

# The Saturn School of Tomorrow

In St. Paul, educators took a bold approach to creating a completely transformed school, one where students learn to take responsibility for their own learning.

In the world of schooling, we rarely hear the question *What if?* Powerful new ideas about learning abound, but we are hard pressed to fit them into our time-honored traditional schooling model. Visit virtually any of the nation's 16,000 school districts, and you will likely find that what's happening is what's always happened.

In St. Paul, Minnesota, we have asked—and are answering—the *What if?* question at the Saturn School of Tomorrow. Here's how it began. In early 1986, AFT President Al Shanker visited Minnesota and asked, "Why not a General Motors Saturn plant approach in our schools?" Shanker called for teacher and student empowerment, a site-based management model, new roles for staff members—innovations not unlike the changes taking place in the automobile industry.

We had reflected long and hard about a process for systemic and powerful changes in education. Motivated by Shanker's urging, we felt we were in the right place at the right time to develop a re-tooled, transformed, completely redesigned school in which virtually every student could and would learn. We responded to Shanker's call by creating what we optimistically named the Saturn School of Tomorrow.

It's one thing to dream and talk about *What if?* visions, but moving them to



*Saturn's philosophy of self-directed learning, combined with its technology-rich environment, encourages students such as these two boys to devise their own approaches to the world of computers.*

reality takes another level of complexity and commitment. Educators often introduce a seemingly powerful treatment into their schools while attempting to hold all other variables constant. Too often, afterwards they tell us the treatment produced "no significant differences" in student outcomes. Why? Because the chaos of everyday concerns in a school swamps everything else. As Ted Sizer (1983) has suggested, "Things remain the same because it is impossible

to change very much without changing most of everything. The result is paralysis." We decided it made more sense to bring together the most powerful set of treatments we could find and try them all in a setting that encourages real change to happen.

## Partners for Change

Beginning with our initial planning group, teachers were central to this new vision. We worked hard in our

Photograph courtesy of the Minneapolis Star Tribune

district to establish greater rapport with the teachers' bargaining union. Local 28 of the St. Paul American Federation of Teachers was eager to help us become the first district in the nation to plan a transformed school.

We sought other, key partners for this change: the nearby University of St. Thomas, the largest teacher training institution in the Twin City area; Minnesota Educational Computing Corporation (MECC), the largest K-12 educational software company in the world; Apple Computer, a long-time supporter of innovative technology and ideas in education.

Once the partnership was in place, we then had to move the vision to reality. We met for 18 months and developed a tentative mission statement for Saturn: "To bring together the best of what's known about effective learning research and powerful learning technologies into a restructured, transformed, personalized school setting that employs a Personal Growth Plan for each student, a curriculum for today and tomorrow, and the assumption of learning success for each child." We are now two years into our *What if?* quest and are finding as many new questions as answers.

Our pared-down budget and St. Paul's new practice of funding new and different magnet schools as an effective means of voluntary desegregation were two factors that eventually helped us secure unanimous board approval to proceed with Saturn planning. Nevertheless, the board expressed serious concerns about the high front-end costs of the planned high-technology learning environment as well as our intent to pay some talented, year-round, extended-day teachers up to \$60,000 per year. Our funding timetable addressed those concerns by demonstrating that projected costs would fall to district average per-capita expenditures within three to five years. We also made it clear to the board that a comprehensive evaluation—one that would examine process, product, and cost-effectiveness factors over a three-year period—would hold this new school to high achievement standards on current measures and encourage meaningful progress toward other

Photograph by Gordy Grant, St. Paul Public Schools



*Lego-logo is a frequent activity at Saturn school. Here, 10- and 11-year-old girls construct a "Lego-logo town." The students construct bridges, stoplights, and cars, then wire and program them to operate.*

value-added standards. This ambitious evaluation component received \$90,000 in funding from the Bush Foundation.

### Beginnings

In the spring of 1989, the board approved the Saturn project planning model and directed that the school be prepared to open in the fall. A local company specializing in the design of artificial intelligence and expert systems volunteered time and expertise to help our teachers' planning committee develop a personalized learning program. It was midsummer before the key teaching positions were developed and staff were hired. Our best efforts to locate an affordable downtown lease for the school, where we could draw on the many learning resources of the city, were met with disappointing delays. While staff, parents, and students earnestly looked for a suitable building to purchase, we decided to open Saturn for the 1989-90 school year in temporary quarters, at the Bridge View School for profoundly physically challenged students. Timelines were extraordinarily tight. The able, supportive administrative team at Bridge View provided a welcome mat and a can-do atmosphere for Saturn. In only a few weeks, we had completed enough details and made enough decisions to begin.

Saturn opened its doors on September 5, 1989. The student body consisted of 162 4th through 6th graders from all over the city, representative of the district's 40 percent ethnic diversity, 15 percent with special education needs, and SRA scores that ranged from the 1st through 12th grade levels. Staff included a part-time principal, the project director, the lead teacher, three associate teachers, and a support staff of a prep time teacher, three educational assistants, three teacher aides, four teacher interns, two long-term, part-time substitute teachers (in lieu of an unfilled teacher generalist position), and a school secretary. The new Saturn educational "planet" was born.

### Encouraging Self-Directed Learning

Eric Hoffer (1982) reminds us that it is only learners, not the learned, who will inherit the future. And just as there is growing consensus that each individual is ultimately responsible for his or her own health, the Saturn community believes each student must assume responsibility for his or her own learning. Our first year at Saturn has taught us that students, with staff serving as guides, helpers, and managers, can and will do this. It takes time for some students to accept the reality that they are truly in charge of

their own education. But it does happen. And parents must be an integral part of that empowering process as well. We tell parents when they consider Saturn as their child's school that we expect a high level of involvement from them. They participate in several reporting conferences during the year, and they assist with budget planning, staff selection, and school governance.

Saturn students design and complete their own Personal Growth Plans—the heart of the Saturn concept—which outline their particular goals in both cognitive and wellness areas. To measure progress, students also participate in several individual half-hour conferences during the year with their advisors and their parents. These conferences spark each student's Personal Growth Plan and provide content ideas for the menu of courses we offer to meet student goals and district requirements.

The Personal Growth Plan is our "learning compass" at Saturn. When students and parents meet with advisors, it is the students' responsibility to conduct the conference. They tell us what progress they have made toward the goals we all agreed on. Further, they let us know what new topics of study they want to pursue. We try to let them "Follow your bliss," as we call this student-designed course of study.

Last spring, for example, 35 students, aged 8 to 10, asked us for a course on

chemistry. The Science Museum of Minnesota, one of our off-site learning campuses, helped us design an "Introduction to Chemistry Concepts" course using its lab facilities. While we do guide students into choosing the courses that meet district and state goals, it is empowering for them to have a say in what they learn. If staff can find a way to offer what students want to learn, then we're all happy.

### Doing Is Learning

The Saturn school community believes that doing is a necessary correlate of thinking. At our grand opening ceremony in January 1990, hundreds of guests stepped through and over dozens of Saturn students sprawled on the floor or over work tables, students who were working together more often than alone. Amidst all this creativity, one 5th grader was busily wiring a small motor to the Lego automobile he had constructed. His 4th grade partner was busy writing the Logo computer program to control the little car. One of the guests—William Norris, former chair and CEO of Control Data Corporation—asked the boy what he was doing. "Why, I'm writing a computer program to make the car start and stop," he said.

When Norris pressed him further, he explained the various steps of the computer program. Still wearing a puzzled look, Norris asked the student

to explain in greater detail. The student turned to his partner and whispered, "Gosh, what's the matter with this guy? He doesn't seem to understand anything about computers!"

Norris just winked at them and said, "Thanks, now I'm beginning to understand!"

What our students learn and do at Saturn becomes a part of their Personal Portfolios of Proficiency (as we have come to call our transformed report cards), which then become a part of their cumulative "School Careerbooks" (Saturn's replacement for the yearbook).

### A High-Tech Environment

Saturn is a technology-rich school. It is textbook free. We're trying out comprehensive computer-assisted instructional systems from Integrated Learning Systems (Jostens and CCC are two we are piloting here), which provide tailored, basic instruction in reading, mathematics, and other basic skill areas. We are exploring the use of videodisc as an interactive system for presenting high-quality visual information. Students may view videodiscs individually, in small learning groups, or in classroom settings. Videodiscs provide far superior visual and audio information than computers do. Connect a computer to a videodisc system and you have the best of both worlds.

For example, in our Discourse Classrooms, the teacher may show several interesting scenes from a videodisc on carnivorous plants (VideoDiscovery), then stop the system and ask questions to assess students' understanding. Instead of raising their hands, students type their responses on a keyboard at their desk. Only the teacher can see their answers on the monitor at the front of the room, and then adjust instruction accordingly.

### Learning from Experience

That Saturn is high-tech is evident when you enter the school, but it is also high-tech and high-touch. The process approach to writing instruction that saturates the school environment is enhanced by our Macintosh desktop publishing system. Team learning transforms traditionally competitive ac-

*Photograph by Gordy Grant, St. Paul Public Schools*



*Teacher Karen Randall and students engage in some hands-on science learning.*

tivities into cooperative ones. And teachers, with input from students, arrange experiential learning activities that truly take advantage of the school's downtown location and culture.

We are establishing informational and mentorship/apprenticeship activities with the business community for our students. Business people and parents are becoming our experts. One parent hauled in gas tanks and goggles last fall and set up a cryogenics demonstration, quick-freezing several samples, to the amazement of students. Parents often help teach classes, sharing their skills and knowledge with us.

Because our students want to be involved, they asked for a "Volunteers in the Community" course, which they helped design. The course requires activities such as helping the profoundly handicapped students at Bridge View School. Students enjoy wheeling these students to their classes, helping them with lunch, reading them stories, or square dancing the wheelchairs. We were concerned that Saturn students might have trouble working with these kids who seem so different. But, instead, they see them as students also able to learn, and they want to help make it happen. They've asked to be bused back now that we've moved to our new downtown site, so they can continue this helping service. Saturn students regularly visit nursing homes and hospitals.

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Photograph by Gordy Grant, St. Paul Public Schools



Students explain their computer research project to lead teacher Michael Hopkins.

And one student even opened her own summer school for preschoolers in her neighborhood. She taught them Spanish and singing and local history.

### Creating New Models

Changing the order of things is tough work; our school will always be in the process of becoming—we will never consider that we have arrived. It isn't just the hard work of changing—a great deal of energy goes into trying to get others involved. Often, these others turn out to be members of your own management team, your board, your colleagues, who believe that anything we have been doing for a long time must be the right thing to do. Research and development just don't make sense to many of those people because change takes scarce resources away from already bare-boned programs, and few districts have enough dollars to go around.

Yet, to improve, we need to invest money in finding new and better ways. Shanker (February 1990) has proposed that the federal government establish a trust fund, the interest from which could be used to reward those schools and teachers that create effective new models of change. We need this kind of motivation. If change is risky, support is necessary.

One of our students, after presenting the video her learning team had produced about life at Saturn school, exclaimed happily, "There's no place like school!" That's music to any teacher's ears—nothing in our world could be a better accolade. If we are truly committed to engaging each student in learning, then, doubts, dangers, and difficulties aside, we must continue asking *What if?* and find new and better ways for all students to learn. □

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**David A. Bennett** is Superintendent of Schools and **D. Thomas King** is Project Director of the Saturn School of Tomorrow project, St. Paul Public Schools, 360 Colborne St., St. Paul, MN 55102.

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