: Year Two Final Report. New York, NY: Center for Children and Technology/Education Development Center Inc., 2002. Available online: <http://www2.edc.org/cct/teachfuture.asp>

⁸ <http://cnets.iste.org/administrators>