

## **Apple 2Es to Netbooks: Developing 21<sup>st</sup>-Century Classrooms for Student-Centric Learning**

**Principal:** Gregg Korrol  
**School Type:** Elementary  
**Neighborhood:** Bensonhurst, Brooklyn  
**Title I:** Yes  
**Total Enrollment:** 854  
**ELL:** 163  
**Special Ed:** 74  
**Web site:** [www.ps101verrazano.com](http://www.ps101verrazano.com)

|  |       |
|--|-------|
| Asian or Native Hawaiian/Pacific Islander: | 58.9% |
| American Indian or Alaska Native:          | 0%    |
| Black or African American:                 | 0.9%  |
| Hispanic or Latino:                        | 14.5% |
| White:                                     | 25.4% |

### **Principal's Vision:**

Principal Gregg Korrol has made technology integration a key priority at The Verrazano School, insisting that "we must teach our students what we know they need to learn, in the context of the world in which they live." Although he started his school's transformation with only three one-to-one laptop classrooms, he has budgeted carefully to expand the number to 13. His vision of student-centric learning permeates all aspects of the school, from student contributions to the school Web site, to student engagement through efficient use of Smartboard technology. Not only do Smartboards and the accompanying remotes assist teachers in tailoring their instruction according to real-time feedback, but the remotes engage students in innovative and interactive lessons that are often modeled after game shows. Technology is also used as a means of celebrating and displaying student work at The Verrazano School, which increases the school's sense of community and pride.

### **Instructional Goals:**

#### ***Reinforcing Core Curriculum through Interactive Learning***

Teachers focus on identifying online material that is interactive, purposeful, and accurate, and on integrating technology into all subject areas. Students gain better content mastery when lessons allow them to engage with material through multiple modalities, and when lessons are targeted to appropriate skill levels.

The Verrazano School has noticed marked progress in student behavior and participation since the widespread integration of technology. For example, students who are shy can increase their participation by contributing to blogs, sending e-mails, etc. Fast learners are quick to adapt to technology, and while

their peers are catching up, they no longer interrupt because they have plenty to do online. In addition, computers allow students to multitask. "If a student is bored and wants to read more about dinosaurs, it is fine with me as long as he or she can finish the primary assignment and multi-task," says Principal Korrol. "The idea of working on one-book, one-page, is boring for students. We, as adults, cannot sit on that one chair for 6-7 hours, so why do we expect kids to do it?"

### **Lessons Integrating Software and Multimedia**

#### **Specialized Software for Literacy and Math**

To identify reading levels and differentiate learning, teachers have students perform online assessments with E-Class. They also use Pearson's Reading Streets for its online reading curriculum and leveled library (<http://www.pearsonsuccessnet.com/snpapp/iText/products/0-328-27456-9/unit1/018f-018g.html>), and McGraw-Hill for math worksheets and testing materials. Reading Streets, in particular, is useful in that students can immediately find definitions of vocabulary words and have passages read aloud to them by an online narrator. The way software is used in the classroom depends upon student and teacher needs. On a given day, students may be clustered in groups, working independently with headphones on, or engaged in a full class activity. Principal Korrol stresses that technology use is highly flexible.

#### **Teacher Tube and United Streaming Video Clips**

For all subject areas, teachers make use of United Streaming videos (owned by Discovery). Although these videos are not free, they offer high-quality content that teachers find worthwhile (<http://streaming.discoveryeducation.com/index.cfm>). In science, for example, students watch online demonstrations of experiments. In art, teachers guide their students through online museums where they can learn about art history, view works of art, and engage in embedded online exercises. Teachers often incorporate free TeacherTube video clips into their lessons, as well ([http://www.teachertube.com/view\\_video.php?viewkey=9fc33b965e6e7a8534a8](http://www.teachertube.com/view_video.php?viewkey=9fc33b965e6e7a8534a8)).

#### **Reinforcing Content with Blogs and Podcasts**

Class blogs, which give students the opportunity to respond to lessons, can be accessed from teacher Web pages on the main school Web site. Below is a link to Ms. Wong's class blog: <http://nyciblog.com/communities/misswong/default.aspx>

Students also create MP3 podcasts to reinforce learning; as Principal Korrol describes it, technology is a means to better content knowledge. Repeating information back and explaining it helps students really understand it. For a particular science competition, 5<sup>th</sup>-grade students created a podcast about saving the environment: <http://schools.nycenet.edu/Region7/ps101/Podcasting.html>. Other students created podcasts in which they role-played as historical figures.

### **Smartboards and Responders Benefit Both Students and Teachers**

Principal Korrol spent more money to mount Smartboards rather than purchasing the moveable ones. He anticipated that teachers would have trouble setting up moveable Smartboards, or would lose entire lessons by knocking into the cord. He believes that teachers use Smartboards because he has ensured that they are convenient.

### **Increased Student Engagement**

Teachers at the Verrazano School find that using Smartboards has a positive impact on disciplinary issues in the classroom, and typically identify them as the most useful piece of instructional technology. Smartboards are interactive, so students are more actively engaged in learning and tend to be more focused. Students as young as 2<sup>nd</sup> grade often help their teachers use Smartboards, which promotes student empowerment. Teachers have found Flash versions of game shows online and sometimes plug in their own content to incorporate the game shows into their lessons. The handheld Senteo response devices, described below, allow the students to become even more involved in these lessons.

In addition to Smartboards, the school has one Smart table, which has a touch screen that allows students to engage in interactive lessons and play educational games together. It is designed for kindergarteners and first graders, and helps them get excited about technology at a young age.

<http://abclocal.go.com/wabc/story?section=news/education&id=6907050>

### **Real-Time Data-Driven Instruction**

Verrazano's teachers do not simply use Smartboards for more engaging lessons, but also for tailored instruction. For example, they often use Smartboards and Senteo response devices to administer quizzes during class. They are able to ask students a question about material they just taught, and the students can respond using their remotes. Their answers are immediately tallied, and a pie graph of how many students got the question right or wrong pops up on the teacher's laptop. Teachers use these real-time results to modify their lessons on the spot and to ensure that they are teaching at an appropriate level.

### **Morning Game Shows**

Smartboards are also used outside of the classroom. Every morning, the students who come in for breakfast have the opportunity to participate in a morning game show in the auditorium. Although the game show is centered around test prep, the students get very excited about it. The first 30 students play as contestants, and the rest participate as audience members. A teacher is paid per session to run around the auditorium with a handheld microphone to generate discussion about the answers. The Smartboard game show exemplifies the way technology can motivate students to participate in supplemental learning activities.

## **Communication and Collaboration:**

### ***Web site as Hub of Communication***

#### **Source of Information for Parents**

Principal Korrol designed and created The Verrazano School Web site (<http://www.ps101verrazano.com/>), which has received about 50,000 hits in the past 2.5 years. The site is a hub of communication for the school community, and is translatable into eight languages. Posted on the Web site are announcements of school trips and tests, as well as lunch menus, a calendar, and parent memos. There is also a prominent link to ARIS so that parents can view their child's grades. Principal Korrol knows that at least some parents are logging into ARIS parent link because they come to parent-teacher conferences with printouts. Parents can also keep up to date on school happenings by reading the Principal's blog, PS 101 Wonderings (<http://nyciblog.com/communities/ps101/default.aspx>).

## Showcase of School and Student Achievements

The Web site is also a showcase of sorts: it includes a great deal of multimedia, such as slideshows and videos of school celebrations ([http://schools.nycenet.edu/region7/ps101/PS101\\_Arts.html](http://schools.nycenet.edu/region7/ps101/PS101_Arts.html)) and student-created work, such as podcasts. Student of the month awards are also posted on the site.

## Source of Educational Content

Many teachers have their own class Web pages, which include class announcements and links to educational sites. Students can continue to engage at home by accessing class Web pages, and parents can be more involved in their learning.

<http://schools.nycenet.edu/region7/ps101/Classroom%20web%20pages/Clusters/mastrianni.htm>  
<http://schools.nycenet.edu/region7/ps101/Classroom%20web%20pages/Gr4/4-411.htm>.

Principal Korrol has also helped teachers post about two dozen of their lessons online (<http://schools.nycenet.edu/Region7/ps101/PS%20101%20Instructional%20Video%20Library.html>). The first week they were posted, the lessons got about 100 views each. One lesson received over 2,000 views (J. Rosetti, "Subtracting with Zero"). Posted lessons provide an opportunity for teacher collaboration, as well as an opportunity for students to reinforce learning at home by watching the lessons online.

ps101verrazano.com - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://www.ps101verrazano.com/>

Google Search

## P.S. 101: The Verrazano School

*A Model Technology School for the NYCDOE*  
 "Bridging Education and the World"

[Gregg Korrol, Principal](#)  
(click for Principal's Message)

[Elisa Kane, Assistant Principal](#)  
(click for Assistant Principal's Message)

### Links

- Main Page
- PS 101 Calendar
- Classroom Webpages
- Classroom Blogs
- Parent Letters
- Podcasts
- On-Line Videos
- PS 101 Picture Tour
- Parent Association

*The first day of school is  
 Wednesday September 9, 2009.*

*(Supply lists are available below)*

As per parent request, I am very excited to tell you we are increasing our method of communication this coming school year to include automated phone calls, e-mails, and text messaging. You will receive a form on the first day of school to fill out with the required information [\(or you can download it by clicking here\)](#)

[Click here to view our new and updated PS 101 Calendar](#)

Start | Inboxes - Microsoft Outlook | ps101verrazano.com ... | 2:51 PM

### ***Student-to-Student Communication throughout the School Day***

The integration of technology in the classroom has increased communication between students. Students communicate with each other during the school day by blogging, IM-ing, and e-mailing, which allows them to practice their writing skills and receive feedback. Students use an e-mail system called Gaggle, which has a limited quota, to communicate with each other in school ([https://www.gaggle.net/gen?\\_template=/templates/gaggle/html/index.jsp](https://www.gaggle.net/gen?_template=/templates/gaggle/html/index.jsp)). This system is intended to allow teachers to monitor their students' activity to ensure that they are communicating strictly about their assignments (teachers have access to everything their students send).

### ***Parents Engagement through E-mail***

In order to keep parents abreast of the school's progress, Principal Korrol sends a mass e-mail to all parents at the end of the year; he approximates that about 40 percent of parents use e-mail to communicate. The principal makes sure to collect parents' e-mail addresses at the beginning of the year. He uses two strategies to do this: 1) by asking for this information on the students' blue information cards and 2) by requesting their e-mail addresses in letters sent home.

When The Verrazano School began to increase technology-use five years ago, only 100 parents used e-mail. Now, about 300 of them use their e-mail, and are more responsive and active in e-mailing teachers. However, some teachers are reluctant to e-mail parents too often because they are afraid of being overwhelmed by the number of e-mails they may receive. Parents can also communicate with the school by posting to the blog.

### ***Principal-Teacher Communication via Text Message***

The principal communicates with teachers throughout the day via text message (if they have unlimited texting plans) and e-mail (using his Blackberry). He may text them time-sensitive information such as announcements about snow days or H1N1 flu, or reminders to check their e-mail accounts. Because not every teacher has a laptop, phones are the best way to reach them during the day.

## **Implementation of Technology:**

### ***Budgeting and Procurement***

#### **Start-up**

Technology start-up was highly dependent on Reso-A grants; the school received about \$50,000 to purchase its initial Smartboards and laptops. It has taken the school four years to get to its current level of technology. Prior to Principal Korrol's arrival, The Verrazano School had Apple 2e computers with large floppy discs and a few iMacs that served as "beautiful and colorful pieces of furniture." At the end of each fiscal year, the principal assesses the budget to find out how much the school has left and how this money could best be utilized to respond to technology needs in both the short term and the long term.

#### **21<sup>st</sup>-Century Classrooms**

The Verrazano School currently has a Dell desktop and a Smartboard in every classroom, nine class-sets of Senteo remotes, and Mac desktops in the computer lab. In the three 21<sup>st</sup>-century classrooms, there is a 1:1 ratio of Dell laptops to students. These classrooms also have eight iPods (used for listening to podcasts).

Next year there will be 13 21<sup>st</sup>-century classrooms due to careful budgeting and the availability of inexpensive netbooks. Principal Korrol decided to expand when he recognized the high levels of student engagement in the initial three classrooms and heard buzz amongst the teachers. Although he was planning to add only several more 21<sup>st</sup>-century classrooms, netbooks made it possible for him to add more than he anticipated at the same cost. When ELA scores were later released and were substantially higher in the 21<sup>st</sup>-century classrooms, it became clear to Principal Korrol that he had made the right decision about technology expansion.

### ***Staffing Roles Related to Technology***

#### **Technology Teacher**

The Verrazano School has one full-time technology cluster teacher who spends two-thirds of her time instructing students in her lab and one-third collaborating with teachers and assisting them with troubleshooting. Principal Korrol believes that her role is crucial and that technology integration “would not happen” otherwise.

#### ***Tech Support***

#### **Student Tech Squad and Classroom Tech Helpers**

The Verrazano School has a tech squad that meets after school. Led by the technology teacher, students learn how to run a help desk during the school day, and develop their problem-solving and project management skills. In addition to the formal tech squad, teachers leverage their students' knowledge of technology by identifying a few students in their classes who can provide tech support. These students make sure that everything is set up and running smoothly at the beginning of class so instructional time is not lost.

#### **Teacher Volunteers**

There is one teacher in each grade who is identified as a point person for technology, and who gives advice to teachers in that grade level. These designated teachers are not compensated for their additional role; they are volunteers who provide assistance to others based on their interests and capacity.

#### **Principal**

Principal Korrol is the Webmaster, and he also performs troubleshooting along with the student tech squad, volunteer teachers, and the technology teacher. If the problem is beyond their ability, they call the DOE help desk.

### ***Professional Development***

Teachers receive professional development run by the principal and the technology teacher during holidays or lunch breaks. Principal Korrol also uses the end of the year prep and planning periods to instruct and train teachers for the upcoming school year. Typically, he trains a few specific teachers and does some hand holding, and then depends on the teachers to teach each other. For example, Principal Korrol conducted initial training with teachers on how to create class Web pages.

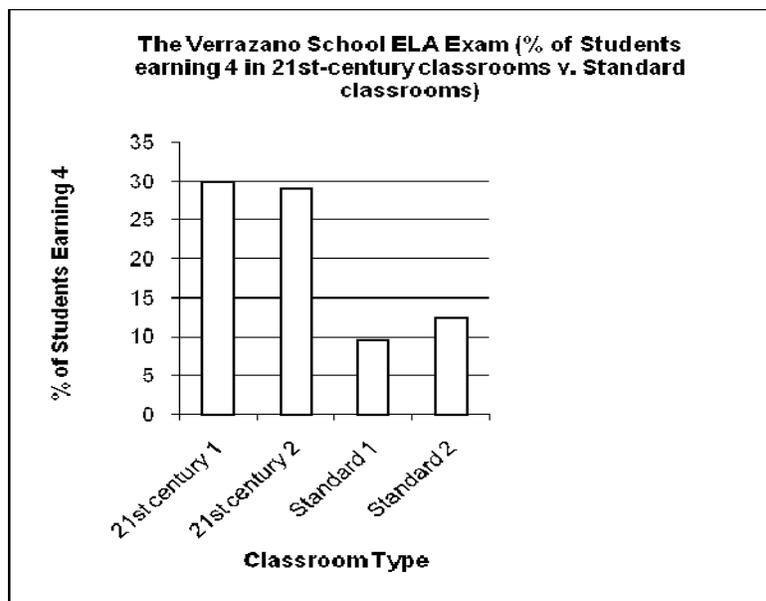
Principal Korrol believes that if teachers realize technology plays an important role in today's world, and are willing to learn from their students, then technology integration will not be a problem. However, he explains that this "takes a lot of conversation and time. You can't change people; you can only open the door for learning."

Because he will not have the capacity to handle all 13 21<sup>st</sup>-century classrooms with his current staff, Principal Korrol recently hired an educational technology consultant to provide support to teachers and discuss projects on a weekly basis. Thus far, the consultant has mainly addressed literacy, but his functions will expand next year.

## Achievement Highlights:

### ELA Exam 2009

| Type of Classroom                       | Percentage of students earning 4 |
|---|----------------------------------|
| 21 <sup>st</sup> century classroom      | 30.00                            |
| 21 <sup>st</sup> century classroom      | 29.03                            |
| Non- 21 <sup>st</sup> century classroom | 9.68                             |
| Non- 21 <sup>st</sup> century classroom | 12.50                            |



## Contact Information:

Principal Korrol is currently working with other schools on the issue of effective technology integration. His project team consists of a number of teachers from various District 21 schools. Principal Korrol also provides training for these teachers on requested topics. As part of a community, he believes schools should lean on each other because they all have different strengths.

You can reach Principal Gregg Korrol at [GKorrol@schools.nyc.gov](mailto:GKorrol@schools.nyc.gov), 718.372.0221.