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The Eyes Have It

In the heart of New Jersey—halfway between New York and Philadelphia—careful zoning, farmland preservation, and a plan for controlled growth kept Plumsted Township rural yet innovative, close-knit yet progressive. Given this environment, it is not surprising that when school administrators told the community they had been chosen as the first school system in the Nation to test a new iris-scan identification process, staff and parents eagerly volunteered to take part—at more than 10 times the rate anticipated by the program evaluator.

"Community response was positive from the start," says Michael Dean, school system technology coordinator. "This is a close-knit community, and we take pride in being an innovative school district. It was exciting to be selected for this. We explained that the National Institute of Justice (NIJ) wanted to learn if it would be practical to use this technology in a school system and if the community would accept it." The independent firm that evaluated T–PASS (Teacher-Parent Authorization Security System) expected about 50 volunteers for the study. Instead, 600 staff members and parents—in a community of fewer than 2,500—signed consent forms and had both irises scanned for the database.

The study, conducted at Plumsted's New Egypt Elementary School, New Egypt Middle School, and New Egypt High School, involved installation of iris scanners for the study group and companion video monitor/intercom/buzzers for the control group and those not participating in the study. (Although control group members also had iris scans in the system's database, T–PASS was programmed not to admit them during the test period.) Outside doors, previously unlocked during the school day, were locked at the start of the first class period; after that, everyone either had to use an iris scanner or buzz the office for admission.

The system went live in April 2003. By the time classes ended in June, using the iris scanners had become part of the daily routine at all three schools.

"We think everything is safe here, but you see [violence in schools] on the news and it's always in the back of your mind," says Wendy Artz, who is the mother of an elementary school student and a substitute teacher. "I think this is a wonderful program that helps give a sense of security to the kids."

Despite occasional problems caused by glare from her glasses—she takes them off and looks into the scanner again—Artz finds the system a big improvement over the former swipe card program. Often, she says, substitute teachers did not receive cards, so she had to rap on a window or have a student admit her at the front entrance. As a parent, she finds it much more convenient to look into the iris scanner and wait for the click than to check in at the office and show identification.

"I'd heard about iris scanning on the news, that they might use it to identify people at banks and ATMs," Artz says. "I'd never heard of using it in a school setting before, but it certainly makes sense. As a substitute teacher and a volunteer, I had to be fingerprinted, and I kept smearing the fingerprints—the police officers were very patient with me! With this [system], you only had to look in the scanner, and it's so much simpler. I can really see this as the wave of the future."

Another glasses-wearing parent, Kim Midgett, says she has never needed to take her glasses off for the scanner. "It's very simple. You just walk up, press a button, look in, and then you hear the door click. It takes maybe 2 seconds." Before Plumsted Township installed 11 T–PASS cameras (5 outdoors, 6 indoors) in the 3 schools, Midgett says she never dreamed anything like this existed. "At first, I wondered why we needed it, because our school system is so safe and so small, but when I found out more about it, it sounded like a good opportunity for our school to test this out."

Midgett did note a serious problem—tailgating. Evaluators found that tailgating was the second most common form of entry into schools. "If there's somebody right behind you, do you let them in, or do you say 'no' and shut the door in their face?" Midgett says. Evaluators recommended that system developers consider modifying

the technology to help prevent tailgating, perhaps by adding an infrared sensor that could detect the entry of a second person. They also recommended tying the iris-scan database into a program that would automatically print a visitor's badge from database information, so parents would not need to stop in the office for a badge.

Evaluators also suggested an additional computer monitor in the office dedicated to the video camera/buzzer system. Office staff must now minimize other work on their computers to pull up the video camera picture for identification. Evaluators cautioned against such common problems as propping doors and leaving them unlocked, and they suggested refinements to improve outdoor use.

Dean says users need to line their eyes up properly with the scanners and stand between 5 and 24 inches from the lens. The scanner takes a black-and-white picture, using barely visible, near-infrared light. In a few seconds, the system scans a database capable of containing millions of records. (Plumsted's total now approaches 1,000.) If the system finds a match, the user is admitted. This "one-to-many" matching process spares the user from carrying a biometric ID card; in a "one-to-one" matching system, the user first scans the card, then presents an eye to verify that the two match.

Teacher Scott Jacobs, who has extremely dark eyes, expected the scanner to have difficulty matching his irises, but has found that the scanner works "amazingly" well. "It gives us a lot of control over who comes in and out of the schools," he says. "Long before 9/11, I thought we should have more control for greater school safety. This brings us right on the cutting edge . . . we've arrived and we have something that's unique."

Dean says no school systems had tried iris-scan technology when it was brought to his attention in 2002, although several airports and hospitals were using the technology for security purposes. With the school board's permission, Dean applied to NIJ for a $293,360 Technology to Improve School Safety Grant to install the iris-scan system.

"This was the first grant I had ever applied for, and I certainly didn't expect to get it. It was a total surprise," Dean says. "I think they selected us because the school system is small and relatively safe, and that makes it as good a place as any to undertake a controlled experiment. If you thrust this kind of technology into a bigger school, you might encounter more problems."

On grant award, Plumsted administrators "embarked on a very robust education campaign. We met with everybody in the community and the reaction was very positive," Dean says. Although the small rural community has been relatively crime free, an October 2001 shooting rampage by a soldier stationed at nearby Fort Dix made residents aware that such incidents could happen anywhere. School administrators began to think more about school safety issues.

"If the kids grow up with this, they're going to think this is normal to need an iris scan to unlock a door," Dean says. "The bottom line is, people feel safer in our schools than they did before, and that's the most important thing. When you feel safer, you can learn more. You can't teach a student if they feel uneasy and unsafe. Kids have enough other baggage to contend with."

For more information on the implementation of Plumsted, New Jersey's Teacher-Parent Authorization Security System, contact Michael Dean, 609–758–6800 or e-mail deanmb@newegypt.us. For a copy of the evaluation titled "Safe Kids, Safe Schools: Evaluating the Use of Iris Recognition Technology in New Egypt, New Jersey," contact the National Criminal Justice Reference Service at 800–851–3420.

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