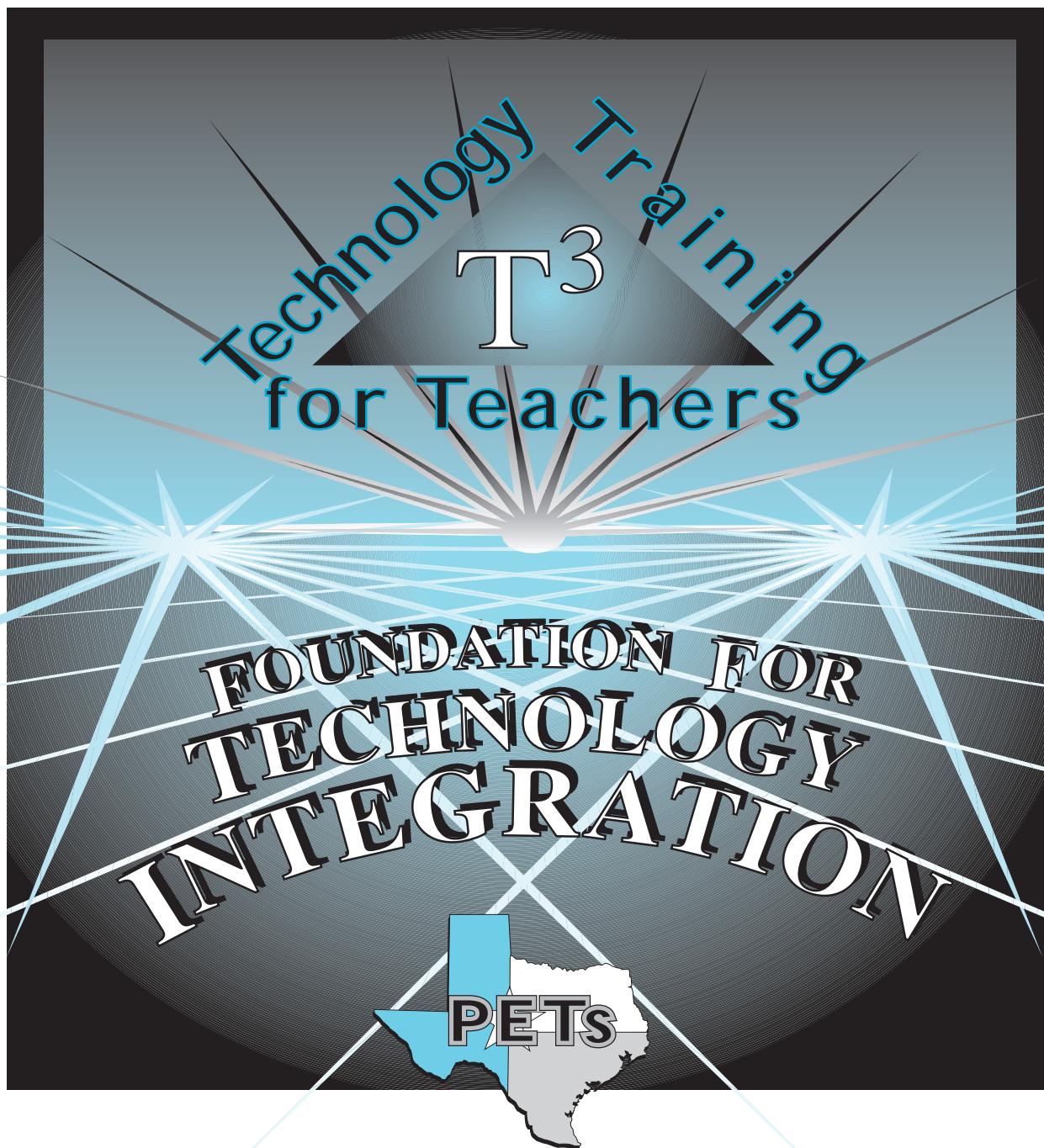


IMAGES

...OF TECHNOLOGY IN TEXAS SCHOOLS

WHEEL

...published by the
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IMAGES of Technology in Texas Schools is published by the *Texas Center for Educational Technology*, a part of the Academy of Research and Professional Development in the **College of Education** at the **University of North Texas**.

This series of TCET reports features Texas educators who each possess several common characteristics: a willingness to take risks, a drive to see the potential of all students realized, and a belief in the power of educational technology.

Inside the pages of each report, you will see how Texas teachers and administrators are developing new ideas about teaching and learning, using technology. You will get a glimpse of how their ideas took form, how they got funding, and how they built their technology infrastructure. You will hear about their search for results, and their hopes of expanding each child's intellectual capital by bringing multimedia global information into each classroom.

You will hear the stories of new Texas pioneers, educators who bravely travel new, uncharted electronic highways, in order to take their students into a new century.



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TECHNOLOGY TRAINING FOR TEACHERS:T³

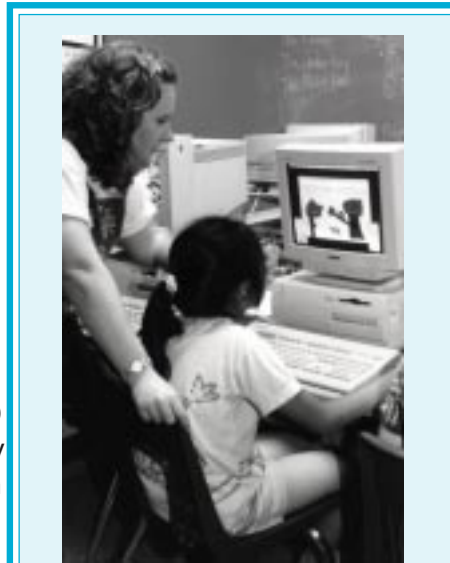
Foundation for Technology Integration
Leander

Text and Photography by:
Sharon A. Feaster, Ph.D.

Leander ISD received an \$80,000 Projects in Educational Technology (PET) grant for 1997-98 to develop ways to share the district's Technology Training for Teachers (T³ or T-Cube) educator development program. Products from the grant are available on a CD-ROM and a web site.

In the fall of 1995, Leander ISD joined the Educator Technology Competency Consortium which consists of the College of Education at the University of Texas, Austin ISD, Region XIII ESC, and Dallas ISD. The group's primary purpose was to develop a common set of technology skills for all educators, which was named the Educator Technology Competencies (ETCs). Leander's T³ program is based on a version of the ETCs.

Leander has provided the T³ educator development course for three years. Each training course consists of eight classes covering the six Level One competencies. Sessions are offered during each semester, one afternoon every other week. "The training doesn't always work with teachers' schedules. We are thinking about child care,



Giddens Elementary third-grade teacher Melissa Kotrla assists a student with a multimedia project. One *HyperStudio* project completed by third graders was "What I Liked in Third Grade."

because we do have some single parents who find it difficult to stay for three hours after school," technology facilitator Laura Peel explained. "So we are looking at ways of making the training more accessible." Beginning in 1997, Leander began to offer summer classes as well, in the format of six individual classes, each one focusing on one module. Participants may sign up for one or all of the classes needed. In the fall, a follow-up after school session assists all summer participants to get started with the integration phase of each module.

Teachers may test out by demonstrating skills and producing products in order to receive the certification without attending class. Mrs. Peel is one of the technology facilitators who offer individualized training during the year on their campuses. "If a team tells me they need to know how to do something, we set up a time. With new teachers, I usually do some training at the beginning of the year on how to use their e-mail and answer any questions about what software we have."

The training program allows teachers to focus on necessary skills and provides assistance in mastering the competencies and integrating them into the curriculum. Level One computer literacy certification encompasses technology competencies needed by all teachers, regardless of grade or subject taught. The five areas, which can be demonstrated on either the Macintosh or Windows platforms, are basic computer literacy, word processing (*ClarisWorks* or *WordPerfect/Word*), spreadsheet (*ClarisWorks/MacGradebook* or *Excell/Excelsior Gradebook*), telecommunications (*GroupWise/Telnet/ Netscape/ ClarisWorks*), and

programming/multimedia (*HyperStudio or Freelance Graphics*).

A performance-based "Assessment of Instruction and Productivity" accompanies each of the competencies. Products which are required for the competencies are sent as e-mail attachments to the appropriate technology coordinator. The products are a lesson plan for teaching a competency from the grade level's technology matrix and a copy of student work done as a result of the lesson. The campus technology facilitator reviews the products and determines whether the skills have been mastered. Upon completion of all sets of competencies, the teachers receive a Level One certificate.

Level II of the training will be more advanced types of skills, according to Mrs. Peel. "We'll get more in-depth on some of the topics we offered in Level I and then go on to more emphasis on curriculum integration."

Gay Dickerson and Ronnie Bell were original instructors for the training program. "The whole purpose of the grant's CD is to show how the training program was developed, some of the problems we had, and how we overcame them," said Mr. Bell. "We have three or four years of data on how the program is working." Without the PET grant, Mr. Bell said the district

probably would not have developed the CD and web site interface to show others what they're doing.

One beneficial aspect of the grant was pulling everything together and looking at technology as a whole instead of as fractured pieces. "One of the things we've done is develop a technology timeline for Leander ISD. That's been really beneficial to look at where we've started and how far we've come," Mrs. Dickerson said.

Carol Ann Brubaker became technology facilitator at Steiner Ranch Elementary School last December and inherited a spot on the PET grant committee. "It's been a growing experience for me to learn where we were and where we are now and how quickly we got here," she said. "Teachers submitted lesson plans for the different components of T³. I had word processing, so we had to show what the training was for the teachers and how they used what they learned."

The PET grant CD-ROM and web site will have clips of training sessions and interviews with teachers who are using technology in the classrooms, according to Mrs. Dickerson. "It will also have all of our training materials, our scope and sequence, all of the assessments for each of the modules, the instructions used by the trainers, samples of

Leander ISD Elementary Technology Competency Matrix, K-5

Keyboarding

- proper body/hand/ fingerpositions
- correct key reaches

Word Processing

- use correct spacing between words, punctuation
- use tab for paragraphs and other indents
- use/change fonts and sizes
- use/change style
- use/change justification; center
- edit and delete text
- copy, cut and paste
- spell check
- insert text/graphics

Database

- data entry
- sort
- search: card catalog

Spreadsheet

- data entry
- create graph
- sort

Programming

- create stack in HyperStudioKidPix

General

- save/load file
- launch/quit programs including CDs
- start/shut down/reboot
- print data
- exhibit proper mouse usage
- identify computer parts and functions

Related Technology

- create and modify graphics
- exposure to telecommunications
- e-mail: class use
- teacher guided collaborative on-line projects
- use interactive CDs
- use electronic research CDs

Computers: Present, Future

- aware of technology careers

Ethics and Issues

- information as property
- legal issues (software piracy)
- moral/legal responsibilities

some of the products from teachers, as well as lesson plans and *HyperStudio* stacks that students have done. The implementation guide will have suggestions for setting up a training program similar to ours, a step-by-step description, plus a cost analysis."

There are four modules in the dissemination project: Basic Literacy, Word Processing, Multimedia, and Telecommunications. Teachers who held Level One Certification in the district's T³ program were eligible to become mentors, write lesson plans, or video tape a class session or personal interview to be used in the project.

The mentor teachers assisted fellow teachers who were working toward T³ Level One certification by providing continuous support as the participants integrated technology into teaching and learning. Mentors received a \$300 stipend for assisting at least four people to complete the certification. The mentors worked outside of regular school hours and participated in quarterly district meetings.

Social studies teacher Kim Payne taught Internet training modules on how to integrate the Internet into the curriculum. She was also a mentor for her campus to help other teachers complete the course and to submit lessons

with technology integrated into the curriculum. One of the projects she enjoyed was taking the art students on a virtual tour to the Louvre, a gallery in Florence, the Sistine Chapel, and the Museum of Modern Art. Students were required to comment on line, texture, and other aspects of various artists' work.

Lesson plans were developed for each of the four modules in primary, intermediate, and middle school curricular areas. The plans followed the Technology Competency Matrix for each grade level and included a final student product. Video vignettes show how technology assists teachers and students in the classroom. They consist of

personal interviews or demonstrations of how technology is being integrated into instruction.

Emphasis on Technology Competencies

Leander ISD, north of Austin in Region XIII, currently has one high school, Leander High School, but is in the process of opening a second campus, Cedar Park High School. There are two middle schools, Leander and Cedar Park. Elementary schools are Block House Creek, C.C. Mason, Cypress, Faubion, Giddens, Steiner Ranch, and Whitestone. Naumann Elementary opens in the fall of 1998. Five technology



Lucy Weber (right), third-grade teacher at Steiner Ranch Elementary School, and Carol Ann Brubaker, campus technology facilitator, assist students as they conduct Internet research about caves. Students were studying geographic and geological features of states and located web sites for caves located in their assigned state. Most of the sites provided virtual tours of the caves.

coordinators serve the eight elementary schools. The middle schools each have one full time coordinator and share another. Leander High School presently does not have a coordinator, but there will be one full time coordinator at each high school in 1998. The district has a WAN , and every computer with sufficient capacity is connected to the network and accessible to the Internet.

Leander ISD has technology goals as part of its graduate profile. The goals are to provide students and staff the tools and skills to manage information (acquire, analyze, evaluate, and synthesize relevant information), support and enrich the academic curriculum (access to and training in relevant telecommunications products and services that support the curriculum), and prepare

students to interact successfully in the information age (telecommunications training in products and services used in the “real world”).

Strategies in meeting these goals include providing access to one or more networked computers in every classroom, ensuring access to computer labs for all students and staff, maintaining a district WAN linking resources and staff through e-mail and T1 Internet access, establishing and maintaining networked resources at each campus media center/library, ensuring access to Internet for all students and staff, and providing distance learning opportunities.

The district’s support strategies include providing campus-based support through one technical and instructional

support facilitator, integrating technology into existing and new curriculum through involving technology coordinators and facilitators in the curriculum development process, generating and analyzing student achievement data through the use of a districtwide instructional management system, and supporting on-line services through the media/library centers (Texas Library Connection).

The district has a checklist of technology skills for grades K-5 and one for grades 6-8. All students, regular and special education, have the same matrix of skills they’re expected to master by the end of the eighth grade. The high school list of competencies is under development.

Mrs. Peel explained the school board policy for Internet access. Both teachers and students must participate in training before they are allowed Internet access. Teachers participate in a two-hour session where they learn to navigate the web and review the district policy. The students must also have parent permission. “This form is signed every year so that parents are well-informed,” Mrs. Peel said. “I’ve had very few parents refuse to let their students on, about six. The teachers give these students other options for research, such as CD-ROMs.”

“Computer literacy was a tool in search of a job; curriculum integration is a job in search of a tool.”

Access and Organization

Mr. Bell taught middle school computer literacy for several years before becoming full-time technology facilitator at the middle school and later moving into the position of technology planner for the new high school. There are now three facilitators, one for each grade level. "The whole reason was that we had two to three instructional labs and the teachers needed someone for troubleshooting and helping during the lab. There was also a need for someone who could teach the teachers and coordinate hardware purchases and curriculum development."

The middle school campus recognized the inadequacies of a separate computer literacy class which tied up the lab and prevented subject area teachers from using the computers. "We ended up asking why we couldn't teach computer literacy in the regular curriculum," Mr. Bell recalled. "The kids actually ended up with more time on the computers than they did during the computer literacy course." A student attitude survey administered after the change showed that students felt the computers were more important to them, and students felt much more creative. "Computer literacy was a tool in search of a job; curriculum integration is a job in search of a tool."

Leander ISD Computer Literacy Matrix, Middle School

Word Processing

- use/change justification: right, left, full, center
- use/change fonts, sizes, styles
- use/change line spacing, margins, tabs
- use correct spacing between words and punctuation
- edit and delete text
- copy, cut and paste
- insert text/graphics
- find and replace text
- spell check
- thesaurus

Database

- data entry
- modify/correct existing data
- sort
- create layout/fields/records
- logically organize information
- search by keyword/condition
- create/print labels
- mail merge

Spreadsheet

- insert/delete rows and columns
- change format
- types of data (numeric, text, date)
- change cell dimensions
- create/enter function: sum, average, maximum, minimum
- enter/create equation/formulas
- identify computer-based math symbols
- use fill function
- create borders
- create graphs

General

- identify computer parts and functions
- launch/quit programs
- exhibit proper mouse usage
- identify window parts and functions
- save/load files
- start/shut down computer system
- print data and print monitor
- import data/graphics
- general computer system/printer repair

Related Technology

- able to logon to network
- create/modify graphics
- use desktop publishing design methodology
- exposure to telecommunication (Internet)

Computers: Past, Present and Future

- aware of events leading to computer development
- aware of present and future technological advances
- aware of use of technology in various careers

Ethics and Issues

- viruses
- copyright/licensing
- information as property
- legal issues (software piracy, fraud, embezzlement)
- moral/legal responsibilities

Programming

- use top-down design planning
- use problem-solving skills
- create structured program (*HyperStudio*)
- debug program

Software Programs Used

- *ClarisWorks*
- *HyperStudio*
- *How the West was One + Three *Four*
- *ClarisWorks: Drawing and Painting*
- *Puzzle Power*
- *Building Perspective*
- *Storybook Weaver*
- *Alamo CD*
- *PrintShop Deluxe*
- *HeartBeeps* (TAAS)
- S.T.A.R.
- Research Applications (library search programs)

“The students have learned so much and they’ve made such an incredible product that they don’t want to sit down. They want everyone to see what they’ve learned.”

Leander Middle School has four computer labs, one for sixth grade, one for seventh, one for eighth, and one lab shared by a seventh-grade team, special education classes, and elective classes. The three grade-level teams or groups that share a lab divide the six weeks evenly. The teachers on the team divide the lab time according to needs of the subject areas. Students go to the lab with their class but can also be allowed to go to the lab individually to work on a project.

The campus has at least three computers per team, with an average of five teachers per team, according to Mrs. Peel, the sixth-grade technology facilitator and one of three campus facilitators. The computers are on carts, and the team members decide how to share the computers, which can be plugged into the network. All computers have Internet access.

The teachers take their students to the lab for training in the technology competencies. “If the teachers need us to do a lesson on some software they’re not familiar with, we do that,” said Mrs. Peel. “We try to get them to watch us for two or three periods, then take it over themselves.” The campus tracks student mastery of competencies by grade-level teams, who teach the skills to the class as a whole. Students who are absent are required to make up the work.

Mrs. Peel said that she’s seen teachers change their teaching methods. “I know that in my first few years of teaching, technology was a separate deal. I took my kids to the computer lab, but it wasn’t always integrated into my curriculum,” she explained. “With the matrix that we use now, I think technology has really helped teachers to incorporate technology into

what they’re teaching, and not doing technology as a separate thing.”

Beverly Alsup has been a technology facilitator at Giddens Elementary School. The campus has two labs, one for word processing and keyboarding and another for class instruction and projects. Mrs. Alsup has classes in the computer lab once a week with kindergarten through fifth grade classes to teach the elementary technology competencies.

Kindergarten students use *KidPix2* for a project which includes a title, self-portrait, patterns, and demonstration of knowledge of colors and of numbers one to five by using stamps. Grades one and two work on a project that includes a title, a drawing of their house and family, a list of four things they like to do, and a drawing of what they might look like in twenty years. In second grade, students learn how to print stories, use a spell check, use different fonts, and save their work. Grades three through five use *HyperStudio* for projects. A third-grade topic for a stack was “What I Liked in Third Grade.” A fifth-grade project researched biomes and the rain forest. Fifth-grade students also begin using databases and spreadsheets.

Cypress Elementary School has two labs, one an Apple lab used by all grade levels for keyboarding and drill and practice. The other is a networked Macintosh lab with twenty-eight computers, used for Internet access, word processing, *HyperStudio* projects, and *KidPix* projects. Each classroom has a Macintosh computer with access to e-mail. The campus also uses the Accelerated Reader program, which some teachers have on their classroom computers. The library has an on-line card catalog and also Internet access.

Cypress facilitator Gay Dickerson just completed her twentieth year in Leander. "I started out as a fourth-grade teacher. In about 1981, the University of Texas a couple of professors were looking for some people to take a course in programming in BASIC. That interested me, so I took that summer class. Then when we got the first computer, an Apple IIe, I was the only person who knew what to do with it," she said. "It kind of evolved that I was the computer person on campus. Then in about 1993, the district appointed a tech facilitator for each campus, so I took over the technology facilitator position."

Engaging Students in Learning

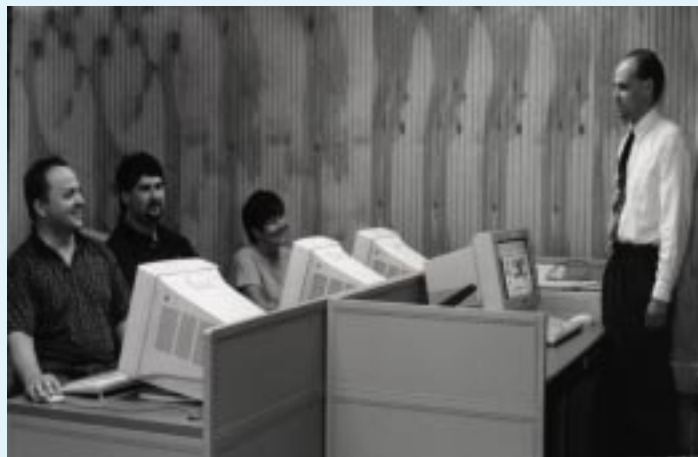
Every team at Leander Middle School completed a *HyperStudio* project during the 1997-98 school year, according to Mrs. Peel. "I have eighth-grade teams who have been using *HyperStudio* for three years now, and they've done some really outstanding, in-depth projects this year."

Some of the student projects at Leander Middle School have included *HyperStudio* stacks that combined math and science to write story problems about what they were learning in science. A sixth-grade project on the *Titanic* studied factors that contributed to the sinking, how the ship's design affected the accident, and how the disaster might have been

prevented. One of seventh-grade teams made a presentation to the Leander City Council about a project to improve the city park. They were allowed to do their projects, ranging from planting flowers and shrubs to cleaning up. They worked with a landscape architect on ideas for the project.

Kim Payne teaches eighth-grade social studies at Leander Middle school. "Last year I used technology for my own purposes more often than not," Ms. Payne explained. "I took two training sessions last summer and learned how to apply technology. This year's classes have been very research-driven."

Her students use all sorts of source of information, the



Scott Monroe (standing), Leander ISD director of educational and administrative technology, discuss plans for technology training in a lab in the district's support services building. Technology staff includes Michael Derton (left), lead technology specialist; Marty Schwarzwald, coordinator of networking and technology support; and Betsy Durrett, coordinator of user services.

Internet just being one, to research any number of different topics. They select various ways of presenting that information, such as putting statistics into spreadsheets or creating *HyperStudio* stacks. "Their stacks have been phenomenal, and every successive one has been more complicated," Ms. Payne said.

Her students built a database to compare and contrast civil rights violations. Students found the Geneva Convention on the Internet and compared it to the Bill of Rights, then looked at violations in three different military conflicts. "We had almost no information about POWs in the library in book format, so almost everything came from an electronic source," Mrs. Payne said. Presentations on the last

project averaged twenty-five minutes. "They've learned so much and they've made such an incredible product that they don't want to sit down. They want everyone to see what they've learned."

Mrs. Payne has also used WebQuest projects, mostly through San Diego State University [edweb.sdsu.edu/WebQuest]. WebQuest is a lesson design where all resources come from the Internet. Teachers set up questions on a web page and make links to sites where students can find the solutions or answers. Teachers who have not yet learned to develop web page can create the lessons on paper, then have students type in web site addresses or use bookmarks the teacher has made.



Students at Giddens Elementary School conduct a conference with their parents in which they review their progress during the year. One item on the agenda is a demonstration of a slide show they created on the computer. The parents and younger sister of a first-grader especially enjoyed this aspect of the student-led conference.

Excerpts from Leander K-8 Technology Timeline

- 1981** one to two computers in district (TRS-80, Apple II)
- 1985** two fourteen-system computer literacy labs at middle school (Apple IIe, non-networked); fourteen-system open computer lab at both of elementaries (Apple IIe, non-networked)
- 1988** automated circulation installed in libraries
- 1990** thirty-five system open computer lab installed at middle school (Macintosh); AppleShare network established on all middle school labs
- 1991** began installing classroom computers at all elementaries (Macintosh)
- 1992** full-time technology coordinator adopted at middle school; technology curriculum coordinator adopted at district level
- 1993** full-time technology coordinator adopted at each elementary
- 1993** single-user modem placed at each campus; upgraded middle school computer literacy labs to Macintosh

- 1994** third thirty-five system open computer lab installed at middle school (Macintosh, ethernet); automated card catalog for library systems
- 1995** established district Technology Services Department; district WAN and T1 Internet access established; administrative and staff e-mail accounts
- 1996** completed installation of computers into all elementary instructional classrooms; middle school computer literacy curriculum integrated into core subject areas; district Internet policy developed and initiated
- 1997** two sets of four Apple eMates assigned to two teachers
- 1998** twenty-eight system open computer lab installed at all elementaries (Macintosh, ethernet); completed installation of computers into all middle school instructional classrooms; TEKS implementation requiring integration of technology into core subjects; install technology for new Naumann Elementary School

Some of the topics include genetics, black holes, the national debt, the Bill of Rights, cloning, and smoking. "Everything is hot-linked together, so you're in a very safe environment as far as not getting into sites that might not be appropriate."

One of Mrs. Payne's first projects this past year, during a unit on economics, was to turn the classroom into a commodities market, where students kept track of their own trading, class results, and team results. "Students came to me and said, look, we can go to the computer lab and put these results on a spreadsheet and make some graphics, and I said, sure, let's do it. They knew that a spreadsheet was a direct application they could use," she recalled. "To me that's a quantum leap between having a canned lesson versus knowing what technology is appropriate for an application."

Her students also worked on a Holocaust unit that was a collaboration between language arts and social studies. Students completed an Internet study comparing primary sources such as Anne Frank and three or four other people who were young adults or children. Students put together several different types of projects, including one as specialized as experimentation on twins or another as general as concentration camps.

The third-grade classes at Cypress Elementary School conduct a "State Fair" project each year. Groups of children are assigned states to research on the Internet. Students put pictures and information into *HyperStudio* stacks. Information includes a map with rivers and cities, the state flag and the state flower. All the state stacks are linked to make a United States stack.

Internet sites to study the Civil War, including sites where they visited historical monuments and viewed original letters. One of the fifth-grade teachers has developed her own WebQuests for several of her units. The second grade class worked on an art project about animals. They created pictures of animals, their habitats, and the food they eat, then shared what they've done with other classes all over the world through the *KidLinks* project. Students have received pictures from South Africa and New Zealand.

The Cypress art teacher has created a variety of computer-oriented art lessons. In one project, she showed the students several pictures by different artists. The children choose one of the pictures and drew it with *KidPix*. The class made a slide show of all the pictures. Fifth-graders drew tessellations manually, then used *Tessellmania*. to produce tessellations on the computer.

They printed the designs in black and white and then colored them.

Each year fourth-graders choose a country and develop a product map in *ClarisWorks*. Students research the products of their country, import an outline of a map, then import graphics from a products library created by Mrs. Dickerson.

Steiner Ranch Elementary School has been part of Leander ISD since 1995. The campus has two labs, one a larger Macintosh lab with Internet access and the other a smaller Mac lab used mainly for keyboarding and word processing.

School year 1997-98 was Steiner Ranch's first year for individual student access to the Internet. Prior to this past year, the teachers could access the Internet and the students could only observe. In the spring of 1997, the district cleared the way for elementary student access. After the students complete training and return signed permission slips from their parents, they are allowed to use the Internet. There must be a trained teacher in the classroom with them at all times.

Every Steiner Ranch classroom has a computer with Internet connections, so students are able to work on

projects in both the classrooms and the lab, according to Carol Ann Brubaker, campus technology facilitator.

One of the Steiner fifth-grade classes researched endangered species and wrote their reports using word processing. The fourth-grade teachers use word processing for story writing and TAAS test preparation. The third grade uses the lab for research about the states. All the grade levels use *KidPix*, but there tends to be a shift to *HyperStudio* about third grade, explained Mrs. Brubaker. The lab is in use during most of the day, even during recess time. Some of the students like to use *Incredible Machines* so they can actually build objects and see the results of their work. *Oregon Trail* is another very popular one. "I hear the music on those two in particular a little more frequently than others," commented Mrs. Brubaker.

Student Ownership of Learning

All Giddens Elementary students conduct a conference with their parents at the end of the year. The student-led conferences started about two years ago. Students explain to their parents their work in different subject areas and demonstrate their computer projects. Approximately 95% of parents participate,

according to Mrs. Alsup. "Students take ownership of their learning." Their portfolio follows the students to the next grade.

Teacher Ms. Chris Burch explained that students create their own agenda, arrange material in the folder (including a writing folder and journal), pick a book to read to parents, explain their achievement charts, do some math problems with a calculator, show "My Goals," and evaluate the conference. Refreshments are a natural conclusion to the conference.

TIE Funds

Leander ISD is also participating in a TIE grant with Austin ISD, Region XIII ESC, the University of Texas, and St. Ignatius School in Austin. The grant was approximately \$580,000 for teacher staff development in the area of technology. "We decided to focus our district's TIE money on creating a product that teachers can use for integrating technology skills into the curriculum," said Scott Monroe, Leander ISD's director of educational and administrative technology. The matrix is divided into four grade level segments (K-2, 3-5, 6-8, and 9-12) and four levels of teacher technology skills. Within each of the sixteen quadrants are lesson plans and units of practice for teaching a specific curriculum component.

The first year focuses on word processing. There are video clips of the teacher and the students doing the work and a text-based unit of practice. The University of Texas Department of Education is heavily involved in the project and is one of the its major creators, according to Mr. Monroe.

The PET and TIE grants are running parallel in many ways. Both are incorporating video clips and lesson plans. The PET grant product incorporates the technical components of the Teacher Technology Training program, while the TIE grant product goes much deeper into the lesson plan aspect, according to Mr. Monroe. "We'll probably end up with two different CD-ROMs that hopefully will complement each other."

Assessment

Leander ISD completed a curriculum audit during 1997-98 to examine and evaluate its programs. "Integrating technology into the curriculum was one of the main points that we needed to work on," said Mr. Monroe. "We've had staff development for technology for three years now focusing on how we can really integrate technology in the curriculum and how we can evaluate it."

Leander ISD Teacher Competencies

Six Sets of Competencies:

Basic Computer Literacy
Word Processing
Spreadsheet
Telecommunications
HyperStudio
Database

Performance-Based Measure for Basic Computer Literacy:

- basic operations (start up, reboot, shut down; load, launch, and quit programs; save and retrieve files; print documents; format floppies; run virus check)
- organizing the desktop (use menus/windows; create directories/folders; find, rename, and delete files; adjust/change date/time and settings)
- basic troubleshooting techniques
- keyboarding skills

Instruction-Based Measures for Other Five Competencies:

- e-mail as attachment a lesson plan teaching the competency from grade-level matrix
- e-mail as attachment a copy of student work done as result of lesson taught

Productivity Tool Measures for Word Processing:

- e-mail as attachment document that demonstrates meaningful word processing document (create, save, print; adjust margins, justification, fonts, sizes, styles; insert clip art as graphic; insert date; create header)
- demonstrate ability to convert documents from one word processing version to another

Productivity Tool Measures for Spreadsheet:

- e-mail as attachments a spreadsheet containing meaningful data used by the teacher, before and after sorting in two ways
- e-mail as attachment a graph with title and axis labels

Productivity Tool Measures for Database:

- e-mail as attachments a database containing data used in role as teacher, before and after being sorted
- e-mail as attachments the database sorted in two ways
- printed results of two searches
- printout of results of a mail merge

Productivity Tool Measure for Telecommunications:

- e-mail description and address of newly-discovered web site containing information or resources appropriate to student population, including a brief explanation of content and possible uses

Productivity Tool Measure for HyperStudio:

- e-mail as attachment a teacher-created stack consisting of at least five cards including buttons, graphics, text boxes, and NBAs to enhance instruction and productivity

Leander has a district-wide benchmark testing program that tests math and reading, K-12, at all campuses, three times a year. The district creates its own tests, scores them, and uses ABACUS database to analyze the data. "We're able to give students and parents a progress chart of how their students are performing. Students can see their own progress and draw their own bar graphs and chart their own progress," Mr. Monroe explained. "We're making data-based decisions about the curriculum. Without technology, it would be almost impossible to do this because there's a large amount of data. We test about 9,000 students three times a year. We're hoping eventually to have the students take the test on-line so they can take a chart of the results home with them."

Planning for Technology in New Buildings

The district includes infrastructure and technology — computers, Internet wiring and drops, routers and other necessary equipment — in the bond money, according to Mr. Bell. He is charged with planning for technology for the new Cedar Park High School which opens in the fall of 1998 with grades nine and ten. The other two grades will be added in the next two years. Most of the regular classrooms will have two drops with computers

running *Windows NT*. There will be about 250 computers at first, then eventually a total of 400 to 500 computers. The library will have twenty student stations, plus CD-ROM towers with twenty-eight bays that will be networked throughout the campus. Students and teachers can access the CD-ROMs from any networked computer. The new high school will open with five computer labs, two used for

formal computer classes and three instructional labs, in addition to a CAD lab.

The Texas Center for Educational Technology has developed a web site called START to assist teachers in finding appropriate Internet resources through carefully selected links. TCET publications are also available on the wite. See www.tcet.unt.edu/START.



Beverly Alsup, technology facilitator at Giddens Elementary School, assists a student as he works on the district's computer competencies. The campus has two labs, one for word processing and keyboarding and another for class instruction and projects. Kindergarten through fifth grade students go to the lab once a week to work on mastery of the elementary technology competencies while creating projects.

TECHNICAL PROFILE OF LEANDER ISD

LOCATION AND DEMOGRAPHICS:

Leander ISD is located approximately 25 miles north of Austin in Region XIII.

NUMBER OF SCHOOLS AND STUDENTS:

The district has one high school, Leander High School, and is opening Cedar Park High School in the fall of 1998. There are two middle schools, Leander and Cedar Park, and seven elementary schools, with a new one opening in the fall of 1998. The district serves approximately 11,700 students, with a growth rate of more than 6% a year.

TECHNOLOGY SUMMARY:

Leander ISD supports a district technology curriculum coordinator and at least one technology facilitator at each campus, with additional facilitators at the middle schools. Middle schools have four labs in addition at least one computer per grade-level team. Middle school computer literacy is integrated into core subject areas. Elementary schools have at least one networked lab and at least one computer in all instructional classrooms. The district has a district WAN and T1 Internet access. Administrators and staff have e-mail accounts.

The district has developed a checklist of competencies for K-5 students and a list of competencies for middle school students. Competencies for high school students are under development.

Leander ISD developed an extensive Technology Training for Teachers program which provides Level One certification for teachers who master the six sets of technology competencies. Training is provided during both semesters and during the summer. The district received a PETs grant to disseminate information about its educator development program. Leander is also participating in a TIE collaborative focusing on integration of technology into the curriculum.

TECHNOLOGY CONTACTS:

Scott Monroe, Director of Educational and Administrative Technology, Scott@leander.isd.tenet.edu.

Betsy Durrett, Coordinator of User Services and Technology Services, durrettbe@leander.isd.tenet.edu.

Visit the district's web site at www.leander.isd.tenet.edu.





Texas Center for Educational Technology

The Texas Center for Educational Technology (TCET) stands as one piece of an impressive infrastructure created by the Texas Education Agency to bring the benefits of technology to Texas public schools. At the heart of TCET's research and development agenda lies its mission: to promote research, development and evaluation collaborative between industry, education, and communities in order that technologies and application models can be created and adapted for integration into public schools.

TCET's organizational structure is uniquely collaborative. Public school educators, teacher training institutions, and technology vendors work together, sharing perspectives and creating a dynamic environment aimed at restructuring Texas public schools to meet the challenges of the 21st century.

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