Model Technology Schools Project

The Schools

- **Brooklyn Technical High School**, Principal Randy Asher (13K430)
- **East-West School of International Studies**, Principal Benjamin Sherman (25Q281)
- **The Goddard School**, Principal William Fitzgerald (27Q202)
- **IS 318 Eugenio Maria de Hostos**, Principal Fortunato Rubino (14K318)
- **MS 339**, Principal Jason Levy (09X339)
- **NYC iSchool**, Principals Alisa Berger and Mary Moss (02M376)
- **PS 5 Port Morris**, Principal Mary Padilla (07X005)
- **The Verrazano School**, Principal Gregg Korrol (21K101)

Introduction

Empowered Leadership Fosters Technology Innovation

A key component of the New York City Department of Education's Children First reforms is the empowerment of school principals. Because principals know more about the on-the-ground reality of their schools than anyone else, they have been given greater power over decisions relating to budgets, programs, and personnel. In exchange for this increased freedom in shaping their schools, principals are held to higher accountability standards.

Many principals have used their increased autonomy to develop innovative practices and programs. However, the tremendous amount of responsibility principals have on both the instructional and operational sides of their schools may limit the time they have to communicate with other principals throughout the City. As a result, best practices can easily get lost in the shuffle of day-to-day realities.

This is particularly true with regard to technology, which is a relatively new leadership arena for principals. For years, technology in the schools has been seen as an "extra." However, it has become clear that technology is part of the foundation of a 21st-century model of teaching and learning: a blend of face-to-face and online teaching, communication, and collaboration between students, educators, school leaders, parents, and educational partners. This model may just be the next game-changer when it comes to improving student achievement—and improvement is necessary if we expect our children to thrive in the 21st-century global economy.

Purpose of Model Technology Schools Project

The purpose of the Model Technology Schools Project is to document and disseminate effective practices that are already in place within the system. More specifically, the project aims to facilitate the transfer of knowledge from some of the City's most innovative schools to schools that may need guidance in moving toward a 21st-century model. A data-driven school in Queens, for example, may be struggling to use Smartboards effectively, while a school in Brooklyn may have mastered Smartboard technology, but needs assistance in setting up a data system. This project is a first step toward connecting schools like these.

Profiles of Schools Studied

The eight schools chosen for this project—though they in no way comprise an exhaustive list—all reflect the standards outlined by the International Society for Technology in Education (ISTE). These schools, which range from very small to very large, span four of the five boroughs and have diverse student bodies. They are all eligible for Title I funds and a high majority of their students receive free or reduced price lunch. The principals are exemplary leaders who ensure that technology is integrated into instruction and leveraged to differentiate learning. They have all managed to create cohesive communities in which technology is understood to be an inextricable part of the school fabric, and a foundation for their instructional visions.

Emergent Themes

A number of themes emerge from this diverse group of Model Technology Schools:

- **Student engagement through digital content**
  It is easy for students to disengage when teachers do not require active participation, or when education is delivered in a one-size-fits-all model. Digital content makes it easier for teachers to engage "digital natives," or students who have grown up with Internet technology. Principals have reported improvements in behavior and attendance since the integration of technology in their schools. At The Verrazano School, students who come in for breakfast go straight to the auditorium afterwards, excited to play a version of Jeopardy with Smartboard remotes. At The Goddard School, students are particularly enthusiastic about a media elective offered in the school's fully-equipped television studio.

- **Motivation and accountability through public nature of work**
  Many schools post student work online. School Web sites often feature multimedia student projects, such as podcasts, videos, and music. Students are also asked to contribute to class and school-wide blogs, and to comment on work contributed by their peers. On all grade levels, principals have found that the public nature of work motivates students to meet or exceed standards and expectations. For example, the elementary school students at P.S. 5 express excitement about seeing their writing "published" and posted on class Web sites and online educational magazines. The middle school and high school students at East-West and Brooklyn Tech regularly contribute to blogs. Although these blogs are not moderated by school leaders, students *monitor themselves* and *meet self-imposed standards* of appropriateness. They learn the responsibilities that go along with public presentation on the Web.

- **Focus on literacy**
  Reading and writing are often reinforced through specialized software, such as online leveled libraries, which can assess a child's reading level, as well as "speak" the story or specific vocabulary words. Literacy software can be used in small groups within the classroom, or in labs (I.S. 318 has a small lab dedicated to Scholastic 180). As mentioned above, blogs give students an outlet to practice their writing skills, as well as a forum to express their opinions and engage in discussion with others. Principals stress that blogs are not diaries, and emphasize their utility as instructional spaces. In addition, programs such as Google docs make it easy for students to share documents with each other and with their teachers, which facilitates peer editing.

- **Internet literacy**
  Along with reading and writing skills, Internet literacy is also becoming more and more important; 21st-century schools teach students how to analyze online information for accuracy and assess the quality of sources. In the past, students relied on school library books for research. Now, they must learn how to deal with the tremendous amount of information—of varied quality—available to them on the Web. Whether or not principals require students to take a basic technology/Internet course, they agree that Internet literacy must be explicitly taught.

- **Data-driven instruction**

Computerized databases and assessment tools give teachers access to unprecedented amounts of student data. Teachers and administrators can use this data—compiled in ARIS or in other systems—to tailor instruction to different skill levels. Teachers at The Verrazano School and The Goddard School make extensive use of Smartboard remotes to incorporate quizzes into their lessons. This allows them to access real-time feedback on student comprehension, which they can use immediately to modify their lessons.

- **Student-centric classrooms**
  Since computers make it easier for students to work independently, teachers can create small groups of students according to skill-level. They are then free to move around the room as facilitators, providing more or less attention as needed. At P.S. 5, for instance, a group of ELL students may be working on pronunciation with headphones plugged into their laptops, while another group may be reading independently.

- **Multimodal learning**
  Not every student is a purely auditory or visual learner. Technology makes it easier to engage multiple sensory modalities so that students have a greater chance of learning in the ways most suitable for them. An effective Smartboard lesson, for example, may integrate video and audio clips, as well as interactive components that allow students to answer questions via remote or touch screen. A multisensory approach can be particularly helpful for ELLs and students learning foreign languages.

- **Project/problem-based learning**
  In order to connect learning to the larger world, teachers engage students in project-, or problem-based learning. With so much information at their fingertips, as well as easily-facilitated connections for distance learning, students can act as consultants who solve real world problems. At the NYC iSchool, the curriculum is based around interdisciplinary modules that connect traditional subject knowledge with contemporary issues, making learning feel more relevant.

- **Collaboration**
  The increased facility of communication makes it easier for students, teachers, parents, school leaders, and educational partners to work together to reach educational goals. Collaboration can be as simple as teachers sharing lesson plans with each other through Google Docs, or as complex as live streaming presentations and sharing student projects as part of a world-wide Internet conference (M.S. 339). East-West partners with schools in Shanghai and London, and the NYC iSchool utilizes video-conferencing to connect students to organizations, experts, and professors, both nationally and internationally.

- **Student empowerment**
  One of the premises of an education at the NYC iSchool is that students take charge of their own learning, and at Brooklyn Tech, students are given access to high-level technologies that are used by professionals in the field. Technology empowers students to seek information independently rather than waiting for it to be delivered to them.

- **Students as tech support**
  Students play a crucial role in the operation of their schools as members of tech-squads. Schools usually need trouble-shooting assistance that goes beyond the capacity of a tech coach, and trained students can respond to requests teachers submit, often through an online system. They usually receive service credit for their work. On an informal basis, students constantly assist their teachers with technology, which gives even elementary school-aged children the opportunity to feel like leaders.

- **Overcoming staff buy-in challenges**
  Teachers at different stages of their careers may not see a need to change their practice, so it isn't always easy to convince them that technology integration is important. Principals have dealt

with these challenges in various ways. Some have found specialized professional development to be helpful in making technology less threatening, and others have integrated technology into administrative practices first in order to ease it into instruction. Principals emphasize that teachers should not be forced into technology use; they need to understand how it can help them and how it can help their students.

The eight comprehensive case studies that follow highlight schools that have used technology to improve student achievement and operational efficiency. Although they offer only a snapshot of the exciting advances schools have made, they are designed to encourage principals to reflect on their practices and look to other schools for new ideas.

Contact Information

The Model Technology Schools Project is sponsored by the NYC DOE's Division of Instructional and Information Technology (DIIT). DIIT would love to hear about innovative technology practices taking place at your school. To share your ideas, or for more information on the Model Technology Schools Project, please contact Bruce Lai, Chief of Staff for the Chief Information Officer: blai@schools.nyc.gov.

If you would like to connect with a specific school, please feel free to reach out to its principal:

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