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How Technology Can Transform a School



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Significantly improved test scores, a high level of student excitement, and renewed staff enthusiasm are the results of a successful technology program.

Abstract

It is 9:10 a.m. on a Monday at Willow Bend School in Rolling Meadows, Illinois. As the first notes of the national anthem sound in each classroom, the children stand, place their hands over their hearts, and lift their eyes to large television monitors. After the students recite the Pledge of Allegiance and the Willow Bend Pledge, they hear the school news, broadcast from the school's video production studio. Confident 5th and 6th graders serve as news anchors. Other students are directors and camera crew. News stories include information about school events, reminders about upcoming activities, and, occasionally, interviews with students or introductions of guest teachers, our special term for substitute teachers.

Willow Bend students regard the daily broadcast as routine. It is just one example of how technology offers students unique learning opportunities and maintains a clear focus on school improvement for students and teachers. Technology has been key to the revitalization of Willow Bend, which in the early 1990s was an underperforming school. Parents, residents of the community, and even the school staff believed that it was not meeting their expectations.

Raising Willow Bend to the district's standards posed special challenges. Defying the stereotype of the typical suburban school, Willow Bend had, and still has, a racially and socioeconomically diverse student body. Nearly 42 percent of the 485 students are from low-income families, approximately 33 percent speak a first language other than English, 53 percent are minority students, and the mobility rate is 50 percent. The capable staff averaged 12 years of teaching experience, but teachers had become demoralized and discouraged. They believed that Willow Bend was not getting the attention and the resources necessary to allow them to do their jobs well.

For some time, the district had been considering a pilot program to explore technology's impact on student learning and performance. The administration and staff at Willow Bend decided that this could be the catalyst that would bring a new focus to our school. In April 1994, the district designated Willow Bend its pilot technology school.

After the initial presentation of the plan to staff, the room buzzed. Some teachers enthusiastically responded to the challenge. Others, convinced that this too would pass, decided to wait out this new scheme. On the wings of the enthusiastic teachers, and despite the doubts of the skeptics, the model technology school has become an astounding reality.

The Starting Point

Although our strategy focused initially on best practices, we quickly moved on to staff development because it was clear that Willow Bend's transformation would succeed only with the enthusiastic participation of the teaching staff. Recognizing that our vision would entail significant changes in school culture, teaching, and learning, we offered each teacher and staff member the opportunity to transfer. No one chose to leave.

A flurry of activity ensued. Committees proliferated. Parents shared their perspectives. A computer hardware committee chose the operating platform. Teachers poured over catalogs, searching for software to fit the unfolding curriculum. We increased our budget for staff development, allowing teachers to search for best practices in teaching strategies, learning environments, curriculum, and support services. To help them develop the school's mission, the superintendent invited the principal and a team of teachers to accompany him to technology conferences. Teachers and administrators began teaming to research, discuss, and evaluate other schools and organizations throughout the world. Working with no established paradigms, the teams carefully crafted a three-year plan to enhance the curriculum and implement new technology.

In addition, the learning environment changed radically. Teachers learned to teach Junior Great Books and the Reading Renaissance/Accelerated Reader Program. They studied how to integrate subjects and how to incorporate strategies for teaching higher-order thinking skills. Except in mathematics, all curriculums and approaches to instruction changed completely.

In spring 1995, Willow Bend ceased to operate as a traditional school. In the following fall, the school doors opened with a new curriculum, instructional approaches, assessment processes, and technology. Students were grouped in multiage settings. Round tables replaced desks because staff understood that learning is largely a social process in which students interact as they explain, support, and self-correct. Folding doors replaced walls to encourage team teaching. Children entered the building as soon as they arrived at school. Teachers met weekly in teams, and some chose to team teach. Teachers and children formed two K–6 academies to benefit from a small school environment.

Technology became the new tool. The staff determined early in the process that technology itself would not be the driving force; instead, it would provide curricular support. They adopted a philosophy: We use technology to learn, not just learn how to use technology.

An Investment in Technology

All buildings in the district were undergoing renovation at that time and had a specific budget for construction. Willow Bend staff and its community chose to reduce their school's construction budget by \$500,000 and reallocate that money to purchase technology. The district superintendent and Board of Education supported that decision as an example of shared decision making. All Willow Bend classrooms have 32-inch monitors and are wired for video, audio, and data transmission. Each classroom has at least seven computers; the learning resource center—our library—has additional computers. Laptop computers are available to students for field trips, homework assignments, or special projects. Everyone has access to word processing, database, and spreadsheet software. Digital cameras

record school events and field trips. Later, students can scan these pictures into multimedia presentations.

Students eagerly use technology to enhance their work. For example, they consistently produce higher-quality writing by composing at the keyboard and using spell checking, cutting and pasting, and other options to rewrite and edit their own work. Technology-assisted reading diagnosis and instruction have led to significantly higher reading scores for all students, but especially for those with low reading ability. Children enthusiastically work with the "Windows on Science and Math" video-disc curriculum, which has improved science and math test scores and created positive attitudes.

Students produce multimedia programs and broadcast videos—including the daily morning news—from the professionally equipped video studio that includes camcorders, QuickTake cameras, flex cams, and a video editing center.

The world is the classroom at Willow Bend because the learning resource center has the technical ability to access information from anywhere. Classrooms can tap into this resource through the school's own network. Students have access to electronic libraries and resources. E-mail links teachers to other teachers and to students.

The Willow Bend staff decided to embed the science and social studies curriculums in six schoolwide thematic units taught each afternoon on a two-year rotation. These units integrate distance learning activities so that students work with their peers from around the world to solve local, national, and international problems. For example, as students choose their problems for an oceanography unit, they have e-mail access to the captain and crew of a ship sailing around the world. They have e-mail and video access to students in schools located near oceans. They communicate regularly with identified experts.

Staff carefully chose software to support curriculum and instructional practices. Among current titles are *WiggleWorks*, a library of 72 books available on CD-ROM and floppy disk, with interactive tools to support reading, writing, speaking, and listening. Bilingual students use specialized software featuring animation, speech,

and graphics to enhance their understanding of their second language and to help develop their academic abilities.

More than 40 software programs reside on individual student computers throughout the building. Students may also use more than 150 CDs and a library of laser discs and videotapes. The Internet and e-mail allow students to access information from many sources. Telephones in each classroom link school, home, and community. Students frequently use these telephones when doing research.

Students collect work during the entire school year in an electronic portfolio that they develop with HyperStudio. They download their finished portfolio onto a videocassette or CD-ROM, which they take home for their parents to view. Each year, students add their best work to their portfolio to create a record of their progress as they move through Willow Bend.

Striking and Positive Results

The results clearly demonstrate the successful transformation of Willow Bend. Test scores have risen dramatically. For example, 3rd-, 4th-, and 6th-grade scores on the Illinois Goal Assessment Program (IGAP) rose significantly to a level well above the district averages and state performance standards and continue on an upward trend. The school's goal is to exceed state performance standards in all subject areas on the IGAP tests each year.

Willow Bend has the best attendance rate of any school in the district. The students' excitement about learning is obvious in every classroom, in hallways, in the learning resource center, and even on the playground. Library circulation has tripled.

Teacher enthusiasm and commitment have never been stronger. The Willow Bend staff is focused on continually improving the newly implemented programs. Shared decision-making results are the best in the district as judged by the staff. Parents—some of whom were initially skeptical—are finding that some of the practices

that they most resisted, such as team teaching and multiage classrooms, work well.

Willow Bend was chosen as 1 of 13 pilot schools in Illinois to launch Eld!n, the Electronic Long Distance Learning Network. The program uses a multimillion-dollar science videotape library developed during the production of *The New Explorers*, a public television science documentary series. It is integrated with CD-ROMs, video, Internet sites, and live satellite teleconferencing between classrooms and science experts.

Recently, the National School Boards Association recognized Community Consolidated School District 15 with the Reed Hundt Award for Excellence, presented in recognition of "leadership, creativity, and effectiveness in the use of education technology to promote learning"—and Willow Bend was a vital component. *NEA Today* has featured Willow Bend, and Bob Chase, president of the National Education Association, has written a nationally syndicated article about the school. Willow Bend has been selected as a demonstration site for Junior Great Books. In fall 1998, Willow Bend won the Illinois State Board of Education's Those Who Excel award.

Sharing Our Story

The school's reputation has grown rapidly. During 1998, we hosted more than 500 visitors from schools and educational organizations throughout the state and nation and from as far away as Germany, England, and Ireland.

Several times a year, the school offers a two-day workshop, "The Willow Bend Experience." Participants learn how technology overcomes barriers to reform and develops a school culture that promotes meaningful school improvement. Proceeds from the workshops go to the school's technology budget.

Our demonstrated success at Willow Bend has led the district to develop a comprehensive five-year plan to replicate in other schools the technology configuration and some of the best practices in place at Willow Bend. But our story

is not over. Willow Bend is a powerful model for success, not a template for duplication. Nevertheless, some of our experiences may help educators interested in a similar endeavor.

1. *Change is not neat.* It happens all over the place and all at the same time. Once the energy of teachers is released and a direction is shared, change occurs rapidly. Results do not appear in a linear sequential format. Patterns form as activity takes place. Planning is not disregarded—on the contrary. However, the end product does not always follow smoothly. The human spirit is not contained by three- or five-year plans. In fact, we completed our first, meticulously designed three-year plan in one year.
2. *Leadership is crucial.* Without the principal's enthusiasm, courage, direction, and consistent sense of humor, the Willow Bend experience would not have occurred.
3. *Vision directs all efforts.* Willow Bend staff knew their objective from the outset: to create a school enriched with technology that would serve students' learning. Goals were clear. All activity was directed toward their accomplishment. For example, teachers placed items about teaching first on faculty meeting agendas. The principal discussed technology use during evaluation conferences. Without that clear direction, we would have lost our way many times.
4. *The negative must be minimized.* The "they won't let us," "we don't have the money," "we tried it before and it didn't work," and "there is not enough time" excuses cannot dominate thinking or conversation. These words and the attitudes they betray are organizational killers and can shut down all progress when given free rein. For dramatic change to occur, the full support of the district's administration and resources is necessary during the change process. We made a concerted effort to stay positive.
5. *Staff must make the decisions.* Although the initial momentum for a technology school came from the central office, local empowerment was a reality. Teachers managed budgets and decided on the purchase of

equipment and supplies. Their ownership—even of their mistakes—was crucial to the success of the program. The superintendent gave Willow Bend staff members "mistake waivers" entitling them to an environment free of administrative criticism.

6. *Everyone becomes a teacher.* Students taught students and sometimes taught teachers. Parents taught children. One teacher taught another and both learned. Many became experts in different areas and shared their knowledge.
7. *Administrative staff was clearly part of the support process.* At Willow Bend, our direction was clearly determined. How to accomplish the task was up to us. The district assisted, provided consultants, and shared our successes. At each turn of the road, we informed district administrators, solicited their advice, and respected their viewpoint.
8. *Teachers shared a bias for action.* We planned and acted decisively, did not reexamine every decision, shared clarity of direction, and mustered our courage.

Schools learning from our experience will write their own story. The characters will have different names; plots will take different turns; settings will be varied; and obstacles will be unique. We hope that the Willow Bend story about the process of change and the importance of courage and consistent vision will give heart to other schools eager to begin their individual stories.