MAGE

.. OF TECHNOLOGY IN TEXAS SCHOOLS

IMAGE

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Texas Center for Educational Technology

Burleson Teachers and Students Finding A World of Technology at Their Fingertips

Brenda Yowell had her high school micro-computer applications students playfully toss a spool of string around the classroom until almost every student had the string touching them. "This," she said, "is kind of what the Internet looks like and how it works."

"There isn't one super huge computer in Washington D.C. that does all this," Yowell tells her students. "It's a bunch of little computers or pretty big computers connected all over the world."

"Every student graduating from Burleson High School must have at least one year of computer training."

All of a sudden the playing stopped, and the technology lesson hit home. Each one of the students in the room could have been sitting at a computer anywhere in the world, a computer that could provide any information that they or other people anywhere else might want to use. All they had to do was hook up with a telephone line and modem, like Yowell had them do with the string, and the information was theirs to use. When one of the students dropped the string as it was tossed his way, Yowell playfully said, "and that's what happens when communication doesn't work."

Yowell's lecture on telecommunications and the technology a student uses to communicate with the rest of the world, comes with a promise. "When you get through with your project, you will have opened up the worlds of learning with your fingertips while sitting in front of a computer in this classroom, the same as more than 10 million people in 127 countries do who use the Internet. You are going to know people very well, almost personally, in South Africa, Australia, Estonia, and many other places, and when you do this, you will get the feeling of what's going on in all of the world. And I don't know about you, but I was born and raised in a small town, and I thought that was my universe."

Welcome to technology at its classroom best in the Burleson ISD, a Class 5A school district just south of Fort Worth on I-35W. It's a district with some big technology and communications plans, led by people like Yowell, who helped start much of the technology thinking in the district, and the district's new technology coordinator, Doug Futch. The plans and Futch are both symbols of the recent big commitments the district has made to technology. Burleson ISD has gone beyond the state's requirement that every student getting an advanced high school degree must have at least one year of computer courses. Starting with the 1993-94 freshman class, EVERY student graduating from Burleson High School must have at least one year of computer training.

Superintendent Gordon Cockerham

Brenda Yowell shows students some the countries they can expect to get computer messages from and the mailbox in which they'll put each country's name.

says the technology emphasis followed a natural desire that the board and administrators had "to allow our students to better function in society as our resources would allow us to do." Taxes were raised to support the technology along with other district needs and "we've been pleased that the community was convinced that this was the right thing to do," Cockerham said. "We had attempted to stay abreast of the changes, but discovered that we needed someone like Doug (Futch) who had more than just a general educator's knowledge of the technology. He had done a lot of work with teachers at the regional training center and had written some curriculum."

High school Principal Terry Ford believes his department chairmen and teachers have also been an impetus for the technology movement because each one of them is aware of the technological advances being made in each academic area. "When they present programs to the board, they know how to plead their case. Principals are always asking for things, but when it comes from the teachers, the board really listens to them, and I think it is wise. They are on the cutting edge," Ford said.

"This is the best job I've ever had," said Futch, a former middle school teacher, elementary assistant-principal, and computer literacy teacher. "I enjoy technology and working with the teachers to help integrate it into the classrooms, and people like Brenda (Yowell) and Linda Martin, who was the technology coordinator before I got here, had us started in the right direction."

"We've had several opportunities to lead in technology things we've done, like being the only public school in the State of Texas to be part of a multi-media group of 10 school districts and colleges nationally put together by Tandy," Futch said. "It gave us our first opportunity

Senior Jason Stotts has learned enough in his computer classes to be a trouble-shooter and problem solver in Yowell's high-tech environment classroom.

to use multimedia machines as a classroom tool and to look at all the software and visit with the vendors. So we were in at the ground level and since then we have multimedia computers in every library, every special education classroom, every Chapter One classroom, in the science and social studies departments at the middle school, and in an entire multimedia lab at the high school."

"When I was hired by the board and the administration, the community was solidly behind bringing technology into all of our schools. They all wanted someone who would coordinate how we could best use what money we had for technology, and who would tell the story to state and national groups about what we were doing here."

"When I first got here, the district had just had a bond election and had purchased 200 work stations for an integrated learning lab. They told me that they had bought the software and the hardware, and they needed me to put it together and implement it. That's probably when the big push for networking started. We had had some telecommunications in the district when we were one of the first school districts to use the *Fort Worth Star-Telegram*'s StarText."

"Since then," Futch said, "we put in the 200 workstations and networked the labs at the elementary schools with the instructional learning software. Our goal in our state and district technology plans is to network the middle school and high school, put every classroom with a computer on the network, then network the elementary school and all the other schools together. Then we'll have elementary teachers doing e-mail with the high school teachers and sharing curriculum across grade levels."

"Doug has really been a catalyst for the whole technology program because he has high enthusiasm for

High school principal Terry Ford believes his department chairmen and teachers have helped to be the impetus for the district's technology movement.

technology that has spread and spilled over into the whole district," Yowell said. "He's done an excellent job on our technology plan, and along with several teachers and community members on our advisory group, we all knew that we needed to get technology in the hands of the teachers first. He and the school board have gotten solidly behind teacher training."

Both Futch and the teachers get a lot of help from Yowell, who is teaching weekly workshops throughout the year for her fellow teachers. "I teach introduction to computers, the basic terminology, so when they read a computer ad, they know what they are reading." Holding a 3 1/2" disk, she exclaimed, "A lot of people think these are hard disks because they are hard, and that's just because nobody ever sat down and explained the basic terminology."

"Then I teach them Beginning Telecommunications since all our schools and their libraries have Prodigy, StarText and TENET. We tell the teachers that this could be useful to them, and once they are convinced of that, they get the kids involved. Just last night, I had one teacher give me a big hug and tell me when she left, 'You know, I think I can do this,'" Yowell said. The teacher workshops are not mandatory, and between 25-30 attend each Thursday night.

"I think many school districts have problems with technology because they make it available to the students, but they don't train the teachers. So if you're a teacher and don't know how to use it, you can't benefit and your students can't benefit. You're also scared to death!" Yowell exclaimed. Said Futch, "If you put computers in the classroom without teacher training, they're just going to be an

expensive paper weight. But if you put the technology in the teachers' hands first, by training one teacher, then he or she will train 150 students."

The technology Yowell has to use includes twenty 486DXs with 370 meg hard drives, Super VGA Monitors, each with a CD-ROM and Photo Ready so they can take photos and scan them in for presentation materials. Next door is a networked lab of 486s used for keyboarding and Micro-Computer Application classes. Another classroom has twenty-four 486s for vocational business information processing to help students prepare for the job market after graduation.

"Principals are always asking for things, but when it comes from the teachers, the board really listens to them, and I think it is wise."

Yowell's microcomputer students certainly benefited last year from her teaching, and that set the stage for this year's string tossing.

"I've made friends by telecommunications in Norway, Luxembourg and Denmark, and we message each other back and forth all the time. I know about their students and they know about my kids. Why would I tell strangers all that information about myself?" Yowell asked her students. "Because I don't consider them to be strangers anymore."

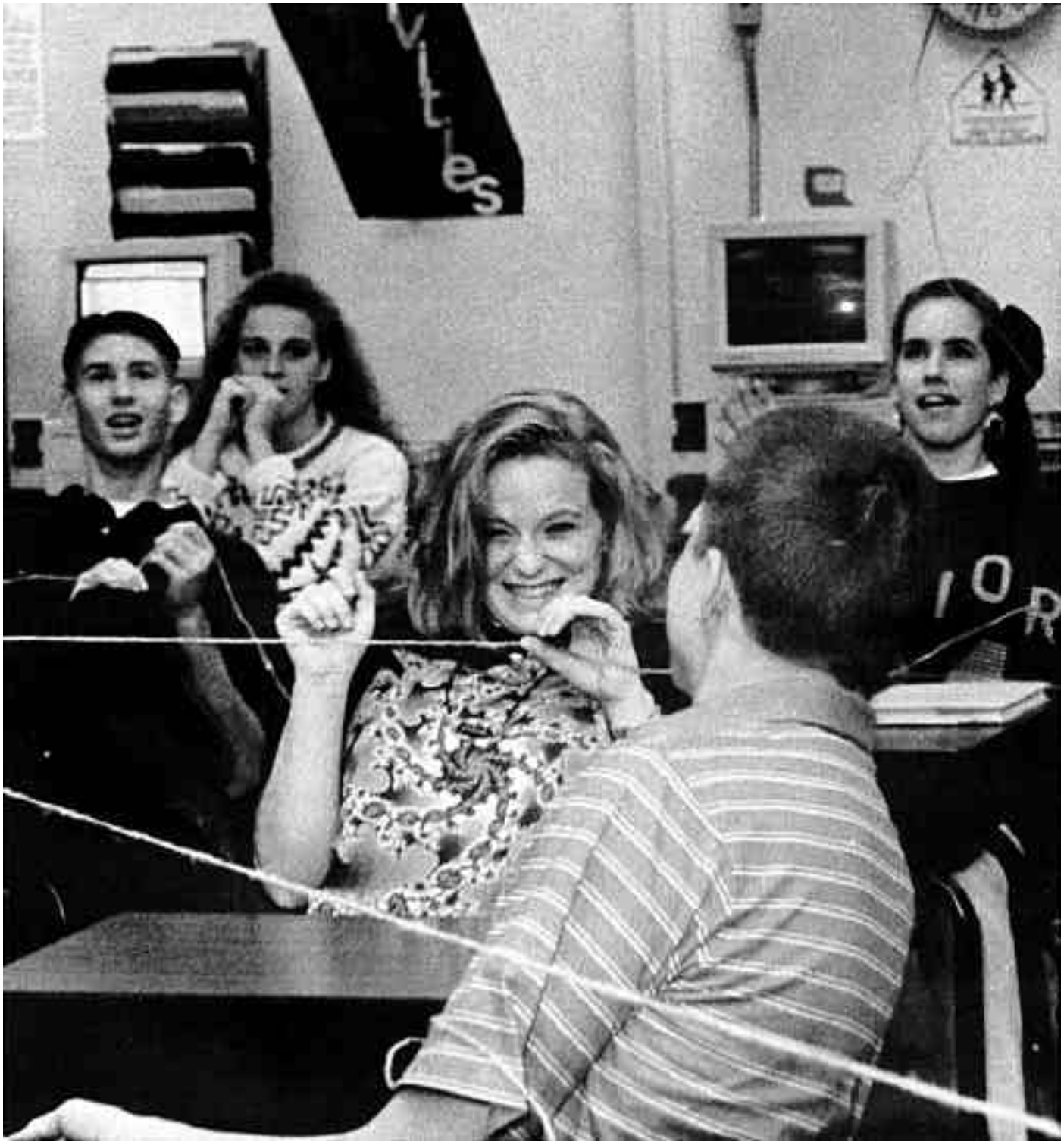
"Last year we messaged three girls in Iceland, and we exchanged cassette tapes of each country's music. Our students learned if students in Ireland called their teacher by her last name, it was considered to be an insult," Yowell told her students. "Here, if you called me Brenda, I'd probably give you a stern look. I want you to get to know whoever you communicate with, their cultures, and how they feel about their education and politics. Last year, when we messaged Estonia (a former part of the Soviet Union), we learned it was next door to Chernobyl, where the nuclear plant had problems, and the students were very concerned about radiation. When you share with other students what's going on here, they might be interested to know that we are near Glenrose and its nuclear power plant."

Yowell tells her students that they will use a software package called PC Globe, which will allow them to hear the national anthem of 192 countries and also to look at their flags.

They'll use TENET for its online encyclopedia, Internet to connect to the major university libraries in the countries they will be studying, and the CIA database for any city or country information in the world.

"It's hard to imagine how much you can connect to," she said. "In fact, you will get more data than you can use, but one of the main things about research, is to pick out the important things." The class project includes exchanging video and audio cassette tapes about local places of interest and customs, aided by snapshots, posters, and letters. Then Yowell tells her students about someone they messaged last year, a professor, who was later able to visit Texas. Several of the students met him and his wife. "You can't imagine how

"A lot of people think these are hard disks because they are hard, and that's just because nobody every sat down and told them the simple terminology."



High school students playfully toss a spool of string (circle) around the classroom to better understand the workings of Internet.

wonderful it was to finally get to meet someone we had been telecommunicating with," she said.

The project goals are clear: (1) gain a better understanding about the world and its people by communicating with other students all over the world, (2) learn to use telecommunications for electronic messaging and on-line research, (3) use higher-level thinking skills in preparing research papers and presentations, and (4) learn the importance of teamwork in accomplishing a task.

In essence, Yowell is asking her students to do what she has been asking teachers to do when she presents workshops about using telecommunications in the classroom. She believes students today are required to think and act with global consciousness, and to be aware and sensitive to other cultures, languages and people as economies continue to be interdependent, and as communications and transportation remove the walls that have separated societies in the past.

Instructional technology and media services Director Doug Futch is one of the big reasons the Burleson ISD has gotten so active in the use of computers.

No one can possibly keep up with the great amounts of knowledge, she says, without integrating the new technologies into the curriculum. The old model required students to leave their regular instruction and go take "computer" in an isolated situation, usually where they would learn programming, learn word processing or do drill and practice activities. Today, she believes, technology is infusing the entire curriculum. Examples include writing labs for language and all curriculum areas, science tools with probes and graphing capabilities, CAD tools in the vocational labs, and computers in individual classrooms.

> "The teacher workshops are not mandatory, and between 25-30 attend each Thursday night."

Like a growing number of people in her district and other districts, Yowell believes using technology provides immediate access to up-to-date data, broadens a student's perspective on issues, increases interest and understanding about cultures through global communications, fosters collaboration, and requires the students to develop higher-order thinking skills. Therefore, the educational applica-

Students (L) Tamara Neeper and Nicole Rehn, above, and Laura Gross (R) below help produce the high school's newspaper and yearbook.

tions of telecommunications become such things as cooperative learning, peer tutoring, team teaching, and teacher mentoring.

Yowell believes every telecommunications project should be carefully planned and offers these hints:

- Decide learning objectives for your students.
- Plan a project that will meet those learning objectives.
- Consider the effectiveness of using telecommunications to meet your learning objectives. Remember: the goal is to teach WITH technology, not ABOUT technology.
- Design, in detail, the project. Depending on the project, this could be done by teacher and/or students.
  - Specify an audience.
  - Specify a topic.
  - State objectives that are clearly understood by all.
  - Decide on length of time involved.
  - Decide on the frequency of TENET access.
- Implement the plan.
- Check often on progress of project.
- At appropriate time, bring project to conclusion.
- Evaluation of the project by students and teacher.

She also has some do's and don'ts for other teachers to remember:

- Don't focus on the technology; remember the modem is a tool.
- Do focus on improving student performance and learning.
- Do be aware and sensitive to the philosophic, personal, and financial concerns of others.
- Do seek additional training.
- Do form a group of TENET users to help spread the word about telecommunications in the classroom.
- Do expect to make mistakes.

> "If you put computers in the classroom without teacher training, they're just going to be an expensive paper weight."

- Do expect to have various technical problems.
- Don't fail to help train other teachers.
- Don't fail to gain support for telecommunications from the top-down as well as from the bottom-up.

Yowell also has her own rules of NETIQUETTE:

- Keep paragraphs and messages short and to the point.
- Focus on one subject per message.
- Be professional and be careful what you say about others; e-mail is easily forwarded.
- Cite quotes, references and sources.
- Limit line length and avoid control characters.
- Don't use the network for commercial or proprietary work.
- Include your signature at the bottom of e-mail messages. Your signature footer should include your name, address, telephone number, Internet and/or BITNET addresses and should NOT exceed more than 4 lines.
- Capitalize words only to highlight an important point or to distinguish a title or heading. *Asterisks* surrounding a word also can be used to make a stronger point.
- Use discretion when forwarding mail to group addresses or distribution lists. It's preferable to reference the source of a document and provide instructions on how to obtain a copy.
- Be careful when using sarcasm and humor. Without face-to-face communications, your joke may be viewed as criticism.
- Respect copyright and license agreements.
- When quoting another person, edit out whatever isn't directly applicable to your reply. Including the entire article will annoy those reading it.

Symbolically speaking, Yowell reminds everyone that "talking" with someone on a computer service can be a bit awkward. There is no voice or gesture to help get a point across. So people have developed their own language to compensate. Typing ALL CAPITAL letters, for instance, is considered yelling.

LOL is short for "laughing out loud." ROFL is even stronger—"rolling on the floor laughing."

Other jargon requires a little creativity to understand. If all else fails, Yowell suggests you turn her symbols and this page sideways.

:)	A smile
:(	A frown
:D	Laughing
;)	Winking
:*)	A kiss
:')	Crying
:P	Sticking out tongue
{}	A hug
O:)	An angel
}:)	A devil
=:)	A punker

Yowell's class project is a natural result of Goal 1 in Burleson's technology plan:
To provide students with the essential skills necessary to become proficient technology users by integrating technology into the curriculum.

From that goal comes objectives that include:
- Provide the opportunity for all students to utilize technology in all areas of the curriculum.
- Provide access for students to online databases and retrieval services.
- Research and initiate new programs utilizing the computers.
- Teach proper keyboarding techniques and word processing.

Veteran journalism teacher Barbara Tatum knows that if many of the nation's leading publications are produced on computer, it's "a good thing for us to do."

Out of these objectives are 16 recommendations that the district can use each year to measure how it implements its goals, including one that strikes harmony in Yowell's heart —Additional modem lines in classroom for TENET/StarText/Prodigy.

Like Yowell, journalism teacher Barbara Tatum remembers what it was like to produce the student newspaper during the pre-computer days. "I've been here 17 years, and we typed our stories, double spaced them, and sent them to be typeset at the printer. Then we'd get galley proofs back and pasteup the pages on layout sheets. Then the printer would photograph those sheets and run the original pages. Next, we began using Apple IIEs to set our type in columns and paste the columns in page form. Then Mr. Tyson in printing trades would set our headlines for us. Our type looked terrible because we used a dot matrix printer."

"We got Macintoshes four years ago, and we used PageMaker 4.0. Our format was three columns on an 8 1/2 x 11 inch sheet, and we published it once a month. Then we got an editor who said he wanted to put the type into columns first, then paste it on layout sheets instead of producing the whole page on the computer. I disagreed, but I let him do it just to see how rough it would be. So this year we are tiling it on the computer and using FreeHand. We produce a minimum of nine issues and want to have more. A year ago, we started doing the yearbook on the Mac," Tatum said.

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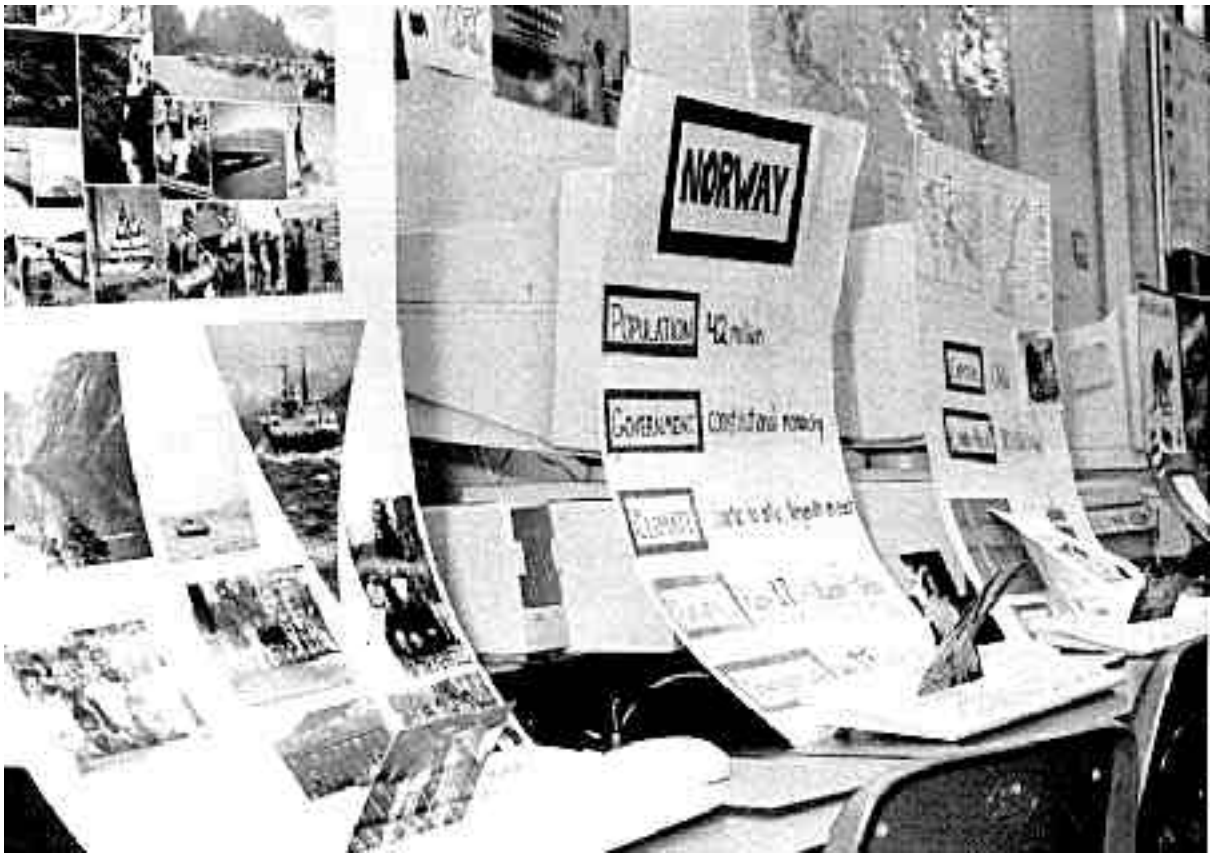
Tatum would love for her students to have laptops and portable computers to use because "journalism is a portable profession, and you have to go to the story, the story does not come to you." Until that time comes, her equipment used to produce the newspaper and yearbook includes two Mac Classics, two Mac Classic IIs, a Mac SE and a laser writer IINT printer. This must meet the needs of 92 students in three beginning journalism classes, plus 18 newspaper and 23 yearbook staff members.

"I know that most major publications use Macs, so if *Time* magazine uses them, I think maybe that's a good thing for us to do. I have students who ask for Macs as graduation gifts," Tatum said.

The challenge for Futch and others is to keep the technology momentum going.

"When you see how teachers like Brenda Yowell are teaching students to reach classrooms in Russia and the European countries from their own classroom, you see how we can bring the whole world closer," Futch said. "To do that for every one of our classrooms, we've got to have the network in place so that the modems and telecommunications go across our network. Then I won't have to put a telephone line and a modem in every classroom. So our telecommunications and our networking are headed toward the same goal. We have teachers begging for phone lines and modems, but the money is not there. But as soon as I can get them networked, then we can have direct access to TENET, and through TENET you've got Internet. When we get networked,

"Journalism is a portable profession and you have to go to the story, the story does not come to you."



Yowell's students will also make photographic and poster displays to represent each country they study.

a student at home with a computer and modem can access the information they need at night or on weekends," Futch said.

Also implemented in the fall was a pilot program at one of the elementary schools that are using older TRS80 models 3 and 4 for the Chapter One reading and math students. Their parents and guardians are brought in for computer training. Then the students can take one of the twelve computers home for six weeks, much like they would a library book. The goal is to foster a better bonding between the students and their parents and guardians that will lead to better grades. Using a modem, a similar program could allow homebound students to keep up with their studies.

Maybe Yowell had the best explanation for all the excitement about technology in Burleson. "About ten years ago, I saw all this neat stuff going on, and I wasn't a part of it because I was a business education teacher. So I left the dirty dishes and clothes at home with my husband and kids, went back to school at night, and got 18 hours in computer credit. Let's be honest; at the time I don't think I knew what telecommunications was, let alone what all was out there. But I do now, and I am learning more every day."

So are a lot more students and teachers in Burleson who are stringing along with more technology every day.

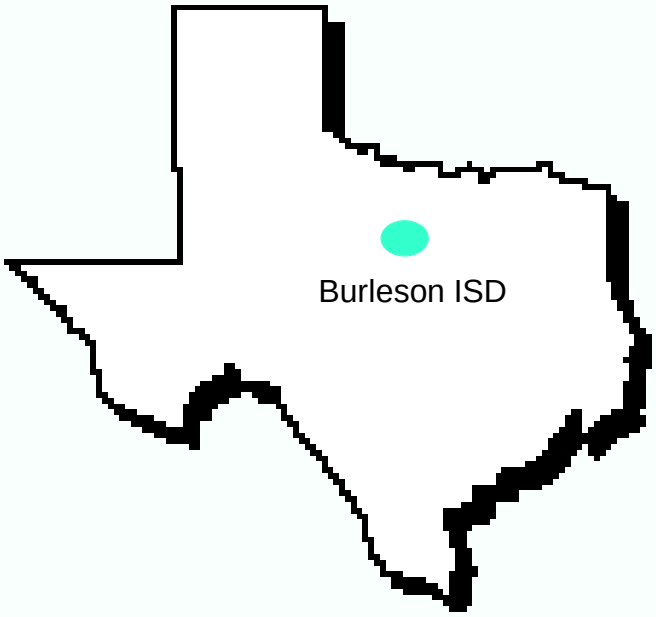
Profile of Burleson ISD

LOCATION — North central Texas, 14 miles south of Fort Worth on I-35W.

NUMBER OF SCHOOLS AND STUDENTS — Seven schools: five elementary (2,970 students), one middle school (1,136 students), and one high school (1,531 students), and 499 faculty and instructional aides.

TECHNOLOGY SUMMARY — There are Instructional Learning Labs using the Computer Curriculum Corporation's software in each of the seven schools and multimedia units in every library. Every classroom in the middle school has a computer which is on the network. Each secondary school has an on-line card catalog system connected to the network. There is also a multimedia lab and four additional instructional labs at the high school. Telecommunication accessibility is present at each school as well as in many of the secondary classrooms. There are plans to network the high school during the summer.

TECHNOLOGY CONTACT PERSON —Doug Futch, Instructional Technology and Media Services Director, (817) 447-5730, FAX (817) 447-5737, Internet doug@tenet.edu.



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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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IMAGES *Production*

Writer	**Roy Busby**
Editor	**Cher D. Ptacek**
Photographer	**Beth Richardson**

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For information about **IMAGES** and ***TCET*** contact:

Texas Center for Educational Technology
University of North Texas
P.O. 13857 Denton, Texas 76203
Kathleen Smith kats@tenet.edu
PHONE: (817) 565-4433 FAX: (817) 565-4425

Texas Center for Educational Technology
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University of North Texas
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