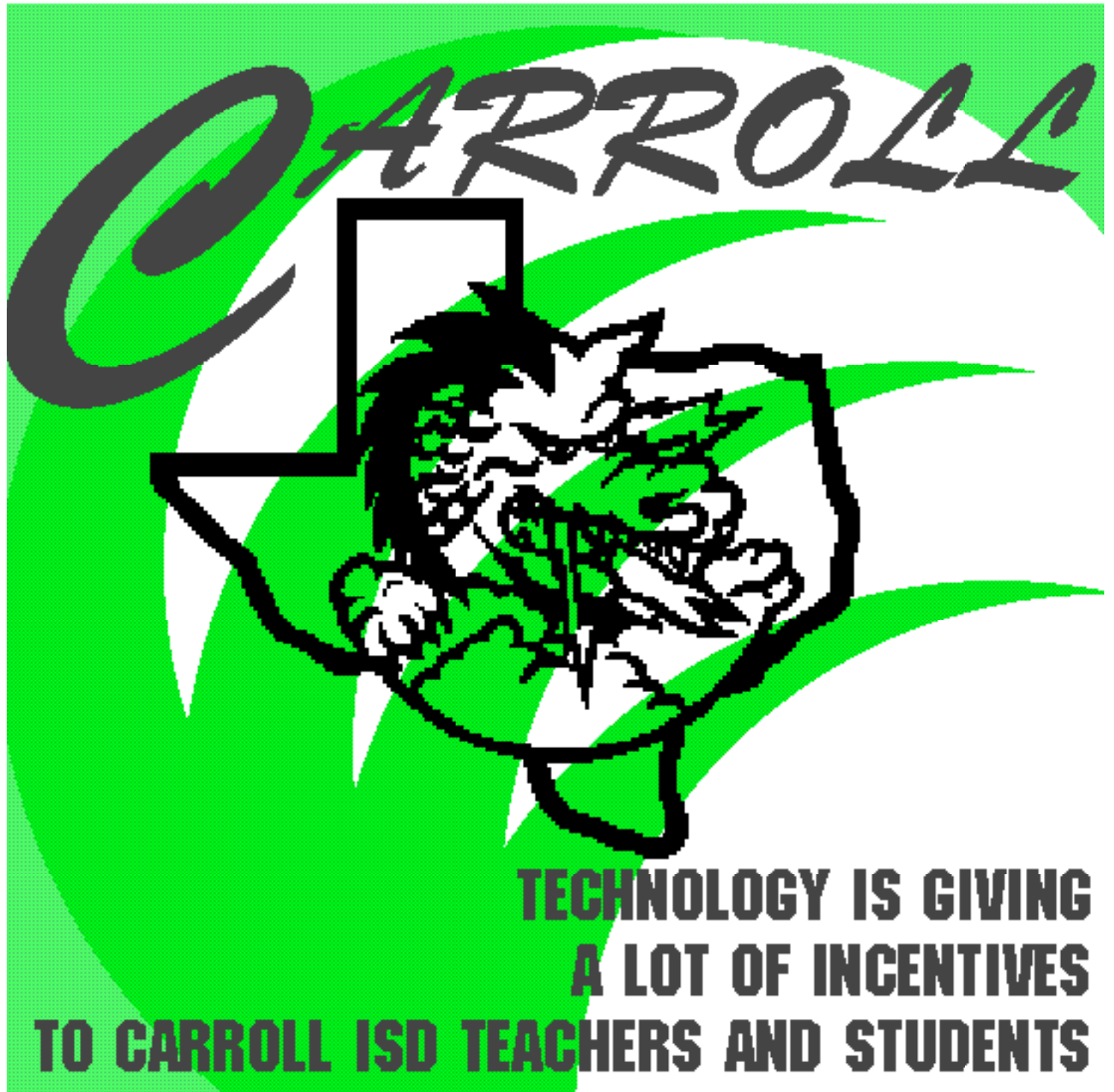


IMAGES

...OF TECHNOLOGY IN TEXAS SCHOOLS

WHEEL

..published by the
Texas Center for Educational Technology



CARROLL

**TECHNOLOGY IS GIVING
A LOT OF INCENTIVES
TO CARROLL ISD TEACHERS AND STUDENTS**



Bill Branum (above), Superintendent, and Steve Johnson (below) Executive Director of Special Services have brought Carroll ISD to the forefront of educational technology.



Technology is Giving a Lot of Incentives to Carroll ISD Teachers and Students

School officials at Carroll ISD, one of Texas' fastest growing and most energetic school districts, are literally putting their money where their mouth is — a \$600 stipend for all professionals in the district — to make sure the teachers can stay ahead of the students in technology.

After all, the students, with the help of a donation from IBM, are already immersed in technology. As one example, they have started a worldwide bulletin board system called "Dragon Net" that will eventually let everyone in the community access their system free of charge.

So it should come as no surprise that teachers are being urged to stay ahead of the students. As an incentive, Carroll officials have budgeted stipend money for every teacher, and they expect 100 percent of them to earn the annual stipend. In the 1993-94 school year, 98% of the Carroll ISD professional staff earned the stipend. The district-wide

technology committee has developed new competencies for the 1994-95 school year, with the same participation expected for this new level.

Carroll ISD is accustomed to fast change and being the best. Its high school football team, the Dragons, have won two consecutive Class 3A state football titles and is tied for the nation's longest winning streak at 72 games. Its basketball team were state champions in 1993. Because of its enrollment growth, the district has moved up to Class 4A for the 1994-95 school year. As in athletics, the technology challenge for the district is to be able to do everything it wants to do as fast as it humanly can.

A new demographics study shows that population in the school district increased from 5,624 residents in 1980 to 9,082 in 1990 — a 61 percent jump. The district includes most of the city of Southlake and small portions of Grapevine, Keller, Westlake, and Colleyville. Its proximity to Dallas/Fort Worth

International Airport and Alliance Airport, north of Fort Worth, makes the city desirable to new companies, jobs, and homes.

The district has approximately 3,500 students — well ahead of projections — and all five of its schools are bursting at the seams with students. The demographics study, predicting that Carroll enrollment will increase to about 5,000 students in 1998, prompted officials to call a \$33 million bond election. Its passage in May 1994 earmarks \$2.7 million for technology at all school levels throughout the district. Thus the importance of technology competent teachers and the stipend.

To earn the stipend, professionals are asked to complete seven of ten technical competencies within the school year. They can be individualized to the subjects or grades they teach and tailored to the technology available at their individual campuses.

The technology competencies for the 1993-94 school year were:

- ① Demonstrate knowledge of equity, ethical, legal, and human issues of computing and technology, and also model appropriate behavior. (e.g. not copying software, not vandalizing someone else's files, viruses, security integrity, etc.)
- ② Demonstrate the ability to

“Passage of the bond in May, 1994 earmarks \$2.7 million for technology at all school levels throughout the district.”

operate a computer system to successfully utilize software. This includes, but is not limited to, turning the equipment ON and OFF, launching application programs, navigating through the program menus, loading and saving files, and having a working technology vocabulary.

- ③ Demonstrate the ability to use two of the three basic productivity tools, e.g. a word processor, spreadsheet, and
-

“To earn the stipend, professionals are asked to complete seven of ten technical competencies within the school year.”

database. Administrative uses might include letters or memos, budgets or grade books, and class rosters, respectively.

Educational uses might include stories or poems, problem-solving activities, and report research.

- ④ Demonstrate the ability to use a graphics program, e.g. Print Shop®. Uses might include generating banners, cards, or fliers.
- ⑤ Demonstrate the ability to utilize emerging technologies, e.g. CD-ROM and laserdiscs. These applications would vary by campus.
- ⑥ Demonstrate the ability to access available networks, e.g. TENET or StarText.
- ⑦ Demonstrate the ability to perform minor trouble-shooting. This might include checking for loose cables, loading paper in the printer, etc.
- ⑧ Demonstrate the ability to effectively utilize and integrate available technologies into the curriculum. This might include use of multimedia (e.g. laserdisc, CD-ROM, etc.) for presentation use of on-line research facilities (e.g. card catalogs, TENET, etc.), use of calculators for problem-solving, use of computer programs for tutorials and reinforcement, encouraging the use of word processors and other application software by students, and developing lessons that



Sharolyn Peel congratulates David Jenson on his progress in Carroll's micro computer applications lab.

incorporate technology as an integral part.

- ⑨ Demonstrate the ability to evaluate software from an educational standpoint. This would include checking for appropriate grade level content and reading level, as well as scope and sequence. It would also include operating requirements and licensing agreements.
- ⑩ Continue searching out new technologies that might enhance student learning, and investigate these when possible.

Teachers are given a worksheet to record progress toward their

proficiency. They may take a written test over competencies 1 and 2, show documents for 1 or 5, and do demonstrations for any of 1-7. A building supervisor signs off on each

“We did a survey, and the teacher technology stipend program is one of the best things we’ve ever done.”

competency as it is completed.

The move to make every teacher computer literate came at the beginning of the 1993-94 school year. Each teacher at Carroll High School and Carroll Middle School was to use the district’s computerized Gradebook system. The rest of the schools will implement the Gradebook program during the 1994-95 school year.

“We did a survey, and the teacher technology stipend program is one of the best things we’ve ever done,” said Steve Johnson, Executive Director for Special Services. “We will be offering additional

competencies this year. The District Advisory Council, made up of representatives from each campus, will refine and select appropriate competencies that will extend the teachers' knowledge base and encourage technology applications in daily instructional activities."

Intermediate School Principal Jim Henson adds, "Training the teachers on Gradebook empowered the teachers to explore other areas of technology. But if you get in too much of a hurry, you can disempower some people really fast. I think the key is how much support and encouragement you give them. If you support them, you can do some amazing things with technology."

The idea of a stipend came from Superintendent Bill Branum, who believes the best schools in the future will be technologically driven. "I suggested we provide the stipend, plus technology training opportunities for all teachers at every campus, so they wouldn't have to go to another building or to another city," Branum said. "It has worked out well, especially since we designated a couple of people at each campus to be key trainers."

"Technology will be an integral part of everyone's curriculum, and our challenge, with 500 new students in the district in the last 12-14 months and 500 more expected in the next



Robert Bastian (left) and Tim Shore (right) receive basic programming suggestions from lab manager Deanne Jolley.

12-14 months, is to keep everything up-to-date for our students' use," Branum added.

Carroll's two-year-old high school building is the district's newest building, and it was designed with technology growth in mind — no fiber optics, but a network drop in every room. A seven station 386SX CAD lab means that there are no power tools in what once was the industrial arts area. And the bond issue will enable a networked computer in every classroom for student and teacher use.

With the technology they currently

have, school officials are hoping for these student outcomes during the current school year:

- ❶ Use computer applications for problem solving, including, but not limited to, word processing, database, spreadsheet, and graphics.
- ❷ Create finished products using guidelines that would be acceptable in the "real world."
- ❸ Effectively use available research and telecommunications skills like MOLLI, TENET, Big Sky, etc.
- ❹ Acquire keyboarding skills.

In order to facilitate these outcomes, in addition to the CAD lab, the high school also has:

- An Apple IIe computers in special education classrooms for developing word processing and academic skills, including three dot matrix printers.
- A 24-station Futura 2000 386SX lab for keyboarding and microcomputer applications classes. Teachers use this area for Gradebook and for training on other DOS software. Multimedia, Internet and TENET will be added later. Equipment includes six dot matrix printers, one Futura 2000 486 File Server, linked to part of the building, district, and Region-X Service Center network.
- Two separate 20-station IBM Model 30 286 labs, one for computer science, computer math, and keyboarding classes; and the other for keyboarding, microcomputer applications classes, and foreign language instruction. The first lab has sixteen IBM Model 30 computers, four IBM Model 20 computers, five dot matrix printers, and an IBM model 65 file server. The second has five dot matrix printers and is networked with the file server in the first lab.
- A 9-station Mac Lab, including six Mac LC II and three Mac Classic II computers for process

writing, at risk students, foreign languages, and teacher use. With the addition of a laser printer and other peripherals, this area would allow for elaborate teacher/student productivity, including multimedia.

- A 24-station Mac LC II lab, including four dot matrix printers, a Mac LC II print server, and the Ethernet network, for process writing for all English classes. Future needs are the involvement of software to check grammar, use of databases, graphics, and spreadsheets to allow for enhancement of student writing. A laser printer will be

added in order to emphasize a finished product.

- An 8-station Macintosh journalism lab with a scanner and two laser printers to produce the yearbook and school newspaper.
- A 28-station Sony multi-purpose information lab, used for all foreign language classes, that has a computerized console, a laserdisc player, an 8mm/VCR tape editor, fast tape copier, and LP-10 projector, camera, and recorder with audio.
- A microscope video presentation station in the science department that has a small video camera with microscope bracket to aide



Judy Brown, librarian, operates the Dragon Net system as Blair Parsons observes.

teachers and students during lab exercises.

- ◆ A satellite dish on the building to view public domain TV broadcasts and enhance long distance learning.
- ◆ And teacher stations in several locations for grade input and productivity. They include one Futura 2000 386SX station networked to the building, district, and Region-X, along with laser printers at some stations. Future needs include adding Internet and TENET to help lesson plan management.

Besides the basic listening and recording functions, and interacting with the teacher, students can work on language drill practices that can be repeated up to 20 times. They can also be paired in groups and have their discussions monitored, listen to videos, laserdiscs, and CDs; switch back and forth between the use of those three media; use the Sony P-110 videocam to zoom in on pictures, use all the media to put together presentations; and be able to administer practice test questions (e.g. SAT exam) which will show each student (on a screen) which questions were answered correctly or incorrectly, and show graphically how each student performed in comparison to the rest of the class.

The technology currently in the high school library includes:

- ◆ A 3-station Mac Classic setup for students to use for word processing and other class needs, including one dot matrix printer.
- ◆ Mobile Macintosh computers — three Mac Classic IIs, three LCD display panels, and three carts — for use by teachers for productivity and class presentations.
- ◆ A 2-station student research area, which is part of the building, district, and Region-X network, with a CD-ROM drive for student/teacher use of the CD-ROM resources and TENET. With the addition of a CD-ROM tower, two modems, a printer, and software, students can use this area to research topics via databases and long distance resources.
- ◆ Two laserdisc players for multimedia presentations for science and social studies students.
- ◆ Plus the Dragon Net station.

Dragon Net has allowed high school students to think on a larger scale. With a contribution from IBM Corporation's Fund for Community Service Program, Ron Berman, a delivery manager for Skill Dynamics, an IBM Company in Dallas, obtained a PS/2 Value Point Computer System, worth \$4,000, to get the bulletin board system started. Berman, also a community volunteer, provides project management for the bulletin board

system (BBS).

The students' goal for Dragon Net is simple: "to use technology to expand our understanding of our community and our world." Expensive? It will not cost district taxpayers anything since students are asking for money or equipment donations.

Berman believes students will gain valuable training in real-world use of the technology, and he makes the information available to anyone in the community — day or night. All that is needed is a computer, a modem, and a phone line.

Using the Internet, what you get (as noted in the high school newspaper) is a chance to do such things as: send a message to a pen pal in Japan and receive a reply, look up a reference to Dostoevsky from a Russian University, and call NASA to find out what they are up to!

About \$10,000 in donations is needed to operate the BBS on a community-wide basis, and \$2,000 to \$4,000 each additional year goes to pay phone bills and other costs. It's estimated by Berman that the system costs two cents per student per day to operate.

Dragon Net goals include getting all high school students on-line, developing a training manual, and getting the faculty and community users on-line during this school year.



Mandy Moore (above left) and Courtney Miles (above right) focus their cameras as Bobby Parham (right) prepares to deliver the morning news from Carroll High School's TV broadcast studio.





LeMoyne Dunn (center), technology assistant administrator at Johnson Elementary, takes special pride that 2nd graders learn to touch type and keyboard with correct fingers.

Last year, seniors Brian Hatcher and Cliff Corder got involved with Dragon Net because of their interest in technology. With the assistance of a steering committee of community members, administrators, teachers and students, they planned for the system to help students with employment listings, college visit reviews, SAT deadlines, community events, concert and movie reviews, news events, software reviews, scholarship information, teleconferencing, and classified advertising.

“One of our biggest problems is that you have to get certain phone numbers, plus permission to use

them, and being a student, it is sometimes difficult to get people to believe you and trust you,” Corder said.

The school’s multimedia production studio, which exists in its own right, serves also as a complement to DragonNet. Sophomore Bobby Parham is one of several journalism students who broadcast current world-wide news plus school announcements each morning. These students also do interviews and prepare broadcast summaries of newsworthy activities throughout the community. The lab is fully equipped with lights, cameras, sound system, and facilities for editing,

mixing, and broadcasting.

Being able to cruise the Internet has benefited more than just the cruisers at the high school. In a merit project program for gifted students at the intermediate school, each student had twelve outcome measures, and three of those were technological. Specifically, one outcome is how to get information about the study topic through the Internet. Students must not only demonstrate how they access the Internet, but also how they use the information obtained through the Internet in their study. One student, doing a report on Ann Frank, faced the question dilemma of how to prove the diary was really

Ann's. Easy. After determining the type of evidence needed, she accessed several foreign libraries via the Internet and found the required information.

Technology also helped solve a curriculum problem when the site-based team at the intermediate school recommended that the teaching of foreign languages be started earlier than the seventh and eighth grades. It meant looking at all the different instructional options in order to decide which would be the most cost effective and still be instructionally sound. Rather than hire separate teachers for Latin, Spanish, French, or Japanese, the school chose

satellite telecommunications delivery of all four language courses and their cultures. Tapes of the same language information can also be used at the elementary school level.

“The greatest joy of having access to technology is late on a Sunday night when your child says, ‘Mom, I need to know about frogs tonight!’ So you dial up the Internet and find out about frogs.”

“The greatest joy of having access to technology is late on a Sunday night when your child says, ‘Mom, I need to know about frogs tonight!’ So you dial up the Internet and find out about frogs.” states LeMoyne Dunn, technology assistant at Johnson Elementary.

Johnson Elementary (grades K-4), where Dunn is assigned, puts an emphasis on writing with 94 computers for student use only. “The student-computer ratio here is 6.2 students per computer, which is exceptional. When you think about it, every student has his/her own ruler, a pencil, and a notebook. If you use technology as a tool, then



Johnson Elementary School librarian, Pat Jefferson, purchased a software package to help 3rd and 4th graders keep up with their progress on the 20 best children's books they are reading.



At Carroll Intermediate School Janice Smalling (left) and Jane Doclar (right) prepare for an ABCD presentation to the teachers.

why not let every student have access to his or her own computer?" Dunn asks.

Dunn spoke while in a lab being used by second-graders. "They are all keyboarding with the correct fingers because they learn how to touch type in the second grade, and it releases their communication so they can say what they want to say," she added.

Even more advanced is the way third and fourth-graders at Johnson Elementary use the computer to tabulate their votes in a state-wide contest to pick the most popular of 20 books they've read during the year. Called the Bluebonnet Program, school librarians from

across the state pick the 20 best children's books for the year and nominate them as Bluebonnets. The children read them and report on them. Those who read all 20 at Johnson are honored at an ice cream banquet at the end of the year.

Johnson librarian Pat Jefferson purchased a software program (The Electronic Book Shelf), so the students can take a test on each of the books to gain credit for the book and to qualify for the banquet. The computer software keeps track of the number of books they've read. When they have read five books, they earn a bookmark; ten, a button; fifteen, an ice cream treat at lunch; and twenty, the banquet that includes

several prizes and games. The students also learn from using the computer software, which then frees Jefferson to help students in other ways. Last year, 60 percent of the third and fourth-graders completed all of the tests.

Jefferson is also thankful her library inventory is computerized and a scanning system is used to check books in and out. "I had one teacher bring in 150 books this week, and it took less than a minute to check them in. Our monthly circulation of books is about 3,000. Can you imagine how long that would take if we were not automated?"

Steve Johnson said, "There is much

to keep up with when you consider all the hardware, installation, warranties, site licenses, administrative duties, etc., but I've learned a lot. It helps that we've had a district technology committee and technology teams at each campus. We are adding a position of instructional technology specialist for the district to assist with planning and implementation of our district technology plan."

The district developed its first technology plan three years ago, and 99 percent of that plan is now complete. The district committee is currently writing a three-year follow-on plan with input from each campus' technology plan.

"Our long-range plan is to have at least two well-trained people at each campus representing the DOS and Macintosh environments," Johnson said. "It has been exciting to see the kinds of requests we are getting for technology related hardware and

"If you're here for the students, you've got to build your school for them, whatever it looks like."

software as we prepare to spend bond monies."

Besides upgrading in telecommunications and multimedia, Johnson believes that it can be possible for the district to purchase a computer for every teacher to use for as long as they are employed by the district. "It's a good investment and use of our money," he said. "The connectivity is in place at every building, so there is potential for use of telecommunications."

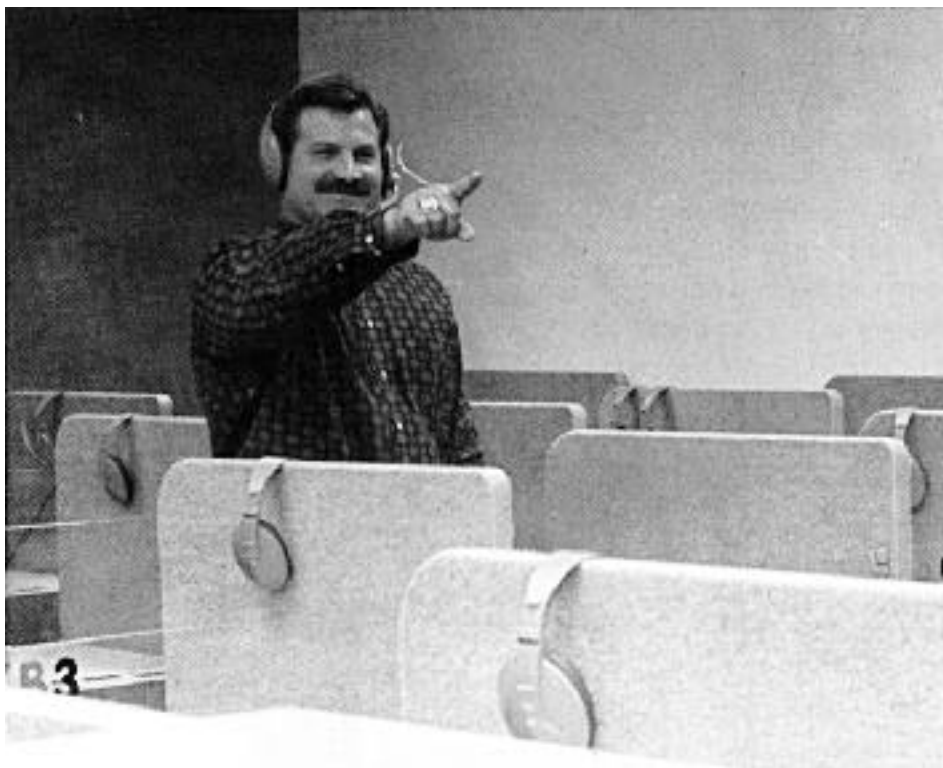
"I also see us going into more specialized technology courses, such as advanced programming and systems analysis, because of the demand in our ever-changing world. A lot of our students go to college, and we have to be in line with what the universities are doing. The next five years could produce a transfiguration of what our curriculum looks like. With electronic text, we may not have

textbooks in five years," Johnson said.

"We're a growing school district that hires a lot of teachers who are visionary and can be catalysts for change. I've heard Superintendent Branum say over and over that we're here for the students, and the things we want to do, we can't do from 8 a.m. to 3 p.m. So we may need to be



Stacy Everheart, a student teacher, renders assistance in the Micro Computer Applications Lab.



open from 8 a.m. to 10 p.m. for all the things they will want to do. If you're here for the students, you've got to build your school for them, whatever it looks like."

"I really believe if we want to teach every student how to think and to solve problems, we need to teach them how to use technology and how to work with each other in teams. I'm not sure we have to teach them anything else. You should never have any student leave your school district who can't do all of these things," Johnson said. 🐾



Principal of Intermediate School Jim Henson (above) believes Carroll High School is built with future technology in mind, including this 28-station multi-purpose information lab used for all foreign language classes. Suzanne Wollard (below) keeps students busy and challenged in Carroll Intermediate School Computer Lab.

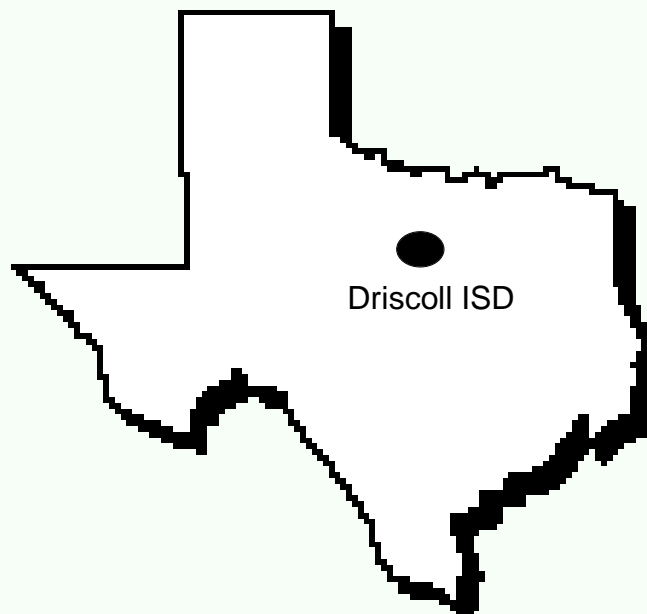
TECHNOLOGY PROFILE OF Driscoll ISD

LOCATION: North central Texas between Dallas and Fort Worth, a rural community with 19.5 square miles and proximity to Dallas/Fort Worth International Airport and Alliance Airport.

NUMBER OF SCHOOLS & STUDENTS: Total of five schools: two elementary (K-4), one intermediate school (5-6), one middle school (7-8), and one high school (9-12), 3,500 total students.

TECHNOLOGY SUMMARY: Computer labs in every school, all district facilities are on a network (e-mail, gradebook and budget finance, student management applications); Channel 1 grade 6-12; satellite capabilities at intermediate and high school, Sony language lab and TLTG chemistry lab at the high school. Proposed bond with \$2.7 million included for technology.


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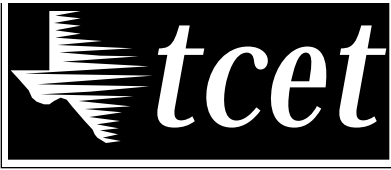
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This series of TCET Reports features Texas educators who each possess several common characteristics: a willingness to take risks, a drive to see the potential of all students realized, and a belief in the power of educational technology.

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 to a new century. 

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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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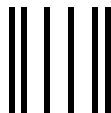
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