DOCUMENT RESUME

ED 445 670 IR 020 352

TITLE	Helping Schools Make Technology Work: Managing Information Technology from Classrooms to Lunchrooms.
INSTITUTION	Texas State Comptroller of Public Accounts, Austin.
REPORT NO	TCPA-96-720
PUB DATE	2000-04-00
NOTE	14p.
AVAILABLE FROM	Publication #96-720. April 2000, Texas School Performance Review, Texas Comptroller of Public Accounts, P.O. Box 13528, Austin, TX 78711-3528; Tel: 800-531-5441 ex 5-3676 (Toll Free); Web site: http://www.window.state.tx.us/tpr/tspr/tech10.html.
PUB TYPE	Guides - General (050) -- Reports - Descriptive (141)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Computer Uses in Education; Educational Finance; *Educational Planning; Educational Policy; *Educational Technology; Elementary Secondary Education; *Information Technology; Training
IDENTIFIERS	Technology Plans; *Technology Utilization; Web Sites

ABSTRACT

This report discusses the following "Top 10" ways to make technology work for schools: (1) develop long and short-range plans and budgets--don't fly blind; (2) create policies, procedures, and standards--the bedrock of effective technological change; (3) know what you need before you buy it; (4) apply the "Yellow Pages test" when deciding to buy or rent expertise; (5) locate funding to fill growing needs; (6) make sure computer systems are compatible--system integration; (7) understand that training is the key to success or failure; (8) communicate and cooperate, inside and outside the district; (9) keep systems up and running--staffing and technical support; and (10) control your inventory--know what you have and where it is. World Wide Web sites for obtaining additional information about the processes discussed in the report are listed. (MES)

e-Texas

education•excellence•efficiency•effectiveness

Helping Schools Make Technology Work:

Managing Information Technology From Classrooms to Lunchrooms

TSPR

Texas School Performance Review

INNOVATIVE SOLUTIONS TO HELP ADDRESS THE ISSUES AND CHALLENGES FACING MOST PUBLIC SCHOOL DISTRICTS

APRIL 2000

Carole Keeton Rylander, Texas Comptroller of Public Accounts

Helping Schools Make Technology Work:

Managing Information Technology From Classrooms to Lunchrooms

The cornerstone of Texas State Comptroller Carole Keeton Rylander's administration is e-Texas, a citizen commission charged with developing recommendations to help Texas state government meet the challenges of the Internet Age. As a former school teacher and a former school board president, but most importantly as a mother and grandmother, Comptroller Rylander has made education her priority. Understandably, Comptroller Rylander charged her nationally recognized Texas School Performance Review (TSPR) and e-Texas to create a guide for making technology work in public schools.

The first three of Comptroller Rylander's Ten Principles for Texas in the New Century—her guidelines for the future of Texas government—are related to education: develop a better-educated workforce, direct more of every education dollar into the classroom and raise the bar on student performance. Another principle recognizes that using technology in schools and government allows employees to cut costs and improve quality. The Internet and related technologies promise to transform the relationship between all Texans and their schools by providing simpler, faster access to educational information and services.

The Internet and related technologies promise to transform the relationship between all Texans and their schools.

Businesses use advances in telecommunications and information technology to produce better products at a lower cost with improved customer service. These advances need to be

Top 10 Ways To Make Technology Work For Schools

1. **Develop long and short-range plans and budgets: don't fly blind**
2. **Create policies, procedures and standards: the bedrock of effective technological change**
3. **Know what you need before you buy it**
4. **Apply the "Yellow Pages test" when deciding to buy or rent expertise**
5. **Locate funding to fill growing needs**
6. **Make sure computer systems are compatible: system integration**
7. **Understand that training is the key to success or failure**
8. **Communicate and cooperate, inside and outside the district**
9. **Keep systems up and running: staffing and technical support**
10. **Control your inventory: know what you have and where it is**

incorporated into every school district and campus to reduce costs and improve service delivery. In reviews of the best technology-related management practices found in Texas public schools, 10 key themes emerge.

Technology in Education

When the Texas public education system was implemented more than 100 years ago, information technology consisted of simple reader textbooks and chalkboards. As recently as 20 years ago, information technology involved the use of mimeograph machines for duplicating, hi-fi record players, eight-track tape recorders and reel-to-reel film projectors. The first school reviews, performed by the Texas School Performance Review (TSPR) just nine years ago, did not comprehensively assess technology within a district. Technology was considered only within the context of functional areas such as financial management or instruction. Beginning in 1995, assessing how well a district uses technology to improve operations, reduce costs and improve educational service delivery became a focus of every TSPR review.

Nearly every school district in Texas is using technology to enhance instruction and prepare students for college and the workplace.

Information technology today accounts for 8 to 10 percent of the global economy and affects just about every organization, company and economy. According to national studies, at least one-third of all American households now have a home computer. Three years ago, maybe one in 100 people had heard of the Internet – now only one in 10 has not.

The public sector faces a number of daunting challenges in developing effective technology strategies. While more and more businesses embrace electronic commerce as a way to provide easy, convenient and less expensive self-service to customers, government often remains tied to more cumbersome ways of doing business.

For example, one opportunity for improvement is in purchasing. Businesses have reported saving as much as 70 percent by switching from paper to electronic purchasing systems, while providing faster, more efficient service. School districts can attain similar savings using the same technology.

Nearly every school district in Texas is using technology to enhance instruction and prepare students for college and the workplace. And, many districts use technology to manage district operations more effectively—from maintaining buses and planning meals to managing finances and ordering goods.

Purchasing the right equipment and software to meet the needs of students, teachers and administrators takes careful planning. Success depends upon careful assessment of educational objectives, business needs and campus improvement plans. Systems should be evaluated to determine if they will help meet these objectives. Once the technology is in place, careful attention is needed to ensure that training is provided and that staff or vendors can implement, maintain and manage the technology.

Districts often make large information technology purchases only to find that the equipment and software are outdated before the final bill is paid. One example found all too often is the use of 10- or 20- year bond money to buy computers that become obsolete in less than five years.

Some school districts, like the United ISD in Laredo, had equipment standing idle or underused because staff had not been trained to use it. Many districts are having difficulty finding qualified staff to implement, maintain and manage technology.

The number of grants available at the state and federal level for improving information technology is proof of the increased emphasis on IT in schools. For example, State Telecommunication Infrastructure Fund grants are available for funding school networking programs and E-rate discounts allow districts to acquire telecommunications technology at a reduced cost.

School districts' need for advanced communications is met with combinations of e-mail, Internet access and fax technology, much of which requires high-speed transmission lines, routers, servers and the latest computer technology. School districts are required to store and report an enormous amount of data on students, staff and school finances to the state. When the technology does not work, reporting is difficult, if not impossible, and the accuracy of the data is compromised.

After reviewing more than 30 school districts, TSPR has developed a Top 10 list of information technology challenges facing public schools. They include innovative and common-sense methods Texas school districts have used to meet these challenges.

1 Develop long and short-range plans and budgets: don't fly blind

The Texas Education Code requires school districts to prepare improvement plans that include provisions for the integration of technology into instructional and administrative programs. Those that comply often address only a few of the elements necessary for effectively using information technology. While most technology plans focus on the classroom, TSPR has found that improved automation and integration of administrative functions can eliminate excessive paperwork that drains district resources from the classroom.

In order to implement an effective technology plan, parents, teachers and school officials must recognize that technology plays a vital role in every facet of education. It is not merely a way to make teachers' or officials' jobs a little easier.

The most effective technology plans contain clear goals, objectives and action plans for technology projects. They assign individual responsibility for implementation steps and set deadlines. For example, the Corpus Christi ISD technology plan included using an outside consultant to identify the district's technology needs as well as goals, tasks and resources over a four-year period.

A district's school board should receive regular progress reports on the implementation of major technology projects. Updates on performance measures should be used to hold managers accountable. Budgets must be tied to the technology plan.

While a district's technical personnel can develop the vision for a technology plan, that vision must be shared and understood by the board, or it will remain unfunded. A technology plan should be a joint effort with input from the board, administration, teachers, and community and business leaders with expertise in the field.

Direct funding should be committed to each goal in the plan. Funds may have to be shifted or timelines stretched to fit, but these decisions should be the result of collaboration between the board and technical and managerial personnel. In Corpus Christi, the district dedicated $48.9 million over a four-year period to implement its technology plan. Funds used included a combination of bonds, grants, the state's technology allotment and general operating funds. Over the last four years, the district has not deviated from its plan. The board and administration consider technology funding immune from budget cuts and will not use it to fund new, unrelated projects.

In addition to a technology plan, districts should have comprehensive disaster recovery plans that address any system that is subject to failure during a disaster. A disaster recovery plan must include contingency and backup plans for information technology. The State Auditor's Office has an Automation Controls Self-Assessment Guide on the Internet at <http://www.sao.state.tx.us/cfdocs/apps/automationassess/icq-f.html>.

A technology plan should be a joint effort with input from the board, administration, teachers and community and business leaders with expertise in the field.

2 Create policies, procedures and standards: the bedrock of effective technological change

In an era of site-based decision-making, many districts are reluctant to force individual campuses or departments to adhere to districtwide standards for information technology purchasing and installation. The result is a hodgepodge of computers and software that cannot be adequately supported by technical staff, cannot communicate with other campuses and cannot run applications districtwide.

The relationship between purchasing departments and technology experts is key. The El Paso ISD experienced school board conflicts because the roles of the purchasing office and the technology office were not clearly defined. If a purchasing department is authorized to buy computer equipment without consulting technology experts, districts may end up with computers and software that the computer

department is unable to support. On the other hand, if a technology department is allowed to purchase equipment without going through purchasing, compliance with purchasing laws and guidelines can suffer. Both departments must work together to assess a district's true technology needs and eliminate waste.

Internet use must also be addressed by district policy. Staff and students must know which types of use are acceptable and which are not. Then, procedures must be put in place to monitor compliance. Port Arthur ISD developed comprehensive districtwide acceptable use guidelines for students and teachers.

Districts should also stipulate what hardware and software can be purchased, how it should be connected, when it should be replaced and how each step should be documented. The Texas Department of Information Resources provides guidance for state agencies and school districts to use when developing documentation at <http://www.dir.state.tx.us/oversight/>.

Unwritten rules are simply no substitute for clearly outlined procedures. Districts need clear policies and procedures for the purchase of technology, its acceptable use, the application of copyright laws, and the control of software and hardware inventories. The district will find it hard to defend itself against criticism when an employee acts outside of an unwritten rule – there is little proof that the individual was acting without express authority.

3 Know what you need before you buy it

A district must develop a vision for the future that improves the way the district does business.

Buying the latest technology simply because it is available is a common practice in both administrative and instructional areas.

A district must first assess its programs and systems, then develop a vision for the future that improves the way the district does business, and finally acquire the available technology for meeting those needs. If the district cannot quantify the improvements it expects to achieve, the purchase should not be made.

Technology is not a quick fix for every problem. If the problems are management- or personnel-related, all of the technology in the world will not solve them.

Like many districts in the state, the Spring ISD recognized that it had not kept pace with technological advances over the last 10 years. Many of its administrative functions were computerized, but the systems were not integrated or were outdated and cumbersome. TSPR cautioned the district not to simply replace existing applications, but to consider all of the advantages offered by new software and hardware, even if the technology meant changing traditional business functions.

The Spring ISD took this recommendation to heart and evaluated all available alternatives. Doing so allowed the district to improve services to campuses and streamline central office functions.

Before purchasing any technology, districts must ask the people who will use it what they want a new system or piece of equipment to accomplish.

TSPR has encountered a number of situations where costly technology sits idle because employees, resistant to change, refuse to use it. In one district, a $30,000 bus routing system sat idle, while routes continued to be inefficiently charted on a wall map with pushpins and string. In another district, the business manager prepares salary projections for budgets using a manually-loaded Excel spreadsheet, while the district's financial system is capable of running any number of iterations of the budget projections with greater accuracy in far less time.

Next, administrators must consider what they hope to achieve—better management reports, streamlined processes, online access for parents and students, or higher quality services.

In the Ysleta ISD, the district installed high-speed T-1 lines to deliver video, voice and data transmissions to every classroom at speeds 55 times faster than a typical modem. The T-1 links school-based local area networks that manage 13,500 personal computers into a district wide area network.

The Spring ISD uses a similar T-1 line infrastructure that serves as a model for school districts and multi-site businesses. The district wired the schools to allow for fast, easy changes in computers and related systems at the classroom level.

Once the needs are clearly documented, the district can begin locating equipment or systems that meet those needs. Using a Request for Information (RFI) or Request for Offer, a district can outline what it wants to achieve and ask vendors to give them information about how systems or equipment can meet those needs. RFIs do not oblige the district to buy anything and can help the district gather a great deal of information about what goods and services are available. When the district is ready to issue a formal bid request, they will have a better understanding of available options and the costs associated with them.

4 Apply the "Yellow Pages test" when deciding to buy or rent expertise

School districts face complex choices on whether it is more cost-effective to buy or lease information technology software, hardware and services. Outsourcing information technology functions is often the most cost effective option. Specialized skills and short-term needs, such as creating a disaster recovery plan, are good candidates for outsourcing. So are cable installation and a variety of administrative functions such as creating purchase orders, printing checks and developing budgets.

Comptroller Rylander says that all goods and services should be put to the "Yellow Pages test." *Government should do no job if there is a business in the Yellow Pages that can do that job better and at a lower cost."*

TSPR recommends regular cost/benefit analyses for all information technology projects, whether they are contracted, performed in-house or done in cooperation with a private partner.

Public/private partnerships can also be an effective means for tapping into the enormous potential of information technology. In some cases, companies will provide valuable design and implementation services for free, or at reduced cost, to districts in exchange for advertising opportunities or transaction fees.

One small school district, the Mount Pleasant ISD, entered into an innovative lease-purchase agreement with Apple Computer Inc. to supply computers for the district. By not buying the computers outright, the district was able to acquire three times as many computers as it could have bought. More information on the arrangement is available on Department of Information Resources' (DIR's) Web site at http://www.dir.state.tx.us/oversight/lvp/index.html.

Finding and keeping qualified information technology staff has become increasingly challenging, especially for government entities that are unable to match the salaries and benefits offered in the private sector. Government and school districts increasingly need to outsource IT functions. More information on outsourcing IT is available on DIR's Web site at <http://www.dir.state.tx.us/oversight/outsourcing/index.html>.

Districts have to develop more sophisticated contracts in this environment. Performance-based contracting, which specifies expected output and outcomes, is one highly effective means for ensuring quality service from outsourced staff. Performance-based contracting requires districts to describe desired outcomes, set performance standards, provide for financial incentives and penalties, and develop advanced monitoring and measurement techniques.

If a school district contracts for its technology or technology support functions, TSPR looks carefully at the terms and conditions of contracts to determine whether the district is getting the best service possible at the lowest possible price.

Tough contract negotiations are necessary to protect a district's interests. Contracts are often renewed without a thorough review of terms and conditions. This practice does not encourage contractors to improve the quality of service or reduce costs. For example, escalator clauses sometimes allow contractors to automatically raise prices, even if the cost of parts and labor does not increase accordingly.

Contracts must be examined carefully to ensure districts receive the best service available at the lowest possible cost. Re-bidding contracts periodically can help determine if another

Comptroller Rylander says, "Government should do no job if there is a business in the Yellow Pages that can do that job better and at a lower cost."

company can do a better job at a lower cost, or if new services or methods of service delivery are available. During the contract re-bidding process, a district could also examine the cost of conducting the services in-house.

If a district operates all technology functions in-house, opening the service to competition by issuing a Request for Proposal will allow the board and the administration to evaluate the cost-effectiveness of operating technology services in-house. When comparing the costs of in-house operations to services provided by contractors, the district should factor in all of the in-house costs that would pass through to the contractor, including the cost of employees, benefits, and training. Only then is a true comparison possible.

Districts have pointed out pros and cons to hiring in-house personnel or contracting for services. Hired computer expertise can be costly and difficult to retain, given the demand for such workers. One option is contracting for computer repairs and maintenance. Maintenance contracts sometimes provide better service, faster than an in-house technical workforce does. On the other hand, contracted expertise can be more costly than the two or three full-time employees it might require to perform the work in-house. Moreover, in-house employees can become more familiar with a district's specific needs. In-house staff can provide more personal attention to problems a contractor may overlook. This is a desirable situation if the local workforce is stable and turnover rates can be kept low.

The bottom line is that each district must do a cost/benefit analysis and make an informed decision. In the Port Arthur ISD, district officials found that in-house staff could deliver technical support more efficiently than contractors. The district saved $73,500 in one year by hiring a computer technician to support more than 2,000 computers owned by the district. Two maintenance contracts would have been needed to maintain the district's Apple and Windows-based computers.

5 Locate funding to fill growing needs

Aggressive pursuit of grants and other financial support is critical to funding school district technology programs.

Aggressive pursuit of grants and other financial support is critical to funding school district technology programs. A number of state-administered technology grants and allotments are available, including the state's technology allotment that provides about $30 per student annually. Technology Integration in Education grants and the Telecommunications Infrastructure Fund also provide funding for specific projects. Special discounts on telecommunication services (E-Rate discounts) are available, as are many other federal, state and local funding sources.

Hiring a full-time grant writer to aggressively pursue grant money is key. The position will often pay for itself many times over. In the Hamilton ISD, a district with fewer than 1,000 students, the part-time computer science teacher/technology coordinator found it difficult to both teach and provide technology support. At TSPR's recommendation, the individual was made the district's full-time technology specialist and was asked to spend spare time pursuing technology grants. In one year, the technology specialist was able to secure about $500,000 in additional grant funds.

Centralized coordination of the grant writing process is also important. In some cases, grants cost more to secure than they bring in, particularly when matching funds are involved. In the Texarkana ISD, the central office was not apprised of the district's own financial obligations to many grant projects. Other districts warned of the long-term ramifications associated with continuing a program after grant funds were exhausted.

In Wimberley, a small district outside Austin, a retired individual was hired on a part-time basis to pursue grants for technology and other purposes. In little more than a year, more than $670,000 in grants were generated. The grants paid for the grant specialist's salary a hundred times over.

The Corpus Christi ISD developed a long-range technology plan that included estimated costs. These needs and cost estimates considered available district funds and helped the district determine it needed to secure an additional $48 million to fully fund the five-year plan.

The Corpus Christi ISD long-range technology plan outlined all the district's technology needs over a five-year period and included

funding sources for each expenditure required. Funding sources for more than $48 million in technology needs were identified, including $9.4 million in bonds, $3.7 million from the debt service budget, $721,000 from the staff development budget and $1.1 million from a magnet school grant. Every item in Corpus Christi's technology plan is fully funded—for example, $300,000 of the food service fund balance was designated for the upgrade of technology in the food service operation.

It is also important for districts to take advantage of changes in the law. The Texarkana ISD was able to set aside money for a computer lab upgrade when the state designated certain computer courses as career and technology courses. This made the classes eligible for additional state funding.

6 Make sure computer systems are compatible: system integration

Every school district has computer systems that are unable to communicate with other district systems. These require double entries, which increases the risk of costly errors made when data is moved from one system to another. For example, the point-of-sale system used by a district's food services operation may not communicate with its purchasing or financial systems, making costly reentry of data and purchase orders necessary.

The payroll system may not communicate with the personnel management or financial systems, increasing the risk of conflicting data, erroneous paychecks and budget overruns. This was the case in the Spring ISD, when extra checks were erroneously issued to some staff before a new, integrated administrative software system was implemented in 1994.

Student records and transportation files also must be connected to ensure school bus routes meet the needs of all students. Bus route systems must incorporate new students, or children can be left waiting for a bus that never arrives.

Every district should set a goal of identifying the systems that should communicate and establishing a plan for integrating them as soon as possible. The investment needed to integrate these systems should more than pay for itself in increased staff productivity, fewer costly data errors and better customer service to the students, parents and the community served by the district.

30 percent of any school district's educational technology budget should be dedicated to training.

7 Understand that training is the key to success or failure

According to many national authorities including computer companies like Microsoft, 30 percent of any school district's educational technology budget should be dedicated to training. Without adequate training, teachers and administrators will let expensive hardware and software go unused or underused.

For example, TSPR found that the United Independent School District (ISD) in Laredo had more computers per student than any other district it had reviewed. Every classroom had at least one computer and nearly every school was wired for Internet access. Unfortunately, many of the computers were covered with dust because teachers and staff members did not know how to use them and had no plan for integrating them into the everyday curriculum. Despite this waste, the district had allocated money to purchase even newer computer equipment. TSPR recommended that the United ISD freeze its purchasing, begin an intensive staff training program and seek ways to integrate its present technology into its curriculum.

The United ISD used a two-tiered approach to training teachers. First, United used its considerable buying power as a district to purchase computers for its teachers' personal use, allowing them to become more proficient

in their use. Teachers reimbursed the district through payroll deductions. This let teachers get a significant discount on the purchase of a computer, getting more computers into the hands of teachers faster. Second, for teachers who did not elect to buy computers, the district loaned computers to teachers during the summer once they completed a 10-hour training course.

Two years later, the district resumed purchasing computer technology, but only after the intensive training program and curriculum review increased demand from teachers and administrators. Teachers were ready to expand their computer education programs after seeing the benefits and potential of the technology first hand.

Many districts are using a "train-the-trainer" approach to computer training because they feel they can accomplish more for a lower price. Often, a stipend paid to a campus-level staff or teacher can significantly reduce the need for more costly technical employees. These campus-based individuals can run a preliminary set of diagnostics, like making sure the machine is plugged in, before calling in the experts.

The Mount Pleasant ISD employs two full-time technology trainers. Teachers and staff are offered training in group workshops, in smaller groups with just-in-time training courses and in individualized, one-on-one training courses. Technology training needs vary widely and courses and classes are offered seven days a week to meet teachers' busy schedules. TSPR found 69 percent of teachers rated the instructional technology training program good or excellent at Mount Pleasant.

8 Communicate and cooperate, inside and outside the district

Communication within the district between central office administrators, teachers and campus administrators is a key to good management.

The importance of communication can not be underestimated. Communication within the district between central office administrators, teachers and campus administrators is a key to good management. Communication outside the district with parents, business leaders and civic organizations is vital to community support. Cooperation and sharing resources with outside entities is also critical when districts must stretch limited budgets to meet the growing demand for new programs.

In the past, paper publications have been used to communicate with the community and within the district. One publication sent to a few thousand key community and business leaders can cost thousands of dollars. Printing and copying expenses for school calendars, student handbooks, employee handbooks, policy and procedure manuals and class schedules require a major investment by school districts each year. Publishing an annual budget document can cost as much as $50 per copy, making it cost-prohibitive for distribution to the general public. The volume of paper used for a budget document also makes it difficult for the general public to read and analyze it in any detail. Placing documents on the World Wide Web can eliminate many publication costs and make reports more accessible to the general public.

The San Antonio ISD, for example, maintains both an Intranet and an Internet site. On the Internet site, the district has information about current events and recent press releases, as well as the school calendar, a directory of phone numbers for employees and departments, information on board members and key administrators and directions to each campus. On the Intranet, the district has information that can only be accessed by employees and individuals from within the district. Some districts distribute policy manuals and other documents on diskette or CD-ROM.

Publishing policy and procedure manuals on the Web also allows for timely updates and encourages compliance because the information can be searched electronically. With paper documents, if the index or table of contents do not contain the key word you are searching for, the user may spend hours trying to locate the reference—with the Internet; a search takes only seconds.

While school districts cannot require parents or community members to use the Internet, they can set standards for campuses and vendors. For example, districts need to have some paper forms available for parents. At the same time,they can take steps to reduce or eliminate costly paper transactions between

campuses and with businesses that work with the district.

Further, districts should make as many transactions as possible electronically, eliminating costly paper publication of forms, manuals and reports, while making fiscal accounting and reporting faster and more accurate.

TSPR has also found many instances where offers of information technology assistance from the community were rejected. In some instances, the districts felt the offers came with too many strings attached, or that the quality of the resources offered was not up to their standards. In examining these situations, TSPR often found that the problem was poor communications. Had the districts clearly stated their needs and standards, community businesses or individuals could have helped meet them. The El Paso ISD used a systematic internal process to develop its technology plan. This involved the use of technology planning circles made up of district personnel, as well as key people from the community.

The same communication principles hold true for the donation of used computers. Districts must clearly communicate their needs and standards before donations are made in order to receive useful equipment.

In many Texas school districts, community and business volunteers have wired area schools as part of the NetDays, a national volunteer initiative that encouraged businesses to dedicate time, equipment and expertise to wiring schools across the state and nation. In more successful projects, volunteers were told up front of the prescribed standards for installation. The size and type of wiring desired was stipulated and, in some cases, the district purchased the wiring they wanted to ensure standardization.

The Ysleta ISD has aggressively pursued technology support and assistance from businesses and foundations. The district has captured grants totaling hundreds of thousands of dollars that are being used for infrastructure, hardware, software and training. A business partnership with the local Time Warner subsidiary, Paragon Cable Company, has given the district access to the Internet.

The old axiom that "necessity is the mother of invention" was proved during an e-Texas education hearing held in February 2000. Educators, parents and others concerned with the state of education in Texas discussed several innovations and ideas, including a program that allows Blinn College faculty to teach online courses to high school juniors in Brenham. The district lost its social studies teachers and was not able to find last-minute replacements. Fortunately, Blinn already had a formal agreement with the Brenham ISD whereby students can take certain college-level courses in high school and receive dual-credit. Building upon that agreement, Blinn was able to offer two online classes for about 50 students.

The district bought computers for the courses using funding earmarked for gifted and talented programs. One Brenham ISD teacher serves as a counselor for the classes, though the assignments are made by the faculty at Blinn.

An audience member at the e-Texas hearing suggested using similar Internet-based courses for homebound special education students. Another participant suggested that the Brenham ISD model would also be useful for pregnant teens and incarcerated youth.

Cooperation with institutions of higher education can lead to course expansions that districts could not afford on their own.

Maintaining adequate technical support for computer technology is a chronic problem for school districts.

9 Keep systems up and running: staffing and technical support

Maintaining adequate technical support for computer technology is a chronic problem for school districts. Because most districts own and support both Windows-based PCs and Apple computers, they have particularly broad technical needs. Even the largest districts often do not have the resources necessary to hire all of the technicians, trainers and other support personnel they need.

TSPR has found that the most successful districts use a multilevel approach to computer support that relies first on knowledgeable, campus-based personnel for training and troubleshooting. Then, if the problem requires

more expertise, technical staff is brought in. The Killeen ISD uses this multi-tiered approach. In 1991, Killeen created a task force of community and business leaders, administrators, technology experts, parents and teachers to develop a districtwide technology vision. Members developed a technology mission for the district and a comprehensive strategic plan that outlined goals, objectives, strategies and action plans for improving and expanding the district's use of technology. The district hired a campus technology coordinator, referred to in Killeen as a technologist, for every school. The campus technologist works with teachers to get technology into the classroom to improve teacher and student performance. Campus technologists understand the teacher's needs and work with the information technology staff to find the right technology fit for each teacher.

It is also important that districts set standards for information technology staffing. For example, a district must determine how many Windows-based PCs and Macintosh computers one technician can support, how many trainers are needed per employee, and so forth. Resource allocation—especially of personnel—should fluctuate with the changes in the student population, the number of administrative users and the amount of equipment in use. To make this allocation process fair and equitable, it is important that schools monitor various ratios that measure the efficiency of staff. The benefits of setting these standards include equitable distribution of resources, fewer special requests, better budgeting capabilities and fairer productivity standards that can be easily monitored.

10 Control your inventory: know what you have and where it is

Computers and related items in Texas public schools are often misplaced or stolen.

Computers and related items in Texas public schools are often misplaced or stolen. This drain on resources can often be stopped by establishing an inventory control system and by compiling frequent fixed-asset inventories.

During a review of the Austin ISD, the district police chief told TSPR that 28 Austin ISD VCRs and a violin were discovered in a local pawnshop; each had a school district identification tag still on it. No one in the district had reported the items stolen—records showed they were current assets of the district.

In the Houston ISD, donated computers and equipment were not added to the list of fixed assets until the end of the year. Between the time of donation and year's end, many simply disappeared. Not only could the district not account for the lost equipment, they did not even know how much was missing. District staff reported to TSPR that many were stolen by district employees.

In the El Paso ISD, the person in charge of fixed assets had his own computer stolen from his desk.

While computer equipment is expensive, most components including laptop computers, keyboards and modems do not cost more than $5,000. This is the threshold set by the Texas Education Agency for items that must be included in a district's fixed-asset inventory.

TSPR recommends that districts count all items that cost more than $5,000 as fixed assets for capitalization purposes, but that they also maintain a control inventory of all computers and other equipment prone to theft. The control inventory should contain a list of every computer, its location and the individual responsible for that item. Periodically, the district's internal auditor or another designated employee should visit each campus and compare existing equipment to items on the control list. If an item does not have a control number or is not included on the list, the district's purchasing and distribution procedures should be examined.

Districts should not hesitate to launch investigations of missing equipment and file appropriate police reports and insurance claims.

Additional information about the various processes discussed in this report can be obtained from the following sources:

E-Rates:
Texas Education Agency – http://www.tea.state.tx.us/technology/erate/index.html

Schools and Libraries Division of the Universal Service Administrative Company – http://www.sl.universalservice.org

Information System Architecture:
Texas Department of Information Resources – http://www.dir.state.tx.us/oversight

Telecommunications Infrastructure Fund:
Telecommunications Infrastructure Fund Board – http://www.tifb.state.tx.us

Disaster Recovery/ Risk Assessment:
Texas Department of Information Resources – http://www.dir.state.tx.us/TIC/dir_info/cntngcy.htm

Telecommunications Infrastructure Fund Board – http://www.tifb.state.tx.us/Handbooks/Disaster_Recovery.htm

Texas School Performance Review :
Texas Comptroller of Public Accounts – http://www.window.state.tx.us/m26edu.html

e-Texas Commission:
Texas Comptroller of Public Accounts – http://www.e-texas.org

"Nothing is more important than education and our children are our most precious resource."
– Comptroller Carole Keeton Rylander

INNOVATIONS IN AMERICAN GOVERNMENT

The Texas School Performance Review won a 1999 Innovations in American Government award for its efforts to improve education. The awards are administered by the John F. Kennedy School of Government of Harvard University in partnership with the Council for Excellence in Government. They are funded by the Ford Foundation, which gave TSPR and nine other award winners $100,000 grants to replicate their cutting-edge programs across the nation. Learn more about the Innovations in American Government and this year's other winners at our web site www.window.state.tx.us/txinnovator/ti9911/special.html.

If you would like more information on any aspect of the Texas School Performance Review, please visit the Comptroller's Web site at

http://www.window.state.tx.us

or call 1-800-531-5441 extension 5-3676

Publication #96-720. April 2000
Texas School Performance Review
Texas Comptroller of Public Accounts
P.O. Box 13528
Austin, Texas 78711-3528

http://www.window.state.tx.us/tpr/tspr/tech10.html

U.S. Department of Education
Office of Educatonal Research and Improvement (OERI)
National Library of Education (NLE)

ERIC

I. DOCUMENT IDENTIFICATION:

Title:	Helping Schools Make Technology Work: Managing Information Technology from Classrooms to Lunchrooms	
Authors:	Texas School Performance Review section of the Texas Comptroller of Public Accounts Office	
Corporate Source:	Publication Date:	April 2000

II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announces in the monthly abstract journal of the ERIC system, Resources in Education (RIE), are usually made available to users in microfiche, reporduced paper copy, and electronic media, and sold through the ERIC Document Reproduction Service (EDRS). Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following three options below and sign at the bottom of the page.

The sample sticker shown below will be affixed to all Level 1 documents	The sample sticker shown below will be affixed to all Level 2A documents	The sample sticker shown below will be affixed to all Level 2B documents
PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY _____ TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)	PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE, AND IN ELECTRONIC MEDIA FOR ERIC COLLECTION SUBSCRIBERS ONLY,HHAS BEEN GRANTED BY _____ TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)	PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY _____ TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
Level 1	Level 2A	Level 2B
◉	○	○
Check here for Level 1 release, permitting reproduction and dissemination in microfiche or other ERIC archival media (e.g., electronic) and paper copy.	Check here for Level 2A release, permitting reproduction and dissemination in microfiche and in electronic media for ERIC archival collection subscribers only.	Check here for Level 2B release, permitting reproduction and dissemination in microfiche only.

Documents will be processed as indicated provided reproduction quality permits.
If permission to reproduce is granted, but no box is checked, documents will be processed at Level 1.

I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche or electronic media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries. (Typing your name below is the legal equivalent of signing a paper document.)

Name (Signature):	Betty J. Ressel	Position/Title:	Manager
Organization/Address:	Texas School Performance Review, Texas Comptroller of Public Accounts, P. O. Box 13528, Austin, Texas, 78711.		
Telephone:	512/463-3973	FAX:	512/475-1915
E-MAIL Address:	betty.ressel@cpa.state.tx.us	Date:	9/12/00

Carole Keeton Rylander
TEXAS COMPTROLLER OF PUBLIC ACCOUNTS

BETTY RESSEL, CPA
Texas School Performance Review

LBJ State Office Building
111 E. 17th Street
Austin, Texas 78774
betty.ressel@cpa.state.tx.us

PHONE 512 463-3973
TOLL FREE 1-800-531-5441
EXT. 3-3973
FAX 512 463-4226