

Kent Center School Kent, Connecticut

A Rental Implementation

Located in northwestern corner of Connecticut, Kent Center School is part of a six-town school district. Each is self-governing, with its own educational budget and a separate Board of Education. The only public school in the District, Kent Center is pre-K through eighth grade serving 336 students with a staff of 35 teachers.

The Kent Board of Education and leadership at Kent Center School understand that the educational process is changing in classrooms around the world. Like other educators in the United States and abroad, they realize that to compete in the global market, their students must be literate in computer technology and be able to use the various tools of the information age. Over the past decade, this realization has resulted in major transformations in both classroom-based instruction and student-centered learning.

Learning with Laptops Program

Demonstrating their commitment to computer enhanced learning, Kent's technology coordinator and a committee of teachers, townspeople, and Board of Education members developed a five-year technology plan. This blueprint was designed to increase and enhance computers and related technology in the school's computer room and classrooms, as well as to provide related professional development activities for all teachers. The plan focuses on the implementation of a school-wide network for voice, video, and data to create a learning-rich environment where all learners -- students, teachers, staff, parents, and town residents -- have equal access to a wide range of current technologies.

Fresh from attending the very first *anytime, anywhere learning* Summit in March of 1996, teacher Tom Roney communicated the opportunity to test a program born in Australia where teachers and students used Toshiba notebook computers and Microsoft Office software whenever and where ever to enhance the education process. Admittedly not a 'techie' himself, principal Ed Epstein rallied behind the program.

"We probably entered the program's pilot year with a bit of fear," commented Epstein, "but, after that passed, tremendous enthusiasm. There was some skepticism from the non-school community, but that disappeared very quickly once we communicated the very positive aspects of the program."

Implementation

To implement their Learning with Laptops program, a natural complement to the school's technology plan, Kent administrators agreed that the school would own all laptops. Surplus funds of \$20,000 were taken from the '95-'96 school budget to purchase teacher laptops and printers. A bank loan was considered as a source to fund student laptops, but it was finally decided that the \$80,000 would come temporarily from the town's surplus and be paid back through fund-raisers and donations. The school board now budgets for each year's purchase of new and replacement computers.

"We provided eight laptops for teacher orientation and training in the summer of 1996," said Principal Epstein. Then we purchased 40 laptops for the 36 students in February of 1997"

The first-year rollout included only seventh grade students. During the '97-'98 school year, all 68 seventh and eight grade students participated in Kent's Learning with Laptops Program. They were placed into two seventh and two eighth grade groups based on their academic ability in specific subjects such as English and math. Therefore, it was especially important during the implementation of this program that the staff used the laptops in similar, if not equal ways across their classes to ensure that students in both academic groups had the same opportunities to maximize their knowledge and use of laptops in their classes.

Laptops were distributed during scheduled rollout sessions for students and their parents. Facilitated by the principal, technology coordinator Carolyn MacLeod, laptop teachers and Toshiba dealer, teachers demonstrated Microsoft software applications and each family received instruction in laptop care and maintenance.

Under the school's somewhat unique ownership plan, students are permitted to use their laptops both at school and at home during the school year. The laptops and software are returned to the school once the student leaves or graduates.

During the '97-'98 school year, and with an infrastructure improvement grant from the State of Connecticut, Kent enhanced network access. Along with the Board of Education, school staff developed guidelines and policies for student access to e-mail and the Internet. Eighth grade would be allowed access to e-mail and student access to the Internet remained limited to the library computer where students were required to get permission from and be monitored by a faculty member while on-line. Parents and students were required to sign an agreement regarding the school's Acceptable Use Policy for accessing the Internet.

Professional Development

"It's difficult to schedule, but absolutely critical," offered Epstein when asked about professional development for program teachers. "Time is so limited. Everyone has other commitments – coaching, teaching, testing, field trips, report cards – and this can be a major problem."

Nevertheless, all seventh and eighth grade teachers participated in the Learning with Laptops program. Each also participated in several professional development activities that can be categorized into two types: outside events and in-house meetings. Both types of activities were geared toward developing teachers' skills in Microsoft Office applications and in exploring new ways to integrate the Toshiba laptop into the curriculum. While professional development opportunities during the first year of program implementation focused on introducing teachers to laptop technology, the second year activities were geared toward providing hands-on experiences necessary for fully integrating the laptops into the curriculum.

"The training sessions from late August '96 to February of '97 were done while classes were in session, without much advance notice, and in small blocks of time," said Principal Epstein. "Looking back, a solid week of training well before the start of the school year would have been very helpful. Looking back, I realize that ongoing professional development, during the school year and at a site away from students, is also a must."

Throughout the second program year, teachers attended a variety of off-site workshops specific to their interests. Because staff was individually participating in advanced professional development opportunities specific to their field, some of the experiences and knowledge were then presented and shared with the rest of the Learning with Laptops faculty.

Results

Kent's vision was always that the laptop program would afford students, teachers, and parents with unlimited opportunities to develop their academic and computer skills, effectively leading to a higher level of understanding and functioning in this constantly changing world of information technology. The goals for the program are to:

- expand and enhance students' learning opportunities;
- integrate computer technology into classroom instruction and learning at home;
- improve student achievement, creativity, and motivation; and
- better prepare students for a lifetime of success in a technology-rich world.

According to Epstein, "Virtually all the critics of the school have been silent since the implementation of our *anytime, anywhere learning*/Notebooks for Schools program. Much of that criticism was that we were watering down the curriculum. Implementing this program silenced that criticism."

Recently, more specific laptop curriculum guidelines were developed for the seventh and eighth grades in each of the content areas. The guidelines include a list of technology skills that each student in the laptop program is expected to achieve. For example, the science laptop curriculum is expected to include such activities and lessons that will ensure that students will be skilled in using Microsoft Word and Microsoft Excel. Students will write reports using text, data, tables, and graphs; access the Internet to gather information on specific assignments and current science reports; and use encyclopedia software programs to conduct research. Similarly, curriculum goals were established for other classes including English, social studies, math, research/writing lab, computer, foreign language, and resource room. Adhering to these guidelines will ensure that each seventh and eighth grade student will be sufficiently knowledgeable about the Microsoft Office '97 software and skilled in using computer technology in general.

Independent Evaluation

Metis Associates, Inc. was retained by the Kent Board of Education and Kent Center School to evaluate the Learning with Laptops program during its first and second year of implementation. This program evaluation was designed to address the following questions:

- Will the Learning with Laptops program change how students approach and complete schoolwork?
- Will the program facilitate the use of computer technology as a learning tool in the classroom?
- Will the laptop increase individualization of instruction?
- How will teachers integrate the laptop with curriculum and instruction?
- Will having laptop computers in class change teachers' roles from instructors to facilitators of knowledge?
- Does having a laptop computer increase the time students spend on schoolwork at home and reduce the time spent on other activities outside of school?

Metis used a variety of evaluation techniques including the development and analysis of student and teacher surveys; focus group interviews with students; observations of classroom activities; and on-going consultation including personal interviews and phone conversations with Kent Center School staff.

Impact on Curriculum and Instruction

The Learning with Laptops classrooms yield a comfortable and challenging environment in which students can work and learn. Classrooms have been transformed into collaborative environments where students sit at desks clustered together to facilitate group projects and peer tutoring. Working in a group setting enables students to develop common goals, articulate group objectives, and draft and solve complex problems. The laptop classroom appears to facilitate an intellectual, inquiry-oriented environment in which students share their skills and knowledge with each other. Using curriculum-based lessons, laptop teachers provide students with hands-on projects and experiences utilizing computer technology so that learning becomes a function of student interest and motivation to achieve.

Interdisciplinary projects are common at Kent Center School. Specifically, the English and social studies teachers and math and science teachers have teamed up to provide multifaceted curriculum lessons. Recently, math and science teachers collaborated on an interactive project called "rubber band cannons." Working in teams of 4-5, students calculated the distance rubber bands would travel depending upon the size and the angle from which they were launched. Each group of students then created a database in Excel to enter the data from the rubber band experiment. Working with Excel to create formulas, students calculated means and made graphs and tables of their results. Teachers set up "targets" in the schools' gymnasium and students used their data to predict the size of the rubber band and the angle at which it must be launched in order to reach the target. The activity utilized the laptop as a tool to facilitate student knowledge of measurement, data collecting, data interpretation, graphing, formulas, potential and kinetic energy, and horizontal and vertical motion. This type of interdisciplinary project exemplifies innovative laptop teaching as the laptop is used as a tool in the classroom to aid student learning and achievement.

Learning with Laptops has also enabled students to utilize additional software resources. Rather than use a traditional textbook, the French teacher supplements her daily lessons with an interactive CD-ROM version of the French textbook *Bienvenue*. Students review vocabulary, specific grammatical concepts, and their pronunciations with this software. The audio track available on this CD-ROM is particularly valuable for students to listen to correct pronunciation. The teacher reports that this technological innovation has heightened many of her students' speaking abilities and interest in the French language. In fact, focus group interviews with students revealed that they greatly enjoy the CD-ROM and feel that they speak French better because it allows them to experiment with the sound of words. One student commented, "With the CD-ROM, you can check pronunciations. Therefore, it is much easier to stay on top of the work." Students indicated that they would like to see more educational software used in school. Since both the book and workbook exercises are included on the same disk, textbooks on CD-ROM limit the number of books students have to carry home along with their laptop in order to complete assignments. In addition, students enjoyed the interactive learning experiences that the CD-ROM provided.

A parent's summary

Kent laptop teacher Lee Sohl is also parent of a Kent laptop eighth grader. As such, she offers a unique perspective about the value of Kent's program,

"I suppose it's obvious that I'm pleased with Peter's laptop experience thus far, " she said at the end of her son's 2nd year in the program. "But hearing my normally quiet son expound on how he did this and that, hearing how a friend helped him with a [PowerPoint] slide, and how Peter showed a classmate how to create a new background, well, I guess it's just that that's what learning and teaching is about."

"As a teacher, I was also impressed when I watched seventh graders at play practice last spring working quietly in the dark when they weren't on stage. In years past, I had to keep a strict eye on waiting performers, who tended to fool around in the gym rather than watch the show or work on homework. This past year, at first all you could see would be a few lit laptop screens. If you looked closer, you could see seventh graders typing, while sixth and eighth graders huddled next to them, eyes on the screens. Listening, it was a pleasure to hear the laptoppers whispering, teaching the other kids how to do 'stuff' on the laptops."

Many thanks to Metis Associates, Inc. which was hired to evaluate the Kent Center's Learning with Laptops program. Much of this study is taken from their second-year report. Metis Associates is located at 80 Broad Street, Suite 1600, New York, NY. The report was issued in October, 1998.