

## **TECHNOLOGY SUPPORTS SCHOOL REFORM**

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The Oneida City School District is located halfway between Utica and Syracuse in upstate New York State. The District is comprised of a small city (16,000 pop) and several rural and suburban areas. The school district has 2700 students; six neighborhood elementary schools; a middle school and high school. The community is primarily blue collar and approximately 35% of our students receive free or reduced lunch. We are proud of the fact that 70% of our graduating students each year attend college, and our high school offers nine advanced placement courses.

Technology has long been a part of the long-range planning process in the District. We have generated technology plans since 1986. In the early 90's, the Board of Education made technology a financial and program priority. At that time, a committee of parents, teachers, administrators, and students was given the task of thawing up a five-year plan to develop a program including hardware, software, staff development, and assessment. The plan was fully implemented by 1996 at which time the committee was committed to creating a new, more sophisticated and integrated plan. This new plan was built around the school district standards (Table 1), program goals, and benchmarks. While the technology committee was planning, building advisory teams consisting of parents, teachers, and community members were hard at work developing the standards and benchmarks. The two projects have interfaced very well, and educational reform has taken place as a result.

Once technology program goals were determined, the committee was able to develop the hardware and software components needed to achieve our objectives. The focus of the plan is upon instruction and how technology serves as a tool to support instruction. Our program underscores the primacy of communication, computation, problem solving, and information management.

Table 1

### **Standards of Excellence**

- Each student will develop communication skills as a foundation to create and comprehend written, spoken, and visual presentations of various media.
- Each student will gain and apply knowledge and skills to include language arts, fine arts, social sciences, mathematics, the sciences, career/occupations, and health/physical education.
- Each student will use current and developing technologies for academic and occupational pursuits.
- Each student will develop positive attitudes to include emotional/physical health, cultural/social diversity, global interdependence, aesthetics, and ecological consequences.
- Each student will develop the skills to think logically and apply decision-making skills to issues and problems
- Each student will respect and practice basic civic values necessary to participate in a democratic government and social system, including justice, honesty, self discipline, equality, and inter-dependence.
- Each student will develop attitudes that allow for creativity, individual initiatives, cooperative efforts, and life long learning.

These efforts have energized the district's commitment to language arts, technology, shared decision teams, and a multi-dimensional staff development program. Our approach has been to integrate the content, as illustrated by Table 2. Recognizing the demands being placed on teachers with the state, district, and building goals, it became imperative that we integrate for ease of implementation and evaluation.

Table 2

**Critical Thinkers**

| <i>State Standard</i>   | <i>District Standard</i>   | <i>Technology Applications to meet District and State Standard</i>   |
|---|--|--|
| Engaging in Mathematical Analysis, Scientific Inquiry, and Technological Design | Each student will develop the skills to think logically and apply decision-making skills to issues and problems. | -using CD-ROM and Internet technology, students will assemble, classify, tabulate, and analyze facts or data to make decisions   |
| Interdisciplinary Problem Solving   |  | -gathering information regarding authentic issues and problems in their or others' communities using CD ROM/Internet technology, students develop and defend a point of view |
| Understanding Civic Values and Responsibilities                                 |  |  |

The technology Committee then set the stage for school improvement by centering on three common themes; each accompanied by a question:

- Establish a technological culture in our schools to promote our vision: What will our schools look like and what will students know and be able to do?
- Build upon our program strengths: writing, library services, and research. How can technology help me do my job better?
- Focus upon curricula and learning, and not the acquisition of hardware: How will technology support instruction?

We were not experts when we embarked upon this program. We relied, and continue to rely upon our Regional Information Center of the Madison-Oneida BOCES, and the Model Schools Program. With their assistance, we were able to develop a staff development plan and inservice courses for all staff. The courses are taught by teachers with the expectation that trainees leave each training session with a lesson to be implemented in their classroom. We have moved this training model to the next level with a peer review committee. Once a lesson meets the standards of the committee, it is published on a web site for other teachers to access.

So what do our schools look like? As a result of our planning and staff development, Oneida students use computers daily as tools to perform the everyday tasks of writing, problem-solving, creating art and music, locating information, analyzing data, and sending and receiving messages. In our elementary schools, clusters of computers are utilized in center-based instruction. All elementary classrooms are equipped with four networked computers with CD-ROMS; curriculum related software, e-mail, and Internet access.

Our secondary schools have a student/computer ratio of 4:1 with a combination of labs and clusters providing access for students in all subject areas. At our middle school new classrooms were constructed with attached mini-labs. Each lab services two classrooms. This allows for the integration of technology without having to leave the classroom. Each team and department creates lessons/units to support instruction and teach computer skills. At Oneida High School, we have created an art/technology/communications suite with a TV studio for graphic design, desktop publishing, photography, CAD, and broadcasting. Computers are available in all areas. Students have open access to a lab and the library, while two other labs are fully scheduled with classes. The Distance Learning Lab provides access to college courses, electronic field trips, and guest lectures. Technology is a part of our academic culture and supports our instruction.

Beginning with the 1993-1994 school year, the Board of Education established a revolving fund by a one-time transfer of reserve funds. Thereafter, only the State Aid from the prior years expenses were appropriated. This resulted in an expenditure of \$2 million since that time. An additional \$200 thousand was appropriated through capital projects. Approximately 90% of these funds were spent on hardware and 10% for software. In addition, we average \$12 thousand annually for staff development.

Staff development is ongoing. We offer classes during the day, nights, and during the summer. The course selection is based upon teacher needs, program changes, and survey results. This approach is a primary reason for our success -- our staff is trained and training is ongoing.

Our staff have developed rubrics for grades 3,6, 8, and 12 which are utilized to assess student performance and program. The staff is surveyed regularly to evaluate and redesign program.

We believe we have a successful program for our staff and students. The keys to our success are: a shared vision, long-range planning, ongoing staff development, and program assessment. Our staff and community consider technology to be an essential skill area necessary for life-long learning.

Technology has changed how we do business: new strategies for teachers, more hands-on instruction, more writing, research and better focused students. Teachers are motivated to create new practices and students are more productive and creative. Emerson said, "the true object of education is to provide children with resources that will endure as long as life itself" (Emerson, 1833). We believe this to be true in Oneida and we see technology as one of our prime movers.