

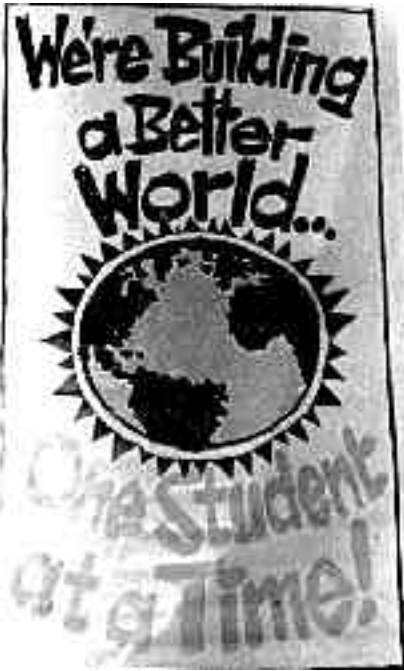
IMAGES

...OF TECHNOLOGY IN TEXAS SCHOOLS

IMAGES

...published by the
Texas Center for Educational Technology





Community pride in what they are learning at Driscoll is a key element, as signs throughout the school indicate.

Technology Helping Year-Round to Rebuild the Education Puzzle at Driscoll ISD

Driscoll ISD, 20 miles southwest of Corpus Christi on Highway 77, is rich in oil and gas but relatively poor in community wealth. Yet it is anything but poor in the way it is approaching technology and education. Excitement better describes what one experiences when visiting this one-campus, seven-building, 260-student, pre-K through 8 district that even has its own on-campus day care center for the children of its employees.

In this school district, there is a ratio of almost one computer for every two students - all networked.

This district is not test-driven, and because of this, its students study in a non-graded atmosphere where the older ones help their peers and also their younger classmates. Administrators believe that this will help eliminate failure.

For three years, it was the first school district in Texas to have year-round school for two main

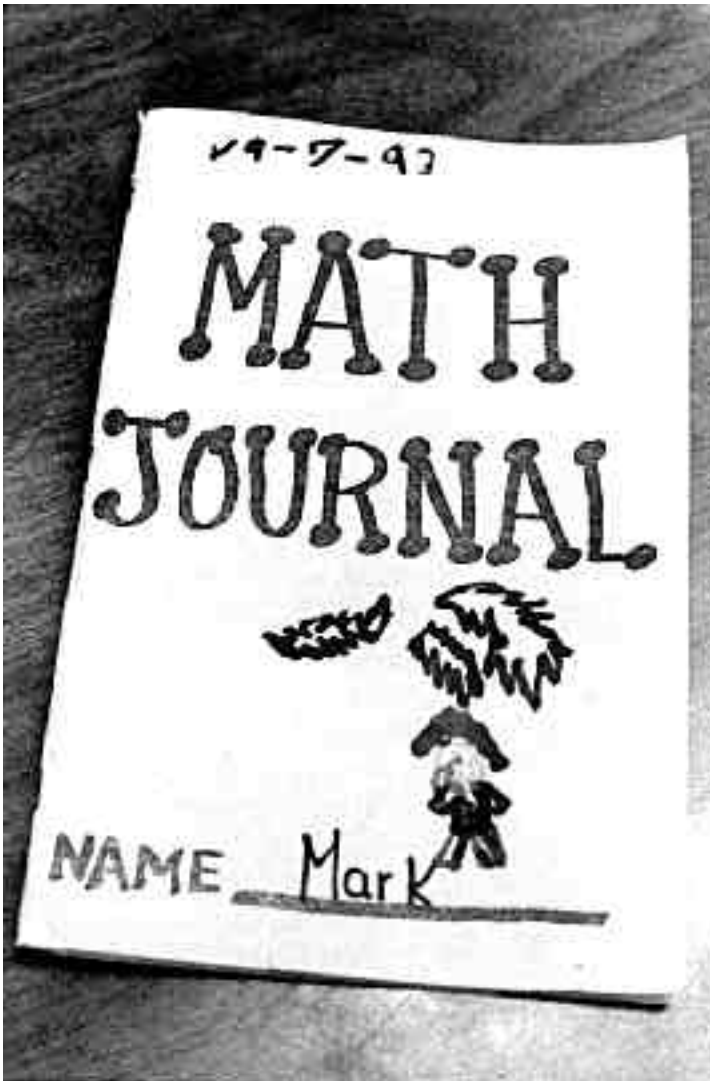
reasons: so its students, who are exposed daily to two different languages (83 percent are Hispanic), would have less time off to forget what they were taught, and also to provide its students with at least two good meals a day.

Chosen as one of the 83 Commissioner's Partnership Schools out of 2,500 applicants, this district has been given the freedom by the state to innovate, to go beyond the normal state rules and regulations, in order to better educate their children.

So administrators and teachers began by looking at their school as if it were a puzzle, then dumping all the pieces out and starting over. They consider computers and technology to be the last of the key pieces they are now putting in place to help solve their community's education puzzle.

The district also did away with its maintenance staff. Now the administrators, teachers and students

“There is a ratio of almost one computer for every two students.”



In math journals like this one, teachers had students write about things that they either like or dislike about math. About 98 percent of the students who were here last year and went through the math lab wrote raving reviews about how they love math and that it is their favorite subject.

clean all the classrooms and lounges in the seven buildings. The money they save by doing this goes to the 21 teachers as bonuses at Christmas.

Different?

So much so that students are

moving in from other districts so that they can share in the curriculum and year-round experience — a 30 percent enrollment increase this year — and more teachers than ever are applying to teach here.

The excitement for what is happening in this district begins with Superintendent Franklin White and Principal Linda Villarreal. White is the reserved, matter-of-fact

planner, and Villarreal is the energizer and implementer. Together, they and their school board share their vision for this small district that their students can be as well-educated and as competitive as students anywhere. It is easy for the two leaders to be on the same

page as they rebuild the puzzle — after all, their offices are across the narrow hall from each other.

The puzzle remake started in 1989 when the curriculum was restructured, eliminating all ability-grouped classes, all teachers were trained in process writing, and all language arts were integrated.

Then, in 1991, it was year-round education. “This was the easiest thing to do of all the changes we’ve made because it seemed the most natural thing to do,” White said. They adopted a 30-10 calendar: attend school 30 days and then be off for 10 days plus the month of August. “When we set our calendar; we start with the Christmas holidays and back it up so that one of the inner-sessions falls at Christmas. Our school year starts in September, probably later than anybody in the state,” White said.

Year-round education has allowed the district to offer remediation and enrichment classes, including karate, golf, social graces, music, art, and computers, during the mornings, four days a week.

“Close to 70 percent of our enrollment comes back because this is a poor community. The district is not poor. We spend close to \$6,000 a child, while the state averages about \$4,000,” White said. White believes the school district, encompassing 80 square

miles, is not just the focal point of the community of 688 people. “It is the community.”

Next came the decision to group students of different ages in order to facilitate learning. “We were totally against ability grouping and tracking students and having all the highs together and all the lows together,” Principal Villarreal said.

“The entire Driscoll school system — those seven buildings on the one campus — is networked with fiber optic cabling. Each classroom has three lines — telephone, network and video.”

“We’re totally against pulling out children who are having problems and isolating them because that tells a child ‘you are not smart enough to do this work.’ We are also extremely involved in inclusion of our special education students. Team teaching has been going on here for three years, and it is very rare to see only one teacher in one classroom. We have two and three teachers working together to meet the needs of the students,” Villarreal said. “Whatever the level that student is at, it’s up to the teachers to assess those needs and

meet the needs. So we have a lot of individual instruction going on.”

Then, in 1993, came the technology emphasis. “I took our plan to the school board and said this is going to cost a lot of money that we don’t have. We can look for grants or, in the worst case, borrow it,” White said. “They said, ‘borrow it,’ so we did—\$350,000.”

With this money, they networked the school. In any given classroom, there are at least six computers with a file server, so all the software can be accessed by any student from any classroom at any time.

The school’s developmental non-graded approach groups students in kindergarten and first grade, in second and third grades, fourth and fifth grades, and sixth, seventh, and eighth grades. This

makes the technology approach even better—older students are able to help and to learn with younger students. “It allows us to build the curriculum around their individual needs in an accelerated way. It eliminates failure because if each student is working at his/her appropriate level, there is no reason for failure,” White said.



Math teacher Dawn Shuenemann says when the math lab got its Macintosh computers networked, “It was a dream come true.”

The district's learning atmosphere was also helped by not being test driven.

"We believe in teaching the child what he/she needs, whether it's on the TAAS (Texas Assessment of Academic Skills) exam or not. I hope we never become a test-driven school," White said.

The entire Driscoll school system is networked with fiber optic cabling. Each classroom has three lines — telephone, network and video. Every classroom is equipped with five IBM EduQuest model 30 computers for student use, one IBM printer, and one EduQuest model 40 computer, belonging to the teachers, and is a fully equipped multimedia station complete with CD-ROM. The district also has an 18-station computer lab with EduQuest 30s. The library has three 30s and one 40. In total, there are 260 students and 114 computers, a ratio of about 2-1. The main server is loaded with software that covers all subject areas, plus multimedia software that allows for unlimited creativity.

Unlike implementing year-round school, getting into technology and computers was like "walking off into something," White said. "I didn't know how to turn a computer on."

So White asked Thom Driver,

coordinator of the Cooperative Learning Center at the Region II Education Service Center in Corpus Christi, to help. "His instructions to me," Driver remembers, "were to see if I could come up with a recommendation for the best way we could implement technology, and not to worry about whether or not we could afford it, or whether the people would like to do it. So I spent some time dreaming, as if I were the principal."

"So many students are visual learners today, and they need things to handle and feel and discover for themselves, and a sheet of paper with numbers on it just doesn't do that for them."

Driver's plan included putting computers on every teacher's desk and having the teachers become computer literate. "By requiring the school business to be done by computers (interoffice memos, attendance, etc.), everybody had to learn how to use them, and then there aren't any problems with teaching the students to use them," he said.

Driver also teaches cooperative learning for Region II, and he suggested that the school have a

computer station for each cooperative learning group of three students. He also suggested that these students utilize this computer for different things, such as keyboard operation, and that they rotate the roles so each student in the group would be involved. That's how the district decided how to buy its original 82 (now 92) IBM 386s with 14-inch monitors. Now all teachers have complete multimedia stations and CD-ROMs. The science labs have temperature and light probes and motion detectors and teachers record their grades on the computer gradebook program. In addition to the classroom computers, there is also an 18-station computer lab, including a teacher station, where students (beginning with the fourth-grade level) are cycled through each day. Since they were building an IBM system, Driver and White asked Irving Cutter, an advisory systems representative from EduQuest (an IBM Company), to help with the planning and implementation. EduQuest uses a term, "TLC" (Teaching and Learning with Computers) "and this looked like a place we could really stretch that (acronym)," Cutter remembers. "I've told people around the state that this was a school that was doing TLC without the computers, so all we had to do was add the computers."

The three went to IBM's headquarter-



IBM systems representative Irving Cutter (above) and Region II Education Service Center coordinator Thom Driver (below) have played key roles with the teachers and students in helping the district choose the right computers and software.



ters for executive briefings, so everyone would understand where the education industry was trying to go with computers. "If you understand this, then the steps make more sense," Cutter said. "They then trusted me to make recommendations, and I had more responsibility to give them the correct advice." Driver remembers asking Cutter for his opinion about some of their plans and Cutter remarked, "If we put this system in, we'll be smack dab in the middle of the twenty-first century in technology."

Once they returned from the IBM briefings, the key to helping the teachers become computer literate was to explain, during a day of in-service training, the plans they had made. Then, during subsequent in-service training sessions, educational instructional specialists showed the teachers some of the software and how it could be used in different courses and grades. It was becoming clear that in order to teach in Driscoll, computer literacy was a must. "When we interview teacher applicants now," White said, "they come in as race drivers, and we're looking for jet pilots to use our technology."

"From my viewpoint," Cutter said, "I could encourage the teachers to buy more software than they would ever absorb. But what you've got to understand from their viewpoint,

is that every time teachers have to be pulled out of a classroom to get trained, someone else has to take that over that class. It's a tremendous balancing act."

Says Driver, "I don't know of any school district in the region that has the potential sitting on their floor that this district has. In larger districts, the cost and physical site

problems can be tremendous. Here, people can sit in a small office, figure everything out, and then do it."

The early results of the district's ideas are exciting for both teachers and students.

A three-year language program involving the multi-age students



Superintendent Franklin White (L) and Principal Linda Villarreal (R) have treated their school as if it were a puzzle and dumped all the pieces out and started over.

incorporates the computer software Linkway Live to train students to write, think and read. With sixth, seventh, and eighth-grade students leading the peer conferencing, the fourth and fifth-graders join them in “families,” and together they create and give live presentations on various subjects, such as the Rain Forest. Ideas for the presentations, including those found in

advertisements for newspapers or television, are developed and then refined by the students both in the “family” group and as individuals in the classroom. These same students may have had these ideas before, but they didn’t have the sophisticated multimedia technology available that would allow them to do such things as anima-

tion, children’s books, portraits, rap songs, audio tapes, and video tapes. Now they do. Linkway Live allows them to create individual folders, store their information, and refine it as they go.

Once they are familiar with the computers and the individual software, students are then encouraged to explore every possible

use. A good example is found in a Spanish class (the school is 83 percent Hispanic) where students are not only creating and writing Spanish stories, but are also conferencing in Spanish. “Our only limit is our imagination,” said one teacher.

Reading, math and science software programs require that students practice and then test on their own. After viewing their test results, students then try to increase their scores. “It’s like giving us another teacher,” was the remark heard most often among teachers.

Math teachers Dawn Shuenemann, Ode Moreno, and Kathryn Hall claim that when the math lab got its computers networked, “it was a dream come true.” Before, the process of switching disks from one machine to another required a lot of teacher attention to each student. Now, by using software programs like Place Value and Base 10 for adding and subtracting, the computer not only keeps track of whether a student has gone through the entire program or not, but records how well each student performed in solving the problems. “I can set up for each student what program I want them to go into, and it will automatically bookmark it for them,” Shuenemann said. With the network and the integrated learning approach to curriculum, Driscoll students can now



analyze how each of their subjects relates to a particular assignment, such as Thanksgiving Pilgrims, by accessing any computer or data base from any location.

The math teachers also believe that not being a test-driven school translates to what they do in the math lab. “We try our best to give the students what they need to know rather than just teaching material because it is on the test,” Moreno said.

The TLC is an extension to what the math teachers might do for their first-graders on a given day by having different centers going at the same time. One of these might be the computer center where students are being introduced to addition by working on counters and sums. They can choose whatever item they want to—clowns, swans, lady bugs—to number and move around. At another center, students use manipulatives and markup boards. They assign each item numbers and write the sums for each. At yet another center, students can add stories to the sums.

When the State of Texas adopted new math essentials, it required the use of manipulatives, or hands-on items, to demonstrate the principles of math, which can be very abstract. Driscoll ISD had the choice to either train all its teachers and

purchase enough manipulatives to go in all the classrooms, or to train one math teacher in the use of manipulatives (Schuenemann) and purchase enough manipulatives so that a class, along with its homeroom teacher, could come into the math lab to work. Along with their two math-certified teachers (Moreno and Hall), the students would also have a lot more manipulatives with which to work.

“All I said to the teachers was that I wanted to make sure that the computer is not the teacher — that the teacher is the teacher and the computer assists the teacher.”

The shelves in the lab are open, and the manipulatives get plenty of use. “So many students are visual learners today, and they need things to handle and feel and discover for themselves. A sheet of paper with numbers on it just doesn’t do that for them,” Moreno said.

“We started math journals this year and we had students write about things that they either like or dislike about math. We wanted to

know the truth,” Schuenemann said. “About 98 percent of the our students who were here last year and went through the math lab wrote raving reviews about how they love math and that it is their favorite subject. We compared that to comments from transfer students from other districts that used the traditional teaching approach, and they all hated it,” Schuenemann said. “That means more to me than a test score.”

Students at each grade level will say that the computer approach to learning (1) is more fun, (2) lessens the need to keep up with many materials, since it’s easier to save to a disk (3) offers the chance to do more graphics and to work with different media, and (4) allows them to write descriptions about the graphics and presentations they’ve created. These same students will acknowledge that they have the same dreams as students in other districts—about becoming lawyers, doctors, teachers, secretaries or ball players—and most of them can discuss exactly how each of these professions uses computers today.

Soon students may also have the computer to thank for more nutritious meals. Dietitian Marle Bahn says that she can analyze student’s nutritional needs better by using computer software. “I know what foods contain Vitamin A and how

much protein we need. We are part of a federal school lunch and breakfast program that has certain guidelines that involve nutritional analysis, rather than components, to comprise a meal. I know these children come from backgrounds where these may be the only meals they eat a day, so at least we give them two meals out of the three. The socio-economic background of our students indicates that they are not always getting balanced nutritional meals at home. You can look at some of our students and tell they are eating too much of one thing and not enough of another. They're eating more refined products that have processed sugar, more starches than they need, and not enough protein. They fill up on the more economical carbohydrates that are cheaper for their families to purchase."

A former home economics teacher, Bahn claims that this challenge is much more satisfying. "You can't be assured that what you tell them in a class, they will go home and do. But I can actually do it here," Bahn said.

It was more than nutrition that worried White and Villarreal when they joined the district at about the same time five years ago. They, plus seven new teachers (1/3 of the current faculty), started at the same time. Villarreal remembers, "We were barely meeting the minimum

skills of our students. We did a wonderful job in having students work in teams, but as soon as they had to take an achievement test, about 75 percent of our students were below grade level on nearly every subject. It was terrible," Villarreal said.

"We decided to start with reading and language arts and to no longer teach in isolation. If you're teach-

"All of a sudden technology is matching our instructional program. But I don't want it to BE our instructional program. I want it to be a major part."

ing writing, you're teaching reading, and vice versa. We had to look at curriculum and at how you integrate all the things that go into this, like listening, writing, speaking, phonics and decoding. You do it through literature, so in the fourth grade you get a literature book, *How to Eat Fried Worms*, and you teach literature, reading and writing all at once. Then you're going to dissect worms, so you talk about nutrition and digestive systems. Now you're bringing

your science in, and then you do the same with math—all through a leadership book. That's how we started integrating our curriculum," Villarreal said.

"That took a good three to four years before we understood what we were doing really well. Then we kept going back to the idea of having our students here on a continuous basis. We would do all this work, they would go home for two and a half months, and then when they returned, everything we had taught them was forgotten. Most of our students go home to Spanish speaking homes, and some districts look at that as a detriment. We don't. If ours know two languages, that's fantastic, and it's also something we don't have to teach them. So if we can teach them English year-round and have them use Spanish at home year-round, and then have shorter breaks, that makes education a more continuous cycle. So we started year-round school," Villarreal explained.

"That was a big change, but we also had smaller ones. We decided to make sure our best teachers stayed here. Since most of them do not live in our district, and several had young children at home, we opened a licensed day care facility. That way they can be near their children during the day and can pop in and check on them



The beneficiaries of this integrated learning approach are students like sixth-grader Katie Cooper (L) and fourth-grader Griselda Gonzalez (ABOVE) . . .



Rocky Resendez (L) and Jessie Sappington (R) (BELOW) and Katie Cooper (RIGHT)

regularly. We would have lost some teachers had we not done it,” Villarreal said.

Next came the decisions concerning the math lab and the realization that the piece would fit the puzzle better with technology. “We heard Dr. William Daggit at a workshop, and he talked about what other

countries were doing, how technically illiterate we are, how we can’t operate simple machinery and VCRs, and that we’re not teaching students to learn it either. I felt we had this wonderful instructional program, and we were teaching our students all the finer things in life, but we were also teaching them how to be productive citizens in a

work force. Franklin (White) and I are risk takers, and the majority of our teachers are risk takers. But the most important thing to realize is—if you’re not willing to take a risk, you are willing to risk everything!”

“All I said to the teachers was that I

wanted to make sure that the computer is not the teacher, that the teacher is the teacher and the computer assists the teacher. And to make sure that we are helping our children become technically adept at what they are doing,” Villarreal said.

Her hope became very clear when the students (pre-technology) did a complete study of World War II, including the *Diary of Ann Frank*, and integrated every subject. “But they did all of this on their own. If we had had the Linkway Live software in place, they could have put computerized folders of their work together and shared information. Now we can do that, and all of a sudden technology is matching our instructional program. But I don’t want it to BE our instructional program. I want it to be a major part,” Villarreal said.

Her vision is that all students, upon leaving the Driscoll school, can accomplish anything they want to in college or in the work force as a result of their training. “I’ve learned that if the students are not successful, the teachers are not going to be successful. If the teachers are not successful, I’m not going to be successful. And if I’m not successful, Mr. White is not going to be successful. And I’m such a vain person, I have to be successful. So we are all thinking on the same terms,” Villarreal said.





The school's developmental non-graded approach groups students in kindergarten and first grade, second and third, fourth and fifth, and sixth-seventh-eighth, and makes the technology approach even better — older students help and learn with younger students.

How will they know if their approach to education is working?

“We do not believe the TAAS test is an authentic assessment for the type of instruction we have in our school,” Villarreal said. “But since so many of our neighboring school districts have received THE LETTER, calling them low performing schools, we know it is how the state grades us, and we have to consider that. We’d like to work with some universities and have some sort of authentic assessment for our students; have it meet the same needs that TAAS does, but have it related to the type of

instruction we do. Then maybe the state can say this can take the place of TAAS in our district.”

Then she laughed. “We keep saying the next major change is not to change at all here, but I don’t think that will happen,” Villarreal said.

Turn back the clock to the first board meeting Franklin White conducted as superintendent of Driscoll ISD. “We abolished corporal punishment because we didn’t believe in it. We had a three-page policy then, and now we have one line saying that corporal

punishment is forbidden. It’s ineffective and its barbaric. There are better ways to treat kids than to bring them in and beat them. And now our discipline is better than it ever was,” White said.

So are many educational and technological aspects at this very special and exciting place called Driscoll ISD in South Texas. 🐾

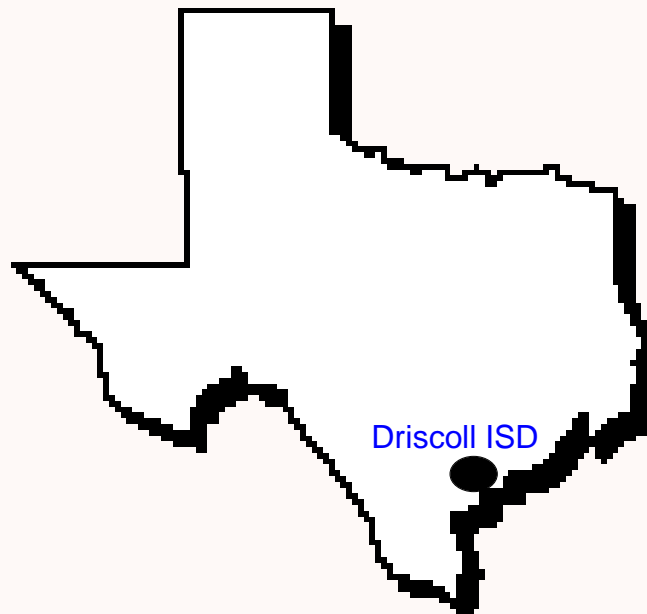
TECHNOLOGY PROFILE OF Driscoll ISD

LOCATION: South Texas, 20 miles southwest of Corpus Christi on Highway 77.

NUMBER OF SCHOOLS & STUDENTS: Pre-K through eighth grade, 260 students, 21 faculty members.

TECHNOLOGY SUMMARY: The entire Driscoll school system is networked with fiber optic cabling. Each classroom has three lines — telephone, network and video. Every classroom is equipped with 5 IBM EduQuest model 30 computers for student use, one IBM printer, and one Edu Quest model 40 computer that is the teacher's, and is a fully equipped multimedia station complete with CD-ROM. The district also has an 18-station computer lab with EduQuest 30s. The library has three EduQuest 30s and one 40. In total, there are 260 students and 114 computers, a ratio of 2-1. The main server is loaded with software covering all subject areas, plus multimedia software that allows for unlimited creativity.


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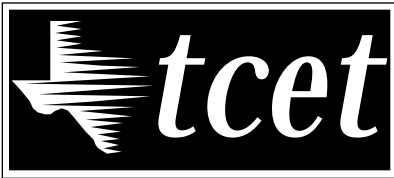
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This series of TCET Reports features Texas educators who each possess several common characteristics: a willingness to take risks, a drive to see the potential of all students realized, and a belief in the power of educational technology.

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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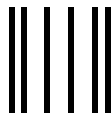
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