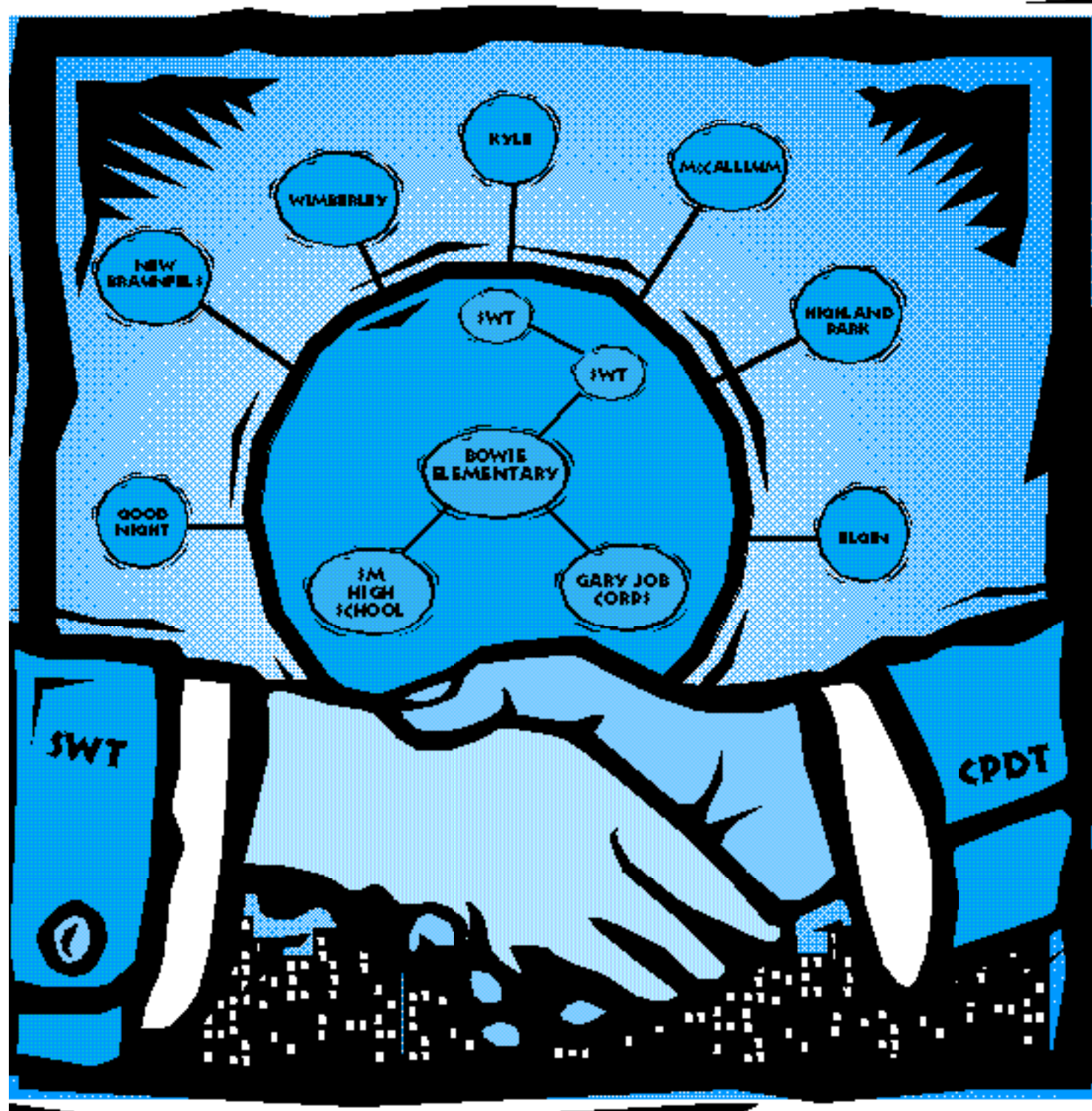


IMAGES

...OF TECHNOLOGY IN TEXAS SCHOOLS



...published by the
Texas Center for Educational Technology



Technology Plays a Major Role in New Approaches to the Education of Teachers and Students in the SWT-CPDT

Introduction

The necessary ingredients were there at the same time. And they came together for a harmonious collaboration. A university recognized a need to do a better job of preparing teachers for our technological age. A school district recognized the need to provide more appropriate education in our technological age. A local telephone company wanted to install fiber-optic connectivity, both as an aid to education and as an investment in their own future.

So when Dr. John Beck, dean of the School of Education at Southwest Texas State University (SWT), invited the San Marcos Consolidated Independent School District to collaborate in a new approach to professional development for teachers, the answer was an enthusiastic YES. That the three entities were all local to San Marcos, Texas, was an added plus, though not a necessary one. In fact, the program, now in its

second year as one of several Centers for Professional Development and Technology (CPDT) throughout Texas, began with Bowie Elementary School in San Marcos and Highland Park Elementary School in Austin serving as initial field sites. Goodnight Junior High School in San Marcos and McCallum High School in Austin have since become participating sites, and the program has even extended itself to several neighboring communities, including Elgin (55 miles away), Kyle, New Braunfels, and Wimberley. Indeed, geographic proximity is not so important a factor as it once was. In this era of telecommunications, collaborating parties can be at large distances from one other. What is needed is a vision of what can be accomplished and a willingness to make the effort and run the risk.

While the SWT-CPDT program encompasses school districts in several communities, this issue of *IMAGES* focuses on San Marcos

“The SWT-CPDT program encompasses school districts in several communities.”

“The SWT-CPDT program in and around San Marcos is a story about technology in education.”

which is the hub of the activity. The SWT-CPDT program in and around San Marcos is a story about technology in education. But it is much more than just that. It is a story of preparing teachers (existing professional staffs and also college students preparing for teaching careers) to give young students the best educational experiences possible and to make the best use of technology as a tool in that endeavor.

interns would be assigned to an elementary school for a semester, not as “gophers” for the regular teachers, but as interns observing and participating in meaningful tasks. Each intern, for example, would be required to develop and administer several lessons in which technology as a tool is one of the required ingredients. The interns would spend half of the day in the classroom with the children and half of the day being instructed as SWT students. But this instruction would not necessarily take place on the SWT campus. By means of interactive television (ITV) between SWT and Bowie Elementary School (the SWT-CPDT headquarters in San Marcos), teachers at the university would instruct and interact with interns located at Bowie.

Elementary school principals were asked to study the SWT-CPDT concept and respond if they had an interest in participating. Sarah Lesak, principal of Bowie Elementary, quickly caught the vision and submitted an enthusiastic response. Study teams consisting of San Marcos teachers and administrators and SWT faculty worked together and successfully submitted an application to TEA for a CPDT grant. The SWT-CPDT program became a reality a year later (1992) when the work of the planning team, led by Dr. Patrice Werner (of SWT) and Dr. Leslie Huling-



SWT Professor of Curriculum and Instruction Patrice Werner works with a group of Bowie students in the CPDT classroom as SWT students observe from the SWT campus.

The SWT-CPDT Concept

The SWT-CPDT teacher education program, a collaboration between Southwest Texas State University and participating school districts, had its inception three years ago with the receipt of a \$30,000 planning grant from the Texas Education Agency (TEA). Separately from its traditional curriculum of teacher preparation, Southwest Texas State would inaugurate a new field-based block program in which selected

Austin (LBJ Institute for Improvement of Technology and Learning), resulted in a Texas Education Agency grant of almost one million dollars. According to Superintendent Dr. Tom Anderson, five hundred and fifty thousand dollars of that money went into the acquisition of technology. Sarah Lesak's Bowie Elementary School became the SWT-CPDT headquarters for San Marcos.

In enlisting the participation of her faculty, Lesak wisely asked for volunteers to participate in an "opportunity." It also helped that Pat Curtin, already an established and respected educator in SMCISD

was named SWT-CPDT Director. Twelve teachers were among the first volunteers, four more joined after the first year, and now the entire Bowie faculty are enthusiastic participants.

Lori Jackson, a fourth grade teacher, admitted initial apprehensions, but now she says, "I don't regret for one minute getting involved." In commenting on both the help from the SWT interns and the role of technology in the teaching process, first-grade teacher Claude-Dale Evans says, "I don't know how we ever got along without it. I can work so much better and faster." Her students do

their math and their journal writing on the computers in her classroom. Observations made by her first-graders, committed to words and sentences for their journals, adorn

"The SWT-CPDT program incorporates technology into a totally new approach to teacher education."



Primary direction for the SWT-CPDT program has emanated from (left to right) Dr. Tom Anderson, SMCISD Superintendent; Dr. Lionel "Skip" Meno, Texas Commissioner of Education; Dr. Jerome Supple, SWTSU President; and Dr. John Beck, SWTSU Dean of Education.

the wall outside their room. And Nichole Morgan, one of the interns, is excited and can't wait to become a full-time teacher.

The SWT-CPDT program incorporates technology into a totally new approach to teacher education. This approach features a professional development program built around four strands: (1) technology, (2) curriculum and content, (3) teaching and administrative processes, and (4) capacity building and collaboration. As interns, the program's students receive observation and participation experience in field classrooms before formal student teaching takes place. The interns spend half of the day in classrooms working with students and half of the day in specially designed supplementary university courses which can be delivered to the Bowie field location via the ITV network. The ITV network is also a vehicle for field-based integrated programs.

SWT-CPDT interns spend more of their observation/participation time actually teaching (about 27%) than do traditional teacher training students (18%), and they spend less time (about 10%) correcting papers and making things than do the traditional trainees (31%). Emphasis is placed on student-directed activities and away from teacher-centered activities. Experience has shown a substantial increase in the percent of time that the K-4 stu-

“Using DS3 signals and relatively low cost DS3 equipment for video transfer methods, groups of learners at each site can see and hear students and instructors at the other sites in real-time settings.”

dents are free to locate themselves in the classroom as desired (26% to 50%), the time spent on self-produced activity (17% to 31%), and the time spent in cooperative activity (24% to 39%). Use of workbooks is significantly down, and use of paper and pencil and of computers is significantly up.

Following are comments expressed by interns who have participated in the field-based block program:

“Participating schools in the SWT-CPDT program are equipped with a variety of technologies such as computer labs, additional computers in the classrooms, and libraries having multimedia resource centers.”

“I was skeptical before the program - fear of failure. Now that I see I can succeed, I'm very excited about teaching.”

“I felt like I was in a fog. This block made everything click.”

“After teaching one lesson I knew I was in the right profession. I can't wait to get into teaching.”

Technical Infrastructure

At the beginning of this decade, the San Marcos Telephone Company (now a part of the Century Telephone Company) foresaw the potential effectiveness of interactive video and multimedia networking as a tool for school empowerment and community development. A two-year planning effort in 1990-1991 resulted in the 1992 creation of the TeleCommUNITY[©] network with three sites; San Marcos High School, Southwest Texas State, and the Gary Job Corps Center, coming on-line with an ITV classroom at each site. The network, built on a digital fiber optic backbone unique to the State of Texas (and one of six in the U.S.), provides two-way, full motion video with simultaneous audio and data capabilities. The equipment configuration also allows for satellite down links,



Congressman Greg Laughlin (left) discusses the successes and future implications of the SWT CPDT program with Project Director Pat Curtin and Superintendent of Schools Dr. Tom Anderson.

VCR playing and recording, laser discs, CD-ROMs, computer displays, and even remote control of computers at the remote site.

Using DS3 signals and relatively low cost DS3 equipment for video transfer methods, groups of learners at each site can see and hear students and instructors at the other sites in real-time settings. This “continuous presence” capability eliminates the need to manually switch the video and audio signals, as in a scanned network. The teachers prefer this continuous presence network which more closely approximates a self-contained classroom than does a

manually scanned network.

In 1993, two additional sites joined the TeleCommUNITY[®] network: the site at Bowie Elementary School, and a second site at SWTSU (at the Alkek Library).

Participating schools in the SWT-CPDT program are equipped with a variety of technologies such as computer labs, additional computers in the classrooms, and libraries having multimedia resource centers. At Bowie Elementary, the computer lab is equipped with 26 Macintoshes and supporting printers, scanners, CD-ROM drives, and a multimedia station. In addition to

keyboarding and regular classroom instruction which integrates technology into the curriculum, the lab is used by SWT students and by K-4 students pursuing their own class projects. The lab is not used for drill and practice. Donna Bedingfield, lab facilitator, understands the concepts and goals of the CPDT program, and she cooperates fully with regular staff, interns, and students. Twelve of the Bowie Elementary classrooms have two telephone lines, one for voice and one for data transmission. The district, which covers this expense, is attempting to respond to requests for lines in additional classrooms. A collection of software packages

SWT pre-service teachers (in the back) man the station that controls the monitors in the CPDT classroom at Bowie while other students work collaboratively on a project. The monitors connect Bowie with SWT and Gary Job Corps.



is available, including, among other things, ClarisWorks, Kid Pix, Math Rabbit, Slide Show, SuperPaint, and Storybook Weaver.

Bowie's computers are connected with an Ethernet local area network, and a direct 56kB line, via Southwest Texas State, gives them unlimited access to TENET and to the Internet. A similar connection is being planned for Kyle Intermediate School, also a SWT-CPDT site. The kids have become adept at using both the Internet and the classroom telephones for research activities. Susan Kasper's students use the Internet often for projects and information gathering, result-

ing in a "classroom without walls." Bowie's principal, Sarah Lesak carries on local and distant E-mail communication on a regular basis. Lucy Cochrane, the SWT-CPDT technology specialist, maintains and supports all CPDT equipment, in addition to providing training to SWT faculty and students, public school faculty, parents, and community members. She frequently conducts CPDT presentations for visitors and at conferences. Lucy also defines the technology integration portion of the professional development center for both the SWT pre-service teacher program and the participating public schools.

Other TeleCommUNITY© Activities

In addition to their fundamental role in the SWT-CPDT program, the ITV classrooms and their fiber optic backbone are also used in other capacities. As has been previously mentioned, one of the classrooms is at the Gary Job Corps Center, which is the second largest technical training center in the United States, and which draws students from around the nation for technical training. Presentations in their World of Work program are available to parents and others in the community via ITV. Similarly, calculus courses at SWT are

available to high school and job corps students at their own respective locations. And one of Dr. Anderson's plans is soon to begin making high school courses available to the job corps students so they can earn a preferred high school diploma rather than a GED.

The PATH Mathematics (Partnership for Access to Higher Mathematics) program is another example of the ITV classrooms in action. By linking the university directly with the high school, 8th and 9th grade students (64% minority and 44% economically disadvantaged) who have been tracked out of the algebra/geometry curriculum can get comprehensive, hands-on pre-algebra instruction which enables them to compete in the mainstream math curriculum. The Gary Job Corps is also included in the PATH Mathematics program.

Staff Development

The SWT-CPDT program offers some unique professional development opportunities for teachers in the participating schools. The Teacher Fellows Program, based on a no-additional-cost program between Southwest Texas State and the participating school districts, provides selected graduate students to the districts as Teacher Fellows. These Fellows, who are fully

certified teachers, participate in these assignments as first-year teachers. In exchange, participating districts select master classroom teachers having five or more years experience to serve as Exchange Faculty Teachers. These master teachers are released from classroom assignments to supervise and co-instruct in the undergraduate teaching program at SWT and to serve as on-site induction support teachers for the Teacher Fellows. In addition to receiving a stipend and benefits from SWT, Teaching Fellows have the opportunity to earn a fifteen month (one school year and two summers) Masters Degree.

During the first year of the CPDT program, professional development among San Marcos teachers was encouraged by releasing the teachers one day a week for development activities. The second year, after a majority of teachers had become technically competent, release time for development was reduced to one day a month.

A summer program titled Promoting Educational Excellence offers a series of one-day workshops in a wide variety of computer and education topics. These workshops, many of which are taught by San Marcos CISD teachers, are attended by teachers from outlying areas as well as from San Marcos itself. A Reading Reflection

Roundtable, with 73 participants from area schools, was so successful that three are being offered during the current school year. In addition, a nationally known consultant will be brought in each semester, followed by action labs and reflection groups.

Community Relations

Another success enjoyed by the school district is its relations with parents and with the community in general. A popular series of Thursday evening classes at Bowie attracts community members of all ages. Anyone interested in the computer topic of the evening is welcome. On one occasion, a SWT professor was quite surprised to find himself and some elementary school students in the same class. And imagine the good feeling that must have come, on another occasion, to a youngster with a poor self-image as he showed a classmate (another SWT professor) how to use a mouse.

Saturday parent-pupil workshops, also at Bowie, have proved popular enough to require a second section to accommodate the demand. A total of 128 children and 126 adults attended the six workshops held this past spring. These workshops, which are intended to help parents develop closer relationships with their children's school in a non-

threatening technical setting, involve parents and community. The parents attend as the students, and their children are the teachers. Each workshop focuses on learning to use a software package such as SuperPaint, TurboMath, and Kid Pix to produce greeting cards, perform mathematical exercises, and construct graphical presentations. Some typical parental comments about the Saturday workshops are:

“I enjoyed working with my son immensely. Please continue to provide this to the children and parents.”

“This was a wonderful opportunity for my child to show his computer skills to me.”

“I enjoyed working with my son immensely. Please continue to provide this to the children and parents.”

Last January, Bowie and CPDT sponsored a “Kids Conference,” a Saturday morning program in which the kids participated in a

wide variety of presentations to the parents. The conference, which featured a number of science and computer-related presentations, also covered other aspects of school life such as poetry writing, Bowie’s discipline program, and even anger management. Fifth-graders Leslie Lewis and Paige Crews won a contest for the best computer generated design for the cover of the conference’s printed program.

Outside the auspices of CPDT, a PTA fun night last year was organized around three activities: a magician, a Halloween activity, and computer lab activities. Contrary to what one might expect, the computer lab was the area of highest interest and attendance. The children were eager to demonstrate their skills and the lab’s capabilities to their parents.

Pat Curtin suggests that these various programs are responsible, to a large degree, for the high level of parental interest and support. “Parental volunteer interest is overwhelming,” she states.

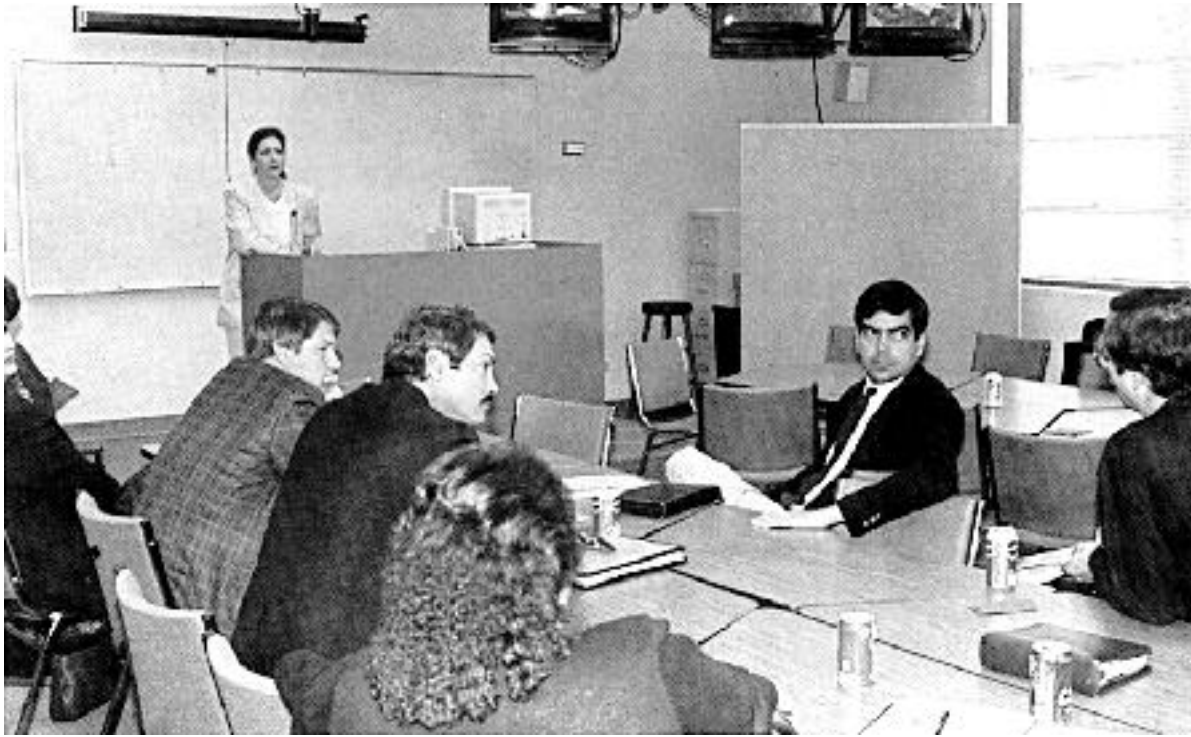
Accolades and Recognition

The San Marcos candle is not being hidden under a bushel. It has, in fact, received national and international attention. A contingent of Polish educators, including a

member of the Polish Parliament, while on a tour examining United States education, spent a large part of their one day in Texas learning about the SWT-CPDT professional development program and experiencing instruction in Bowie’s ITV classroom. Their visit to San Marcos was hosted by the Texas House of Representatives Committee on Public Education. The San Marcos guest book also contains the names of visiting Russian and Puerto Rican educators.

Greg Laughlin, U. S. Congressman from Texas’s 14th district, visited Bowie Elementary School last February to observe the partnership among San Marcos CISD, SWT, and Century Telephone Company. When the heads of the State Departments of Education from all 50 states came to Austin last September for a State Education Network Workshop, Gayle Gaston of Highland Park Elementary in Austin and Connie Stout, TEA, arranged for them to visit Highland Park for hands-on and focus group activities in the CPDT program.

The San Marcos CISD received praise in its annual School Performance Review by the Texas Office of the Comptroller. The report from Comptroller John Sharp to Governor Richards and to members of the 73rd Legislature honored San Marcos with six commendations, one of which was for the



A delegation of educators and government officials from Poland experience the potential of the ITV classroom at Bowie Elementary School.



Bowie Elementary School third grade students demonstrate their computer knowledge for Congressman Greg Laughlin in the computer lab provided by the SWT CPDT project.

“impressive installation” of the SWT-CPDT program and the positive attitudes it has fostered. In celebrating the first year of the SWT-CPDT program, Lionel Meno, Texas Commissioner of Education, applauded the efforts of the program in providing “real-world” experiences for the SWT student trainees.

In January, a group of representatives from several TEA Regional Service Centers and administrators from Dibol ISD visited the SWT-CPDT projects in San Marcos. These groups, who were interested in learning more about the technology of distance learning, came to see SWT student teachers in the SWT ITV classroom observing instructional practices in the Bowie ITV room. They also saw how high school students are able to take SWT classes via ITV, how Bowie students make videotape presentations, and how students can interact with SWT classrooms and with other San Marcos classes. Bowie teachers Margie Scull and Susan Kasper demonstrated how they are using HyperCard and telecommunications in their classrooms. A project by a San Marcos high school student who surveyed a calculus class taken interactively through SWT was also demonstrated.

In May, a group of educators from the East Texas Learning Interactive

Network Consortium (ET-LINK) visited the ITV classroom at Bowie to learn what the room looks like, how the interaction occurs, and how the SWT-CPDT utilizes their classroom.

Margie Scull and Susan Kasper were recently recognized at the annual meeting of the Texas Computer Educators Association by winning two of the four state-

“The kids love to come to school... Discipline is not a major problem.”

wide awards presented at the meeting. Scull won the Teacher Prepared Materials Contest for her HyperCard stack on the history of San Marcos, a multimedia presentation now used by the entire third grade at Bowie for their educational unit on the community. Kasper received the Professional Development Scholarship which she used to develop an Internet-based mentoring program for Southwest Texas education stu-

dents who work under her direction as pre-service teachers. “I am seeing the edge that SWT students are getting,” she explains. “They could help others with tips for being a good teacher as they communicate with students from all over the world.”

Evaluation and Results

Positive results are evident from this SWT-CPDT program. It is not yet time to compare TAAS scores, but Dr. Anderson is expecting significant improvements. If you ask Sarah Lesak about her results at Bowie, you should be prepared to sit back and listen. Bowie has the highest attendance records and lowest absences in the district. “The kids love to come to school,” she proudly states. “Discipline is not a major problem.”

The annual parental opinion survey has been extremely positive over the past three years. Teacher motivation and morale are high. “We have a true family atmosphere,” explains Lesak. “We fully support each other. When one wins an award (and this has happened on several occasions since becoming a CPDT site), we all win.”

With regard to teacher training, Dr. Beck reports that those participating in the CPDT field-based block

program are, as a group, performing measurably better than those in the traditional teacher training programs. "They score 5-7 points better on their ExCET exams," he states.

"CPDT was a 'good' idea," states Sarah Lesak. "Its graduates hit the ground running."

Teacher Satisfaction

Lori Jackson's fourth-grade room is typical of other classrooms at Bowie. Students sit in small groups around tables or in other arrangements according to the needs of their projects. When they need certain information obtainable from the computer, they go to one of the networked Macintoshes in the room and get it. This may involve accessing reference material on their local network, or it may involve traveling the Internet which is available throughout the

"The biggest change in my teaching has been in the technology aspect. I am so excited about the technology in my classroom."

day. Or they may pick up the telephone (which is in most classrooms) and call a local business or a local expert for needed information.

Telephones in the classroom are greatly appreciated by Bowie's faculty. How do teachers feel about incoming calls from parents or administration? They much prefer them to public address system interruptions. And the ability for teachers and students to call out is viewed as a positive plus.

Pat Curtin says that technology causes teachers to change the way they teach. The teachers at Bowie agree. Listen to Mari Morales.

The biggest change in my teaching has been in the technology aspect. I am so excited about the technology in my classroom. The computers are used in so many ways that I wonder how we ever got along without them. I see limited-English speakers doing wonderful writing and composing on the computer. The telephone has also been invaluable to me and my children. It not only gives the children a feeling of security to know their parents are only a phone call away, it is a valuable research tool in the classroom.

And how do the teachers feel about their working relationships with the SWT interns? Rhonda Carnes says, "Working with the SWT students has been a very positive experience, and they are very competent and professional. We share things that I wish I had known prior to my first year of teaching." Pam Thomas adds, "I especially appreciate the SWT students in my classroom. At first I felt a little intimidated with having someone in my room. However, after one semester, I was asking 'When will I have CPDT students again?' They are such an asset to both my kids and myself."

So are the teachers happy with SWT-CPDT and what it has done for them? Mari Morales seems to be speaking for all:

I am so very glad that I did not let my fears dictate my decision to participate in the CPDT. I have truly been happy as an educator and do not regret the time and effort that has been part of this project. I will never be able to go back and teach the way I did for 15 years. You have changed me forever. 🐾

(Left) SWT pre-service teacher students receive hands-on work in the profession, benefiting not only their education, but also the education of San Marcos CISD students. Here a SWT student works one-on-one with a Bowie third grader.

(Below) Bowie teachers are frequent guests in the CPDT lab as they work with CPDT staffers on new learning techniques and other continuing inservice. Above, teacher Curtis Wubbena works with a group of students in the lab.



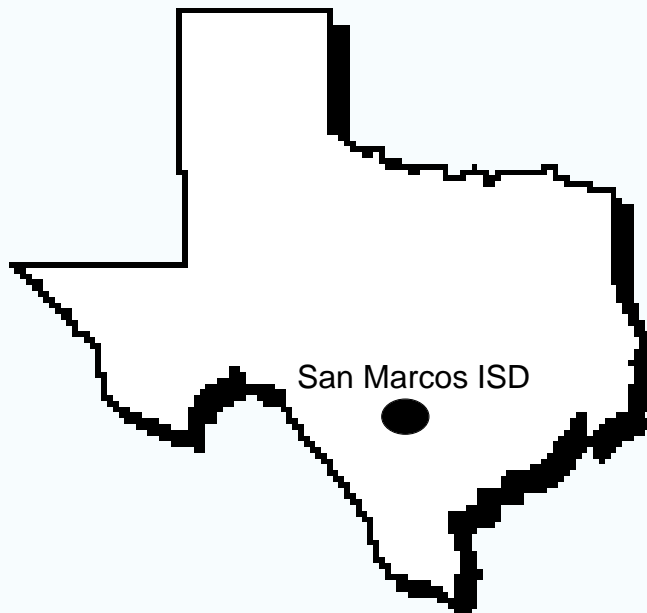
TECHNOLOGY PROFILE OF San Marcos ISD

LOCATION: San Marcos, a community of 29,000, is 30 miles southwest of Austin on Interstate 35. At the edge of the Hill Country, San Marcos is the home of Southwest Texas State University (SWT) and the Gary Job Corps.

NUMBER OF SCHOOLS AND STUDENTS: The San Marcos Consolidated Independent School District (SMCISD) consists of one high school, one alternate high school, one junior high school, one intermediate school, four elementary schools, and one pre-kindergarten center. A second junior high school is currently under construction. Total school population is 6,600 students.

TECHNOLOGY SUMMARY: Two classrooms (the high school and Bowie Elementary) are equipped for two-way interactive audio and video communication. Digital fiber optic lines connect with two similar classrooms at SWT and one at the Gary Job Corps. Computer labs on each campus are equipped with networked Macintosh computers communicating via Ethernet. Bowie Elementary also has classrooms with two or three networked computers, telephones, and convenient access to the Internet via a direct 56 kB line to SWT.


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

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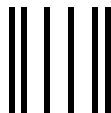
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