DOCUMENT RESUME

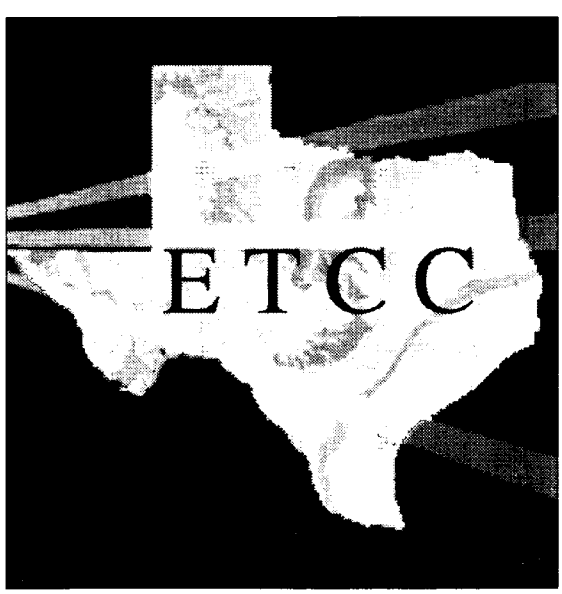
ED 479 031 IR 022 007

TITLE	Progress Report on the State of Texas Master Plan for Educational Technology, 2000-2003.
INSTITUTION	Texas Education Agency, Austin.
PUB DATE	2002-12-00
NOTE	116p.; Developed by the Education Technology Coordinating Council. For the State of Texas Master Plan for Educational Technology, 2000-2003, see ED 456 807.
AVAILABLE FROM	Texas Education Agency, Publications Distribution, P.O. Box 13817, Austin, TX 78711-3817 ($11). Tel: 512-463-9734; Fax: 512-463-9090; e-mail: etac@tea.state.tx.us; Web site: http://www.tea.state.tx.us/. For full text: http://www.tea.state.tx.us/technology/lrpt/lrpt_etcc.html/ .
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	EDRS Price MF01/PC05 Plus Postage.
DESCRIPTORS	*Educational Planning; *Educational Technology; Elementary Secondary Education; Higher Education; Statewide Planning; Teacher Education; Technology Integration; *Technology Planning; *Technology Uses in Education; Telecommunications; World Wide Web
IDENTIFIERS	*Technology Implementation; Texas

ABSTRACT

This progress report documents accomplishments and activities for September 2000 through August 2002 related to the State of Texas Master Plan for Educational Technology 2000-2003. The first section presents background, goals, and recommendations as adopted by the Education Technology Coordinating Council (ETCC) in December 1999. The second section describes implementation strategies for the 11 recommendations. The third section discusses the agencies and initiatives involved with planning and implementing educational technology in Texas. A glossary is included. The appendices include: the Texas Education Agency Rider, ETCC mission and charter statement, ETCC membership roster, ETCC agency Web site addresses, Master Technology Teacher Standards, TIF Discovery Grant summaries, and the "2002-2003 Texas STaR Chart: A Tool for Planning and Assessing School Technology and Readiness Aligned with the Long-Range Plan for Technology, 1996-2010." (MES)

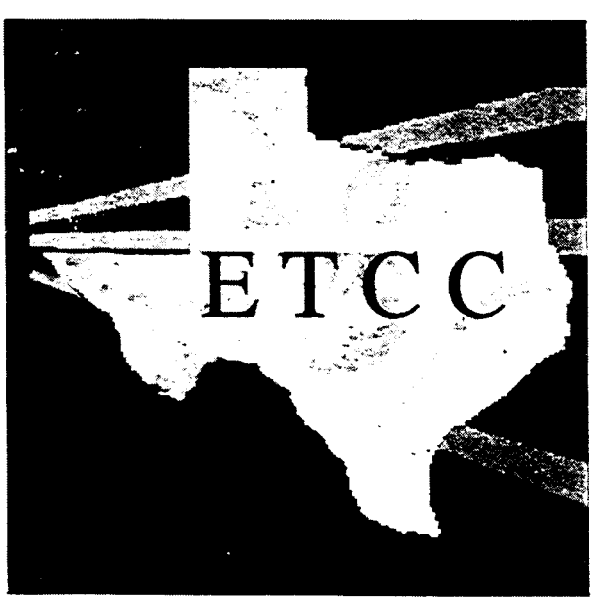
Progress Report on the State of Texas Master Plan for Educational Technology 2000-2003



Progress Report on the State of Texas Master Plan for Educational Technology 2000-2003

Developed by the Education Technology Coordinating Council

To purchase additional copies please use the order form found in the back of this publication. With the increasing demand for informational material, however, the supply may be exhausted at times.



TEXAS EDUCATION AGENCY

1701 North Congress Ave.★ Austin, Texas 78701-1494 ★ 512/463-9734 ★ FAX: 512/463-9838 ★ http://www.tea.state.tx.us

Felipe T. Alanis
Commissioner of Education

December 2002

The Honorable Rick Perry, Governor of Texas
The Honorable Bill Ratliff, Lieutenant Governor of Texas
The Honorable James E. "Pete" Laney, Speaker of the House of Representatives

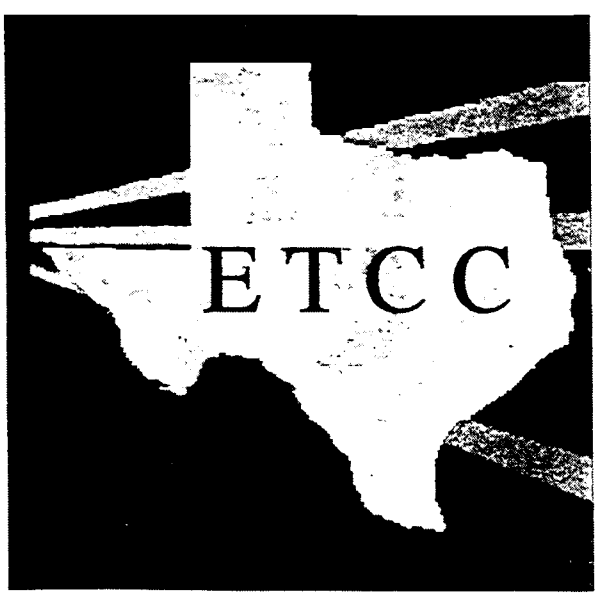
We are pleased to share with you the *Progress Report on the State of Texas Master Plan for Educational Technology 2000-2003*. The master plan was developed by the Education Technology Coordinating Council (ETCC) as called for under the provisions of Rider 74, House Bill 1, 76th Legislature to the Texas Education Agency.

This progress report documents accomplishments and activities from September 2000 through August 2002.

Ann Smisko
Associate Commissioner
Curriculum, Assessment, and Technology
Education Technology Coordinating Council, Chair

Table of Contents

Executive Summary



Executive Summary

As a result of the support of the Texas legislature and the collaborative efforts of the state agencies and higher education members that comprise the Educational Technology Coordinating Council (ETCC), the development and implementation of technology in our schools has reached an unprecedented level of sophistication. Teachers at all levels are becoming familiar with technology, using technology for professional development and discovering how technology may best help their students learn. Administrators, librarians and other school staff members are saving time, money and resources with business applications, support and professional development of their own. Districts are seeing an equalization of resources between smaller, rural areas and larger, urban communities. Education organizations and other entities are able to make a bigger and more consistent impact by using technology to deliver resources to districts and campuses. Most importantly, students are using technology every day, becoming proficient and comfortable with the tools that have become so widely established in recent years and will remain critical well into this century and beyond.

Technology fluency is no longer a plus in our society, but a necessity. The state continues to put into place a comprehensive technology system with voice, video and data capabilities. In addition, the human infrastructure that supports the technology is growing. Technology integration in schools has allowed greater collaboration between teachers, librarians, administrators and parents on behalf of students. This model of collaboration, facilitated by the technology, has evolved over time. Similarly, the ETCC member organizations charged with implementing the state of Texas' vision for educational technology are now collaborating more than at any previous time. This collaboration has produced greater benefits to the state's students and educators while increasing efficiency and effectiveness of state programs and decreasing redundancy. The collaborative processes and partnerships now in place will sustain the gains made.

The following are some examples of collaboration among ETCC member organizations:

- The K-16 Council addresses K-16 issues such as aligning high school graduation requirements with college and university admissions requirements, teacher preparation and certification, easing the K-12 teacher shortage and improving the success of all students, K-16. The original working group of staff members from the Texas Education Agency (TEA), State Board for Educator Certification (SBEC) and the Texas Higher Education Coordinating Board (THECB) has now been expanded to include representatives from all public university systems, colleges of education, private universities and staff members from legislative offices.

- More than 100 Texas universities and colleges received awards from the Telecommunications Infrastructure Fund (TIF) totaling approximately $19.5 million to expand access and improve quality of preservice and inservice teacher preparation programs through technology. The intent of this effort is to help "Close the Gap" for all students and teachers, P-16. In addition, access to Advanced Placement and dual-credit courses offered to Texas high school students will be expanded through this grant. Funding will also be used to upgrade existing network infrastructure to increase the performance and reliability of services

- The Technology Leadership Academy, housed at the University of Texas at Austin, represents a unique partnership between teacher preparation institutions and state educational agencies, including the University, TEA, SBEC, THECB and the Texas Center for Educational Technology (TCET) at the University of North Texas. It is a collaborative initiative funded by the U.S. Department of Education's Preparing Tomorrow's Teacher to Use Technology (PT3) program to create a statewide network community of teacher preparation programs focused on building capacity within the higher education community to support teacher preparation.

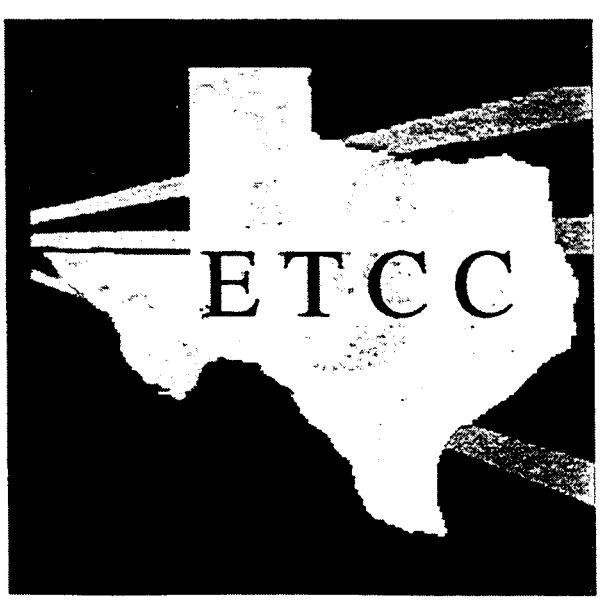
- TIF's Discovery Grant program brings together a wide variety of partners in collaborative efforts that benefit Texas citizens accessing public schools, libraries, the Texas State Library and higher education and healthcare services.

- TIF grants were designed to ensure that K-12 campus libraries have sufficient telecommunications infrastructure so students and staff have full access to all the resources included in TEA's Texas Library Connection (TLC) initiative. Building on the results from a 2000 survey of campuses funded by TEA, TIF announced the availability of funding through a non-competitive process targeted to schools that had never applied to participate in TLC in order to provide technology advancement to Texas public school libraries.

- The Link to Learn project, funded by TIF, is designed to ensure that all citizens of Texas communities, especially K-12 students, are provided the information and skills to effectively use information resources available through the common databases of the TLC provided by TEA, and TexShare provided by the Texas State Library and Archives Commission (TSLAC).

- PS10, one of the non-competitive public school grants awarded through TIF during the 2001-02 school year, was specifically designed to support Technology Applications at Grades 6-12. Through this grant, more than $57 million was awarded to more than 500 school districts.

Background, Goals and Recommendations
as adopted by ETCC
December 1999



Background, Goals and Recommendations

BACKGROUND

CHARGE

The 76th Legislature, recognizing the need for a more integrated vision and planning process for the cross-agency implementation of educational technology initiatives, directed the Texas Education Agency (TEA) to convene an Educational Technology Coordinating Council (ETCC) under Rider 74 to the FY 00-01 TEA Appropriations as follows:

> *The Texas Education Agency, the Department of Information Resources, the General Services Commission, the State Board for Educator Certification, the Telecommunications Infrastructure Fund Board, the State Library and Archives Commission, the Higher Education Coordinating Board and Colleges of Education shall direct a representative of their agency or institution to participate in a Education Technology Coordinating Council designed to ensure the cooperation and coordination of the state's efforts to implement educational technology initiatives. The Council is also charged with the development of a statewide master plan for educational technology. The Council shall give particular attention to the coordination of preservice and inservice training for teachers and librarians. Participating agencies shall share resources as necessary to provide adequate staff for the Council.*

The 77th Legislature directed the continuation of the ETCC under Rider 70 to the FY 02-03 TEA Appropriations as follows:

> *The Texas Education Agency (TEA), the Department of Information Resources (DIR), the General Services Commission (GSC), the State Board for Educator Certification (SBEC), the Telecommunications Infrastructure Fund Board (TIFB), the State Library and Archives Commission (SLAC), the Higher Education Coordinating Board (HECB), Colleges of Education, and the Colleges of Library Science shall ensure that their Agency Strategic Plans adhere to and support the State of Texas Master Plan for Educational Technology prepared by the Education Technology Coordinating Council (the Council) under the provisions of Rider 74, House Bill 1, Seventy-sixth Legislature.*
>
> *The TEA, DIR, GSC, SBEC, TIFB, SLAC, HECB, Colleges of Education, and the Colleges of Library Science shall direct a representative of their agency or institution to participate in the Council. The Council shall ensure the coordination of the state's efforts to implement educational technology initiatives.*

The Council is charged with the continuing development and maintenance of the State of Texas Master Plan for Educational Technology and submitting an updated Master Plan to the Legislature in December of every even-numbered year. The Plan shall articulate the vision and maintain the unified policy direction to guide the creation and implementation of education technology initiatives in Texas.

The ETCC shall give particular attention to the coordination of preservice and inservice training for teachers and librarians.

Note: The General Services Commission (GSC) has been renamed the Texas Building and Procurement Commission.

IMPLEMENTATION

The intent of the ETCC is to facilitate collaboration and coordination among state agencies and institutions of higher education. The ETCC also enhances the opportunities for Texas students and educators to acquire the knowledge and skills necessary for success in the digital world. The ETCC represents the interests of the state of Texas, Texas state agencies, institutions of higher education and local education agencies to reinforce the state's efforts to implement educational technology initiatives. The Council met quarterly to facilitate implementation of its goals, exchange information and provide a forum for discussion. A new ETCC web site was designed and developed at www.etcc.state.tx.us.

GUIDING PRINCIPLES

The ETCC was guided by the following principles:

- Texas should have a unified policy direction allowing the state to address new challenges and conflicts as they arise.
- State agencies and universities must coordinate their efforts to ensure efficiency and effectiveness in achieving educational technology objectives.
- Preservice and inservice training is essential to ensure that educators are prepared to integrate technology effectively into classrooms and educate students.
- Texas should employ a single statewide strategic plan to support a unified set of objectives for the use of educational technology in Texas.

ETCC MISSION

The Education Technology Coordinating Council (Council) is established to represent the interest of both the State of Texas and state agencies and institutions of higher education (agencies) to ensure the cooperation and coordination of the state's efforts to implement educational technology initiatives. The Council shall develop a statewide master plan for educational technology. The Council shall give particular attention to the coordination of preservice and inservice training for teachers and librarians.

Participating agencies shall share resources as necessary to provide adequate staff for the Council. For the purposes of this report, Colleges of Education refers to schools, colleges or departments of education (SCDE).

The Council recognizes that it has a higher duty to represent the interests of the State of Texas over the individual interests of state agencies. If there are conflicts between the needs and interests of the State of Texas and the interests of any individual agency, the Council will make recommendations that consider the greater interests of the State of Texas.

More information on the ETCC Mission and Charter Statement can be found in the Appendix.

GOALS

Eight goals and twelve recommendations were developed by the ETCC (listed below) in 1999. Progress has been made on each of these guiding principles as indicated in the Implementation Strategies section of this report.

Goal 1: Articulate the vision for and maintain a unified policy direction among Council members to guide the creation and implementation of educational technology initiatives in Texas.

Goal 2: Ensure quality preservice and professional development to enable educators to effectively and efficiently use technology to improve student learning and administrative processes.

Goal 3: Develop the leadership in planning and implementation needed to ensure effective and efficient use of the technologies made available to educators.

Goal 4: Coordinate technology-related funding processes among state agencies to provide maximum benefits to schools and teacher preparation institutions, and issue grants to maximize a coordinated effort.

Goal 5: Help educational institutions understand the resources that are available and the most beneficial ways to use them.

Goal 6: Identify and develop profiles and select and disseminate exemplary practices of technology infrastructures within the state.

Goal 7: Promote a minimum level of technology access and use in the state's local education agencies and teacher preparation institutions.

Goal 8: Promote interoperability of technology resources and processes to derive maximum benefits for state and local investments in technology resources.

The success of the goals established by the ETCC is highly dependent on the collaboration of member agencies. The table below highlights the involvement of each member agency by goal.

ETCC Goals	TEA	DIR	GSC*	SBEC	TIF	TSLAC	THECB	SCDE
Goal 1 (Vision)	√	√	√	√	√	√	√	√
Goal 2 (Professional Dev.)	√			√	√	√	√	√
Goal 3 (Leadership)	√			√		√		√
Goal 4 (Coordination)	√	√	√		√	√		√
Goal 5 (Resources)	√				√	√		√
Goal 6 (Profiles)	√	√	√	√	√	√	√	√
Goal 7 (Access)	√	√	√	√	√	√	√	√
Goal 8 (Interoperability)	√	√	√		√	√		

*The lead agency or agencies are shaded. For agency names associated with acronyms shown in the cart above, see page 7.

*The General Services Commission (GSC) has been renamed the Texas Building and Procurement Commission.

RECOMMENDATIONS

The ETCC's goals provide the basis for comprehensive planning of educational technology initiatives, and set the direction and tone for coordination and collaboration among state agencies and institutions of higher education in Texas. The recommendations form a statewide plan for collaboratively implementing educational technology. In brief, the Council's original recommendations, as adopted by the Council in December 1999 are as follows:

1. Amend Rider 74, House Bill 1, 76th Legislature to continue the Education Technology Coordinating Council or successor group, and include Rider 74 in the bill pattern of each participating agency.

2. Continue coordination among the Telecommunications Infrastructure Fund Board, Texas Education Agency, and Texas State Library grant processes.

3. Identify E-Rate funding recipients and assist non-participants in securing funding.

4. Develop a process for the SCDE to infuse technology within teacher education.

5. Develop a process for Colleges of Library Sciences to infuse technology within librarian education.

6. Identify models and strategies to provide opportunities for inservice educators to meet the technology proficiency benchmarks as established by SBEC.

7. Establish minimum standards for technology sustainability at schools and libraries.

8. Determine public education's role in creating a workforce for the digital economy.

9. Establish Web-based information resources via a Web portal that enables educators to make effective technology decisions.

10. Encourage local leadership, resource development and community involvement for the use of technology in education.

11. Develop strategies for implementing and sustaining the goals of the ETCC.

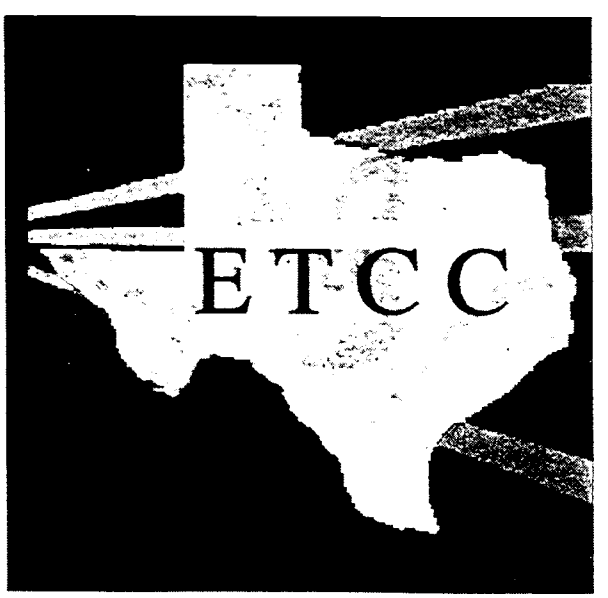
12. Adopt the Texas School Technology and Readiness (STaR) Chart as the standard for K-12, and the CEO Forum's Teacher Preparation STaR Chart as the standard for SCDE.

The following chart identifies the correlation between each ETCC goal and recommendation.

Recommendations	**Goal 1**	**Goal 2**	**Goal 3**	**Goal 4**	**Goal 5**	**Goal 6**	**Goal 7**	**Goal 8**
Recommendation 1	√							
Recommendation 2	√	√		√				
Recommendation 3	√			√	√		√	
Recommendation 4		√	√	√	√	√	√	√
Recommendation 5		√	√	√	√	√	√	√
Recommendation 6		√	√	√	√	√	√	
Recommendation 7	√		√	√	√	√	√	√
Recommendation 8	√	√	√					
Recommendation 9	√	√	√	√	√	√	√	√
Recommendation 10	√	√	√	√	√	√	√	
Recommendation 11	√							
Recommendation 12	√	√	√	√	√	√	√	√

A more detailed description of each recommendation can be found in the chapters that follow, including a discussion of the implementation efforts that have been made for each guiding principle during the past two years.

Implementation Strategies



Implementation Strategies

A State of Texas Master Plan for Educational Technology was developed during the 2000-2001 biennium. The plan set forth a number of recommendations to enhance coordination and collaboration among state agencies and schools, colleges and departments of education (SCDE) in educational technology efforts and initiatives.

The goals established for the ETCC provide the basis for comprehensive planning for educational technology initiatives, setting the direction and tone for coordination and collaboration in Texas. The recommendations serve as an implementation plan for achieving statewide collaboration on educational technology. Each recommendation is listed below, and the activities toward its implementation are described.

Recommendation 1: The ETCC shall continue to meet as directed by the Legislature.

The ETCC was scheduled to expire at the end of the 2000-2001 biennium. The ETCC's first recommendation was to amend the original Rider 74 to continue the ETCC. At the recommendation of the ETCC, Rider 70 of TEA's Appropriation was adopted by the 77th Legislature as follows:

> Education Technology Coordinating Council.
>
> *The Texas Education Agency (TEA), the Department of Information Resources (DIR), the General Services Commission (GSC)*, the State Board for Educator Certification (SBEC), the Telecommunications Infrastructure Fund Board (TIFB), the State Library and Archives Commission (SLAC), the Texas Higher Education Coordinating Board (THECB), Colleges of Education, and the Colleges of Library Science shall ensure that their Agency Strategic Plans adhere to and support the State of Texas Master Plan for Educational Technology prepared by the Education Technology Coordinating Council (the Council) under the provisions of Rider 74, House Bill 1, Seventy-sixth Legislature.*
>
> *The TEA, DIR, GSC, SBEC, TIFB, SLAC, THECB, Colleges of Education, and the Colleges of Library Science shall direct a representative of their agency or institution to participate in the Council. The Council shall ensure the coordination of the state's efforts to implement educational technology initiatives.*
>
> *The Council is charged with the continuing development and maintenance of the State of Texas Master Plan for Educational Technology and submitting an updated Master Plan to the Legislature in December of every even-numbered year. The Plan shall articulate the vision and maintain the unified policy direction to guide the creation and implementation of education technology initiatives in Texas.*
>
> *The ETCC shall give particular attention to the coordination of preservice and inservice training for teachers and librarians.*

Rider 70 was included in the bill pattern of TEA to ensure coordination of educational technology initiatives in the State of Texas.

*The GSC has been renamed the Texas Building and Procurement Commission. Its telecommunications-related functions were transferred to DIR.

Recommendation 2: Continue coordination among the Telecommunications Infrastructure Fund Board, Texas Education Agency and Texas State Library grant processes.

Current grant processes require TEA and TIF grant applicants to list other grants received.

PS10 (Public Schools), TIF's noncompetitive grant for public schools, focuses on support of the Technology Applications curriculum at Grades 6-12. Through this grant, more than $57 million was awarded to more than 500 school districts. PS9 allows eligible school libraries to buy library automation and cataloging software, a library server, workstations and printers. In addition, PS8 grants could be amended to purchase any of this equipment or software for schools' libraries.

As a result of extensive collaboration between TIF and TEA, these grant programs were designed to make it possible for many schools to become eligible for participation in TEA's Texas Library Connections (TLC) program. This participation enables K-12 students in those campuses to access a wealth of resources from their school or home.

Communication among TEA, TIF and the Texas State Library and Archives Commission (TSLAC) was ongoing throughout the year. TIF Working Groups played an instrumental role in collecting information for needs assessments and guiding the TIF Board and staff in developing Requests for Proposals (RFPs) for its constituent groups. A representative from TEA served on the Public Education Working Group to guide the RFP process for schools. Representatives from TSLAC and TEA served on the Library Working Group to help guide the RFP process for libraries. Although not in the description above, the Higher Education Working Group had membership from the Texas Higher Education Coordinating Board (THECB) as well. The Working Groups served a critical function to ensure that the constituent groups' needs were met, not only with technology funding, but also in coordinating grant timing for applications and due dates.

From January 2001 to August 2002, the Working Groups made recommendations to the TIF staff and directly to TIF's nine-member Board. The other members of the Working Groups, besides those representing the appropriate state agencies such as TEA and TSLAC, are people who work within the libraries and schools in different capacities, such as technology directors, library directors, superintendents and representatives from the education service centers (ESCs) and Library Systems. These forums, with diverse representation from various parts of Texas, discuss constituent needs and coordinate efforts. They communicate the existing needs and make suggestions and recommendations regarding the questions (who, what, when, where, and what for) that go into constructing a grant initiative.

The public school grant awarded in May 2001 was a collaborative effort with TEA's Technology Integration in Education (TIE) grant. A joint press release was made public upon award. Two library grants awarded in 2001 focused on academic libraries and public libraries. They were issued at the recommendation of the Working Groups. The Working Groups contributed significantly in writing the six library RFPs and the three public school RFPs that have been released since those grants were awarded. These RFPs all targeted different needs throughout the state in the library and school arenas. To expand, three of the library grants were offered to school libraries, two were offered to public libraries, and one was offered to libraries of higher education. One of the school grants was for eligible public schools and charter schools, and the other was specifically targeted to alternative campuses. A final open-ended RFP was offered to all public school campuses that had never benefited from a TIF grant to the district.

Results of formal needs assessments will be available in FY 03 for K-12 libraries, healthcare and community networks. These formal needs assessments will be used to identify existing and future needs and provide direction for targeting funding.

TIF and TEA are also collaborating with the TSLAC and ESCs to provide training for public school librarians and public librarians. Training on utilizing and navigating the TexShare databases and TLC is conducted so that students can be shown how to use these resources at either location.

TIF will continue to keep open communications with TEA and TSLAC. The Working Groups, with memberships of both of these agencies, will also continue guiding the recommendations for future funding and RFP intent so that the state's efforts are coordinated.

Recommendation 3: Identify E-Rate funding recipients and assist non-participants in securing funding.

Eligibility for funding sources such as E-Rate, the TIE grant program, and TIF require that districts have their own technology plans in place.

The federal Universal Service Fund for Schools and Libraries, more commonly referred to as E-Rate, provides discounts to schools and libraries on telecommunications services. These services can include local telephone service, high-speed data communications lines, Internet access and internal connections. Discounts range from 20% to 90% on eligible services. The discounts are based on the number of students eligible for the federal school lunch program.

To be eligible to participate in the E-Rate program, schools must have an approved technology plan. As part of their technology plan submittal process, schools must complete the Texas STaR Chart, developed by TEA's Educational Technology Advisory Committee. TEA is the official approving agency for public schools in Texas.

The approval process begins with a peer review at the ESC level. Plans forwarded to TEA are reviewed again. If the plan is not approved, TEA and ESC staffs work with districts to ensure that plans meet the Schools and Libraries Division (SLD) criteria and are certified for E-Rate.

TEA provides information about the E-Rate program on the Educational Technology section of the Agency web site with links to the Schools and Libraries Division (SLD) and other appropriate web sites. TEA participates in weekly conference calls with other states and the SLD to stay current on E-Rate issues. TEA also sends weekly updates on the program via e-mail to the ESCs who share with their school districts and provide additional assistance with E-Rate. TETN sessions are held by the Agency to inform ESCs and independent school districts (ISDs) about major updates to the E-Rate process.

Libraries are also eligible for E-Rate. TSLAC works with public libraries to assist them in the process. TSLAC is the official approving agency for public libraries' technology plans required for E-Rate.

TIF agrees that its constituents should take advantage of the available E-Rate funding. The agency recognizes that these federal funds contribute significantly to constituents' projects by freeing up state funds to use in technology hardware and training initiatives.

TIF continues to provide support for those interested in applying for E-Rate. TIF grant administrators provide contact information to grantees if they need assistance with the E-Rate application. Unfortunately, with the current staff size, TIF grant administrators are unable to dedicate resources to assisting those who have never applied for E-Rate funding; however, they do provide assistance by informing the potential applicant about other groups to contact for assistance, such as the ESCs and Library Systems.

Recommendation 4: *Develop a process for the SCDE to infuse technology within teacher education.*

A grant for the SCDE should be implemented to help these entities infuse technology throughout all aspects of teacher preparation and ensure that all new educators meet the state teacher technology standards. The grant should be developed by the SBEC in conjunction with TEA, TIF and the SCDE of each state university.

The Texas Higher Education Coordinating Board (THECB) has supported and continues to support a number of processes that assist the schools, colleges, and departments of education (SCDEs) to infuse technology into teacher education. The first process is the Eisenhower Professional Development Grants Program. THECB annually awards approximately $5 million in federal Eisenhower Grants to Texas institutions of higher education for the improvement of instruction in K-12 mathematics, science, and reading. The Eisenhower grant regulations require the institutions to embed appropriate up-to-date instructional technology in all projects funded by THECB. In addition, the Eisenhower grant regulations require the institutions' Colleges of Education to collaborate with their Colleges of Arts & Sciences to provide the most current disciplinary-specific technology for the preservice and inservice teachers who

participate in the projects. For 2002-2003, THECB made awards totaling $5.1 million for 65 Eisenhower projects; these projects will provide more than 2,000 teachers and approximately 45,000 K-12 students across the state with instruction infused with technology.

A second process the THECB administers annually is the funding for the Centers for Teacher Education at independent general academic institutions that are component institutions of the Texas Association of Developing Colleges (TADC). Fund are used to enhance the technology resources of the libraries, for equipment and upgrades in the mathematics, science and computer science laboratories, and to support technology upgrades and improvements in the teacher education programs at Paul Quinn College, Texas College, Wiley College, Jarvis College and Huston-Tillotson College. THECB administers approximately $3.5 million per year of trusteed general revenue; these funds provide assistance for approximately 300 preservice teacher education students, teacher education programs and teacher education faculty activities on the campuses of the TADC.

A third process that the THECB supports is technical assistance to the SCDEs for their grant applications to federal, state and other funding sources. Coordinating Board staff is available to assist with the review of preliminary proposals and to assist with letters of support for grant applications to major funding sources such as the Fund for the Improvement of Postsecondary Education (FIPSE), National Science Foundation (NSF), National Endowment for the Humanities (NEH) and National Institutes of Health (NIH). For example, THECB staff recently assisted with the successful proposal from UT-Austin to FIPSE for their statewide project on "Standards-Based Teacher Preparation in Mathematics." This 3-year project (November 2001—November 2004) will mobilize broad-based statewide faculty leadership for upgrading the preparation of mathematics teachers including upgrading their preparation in the relevant instructional technology.

This process of supporting grant opportunities for SCDEs to improve their programs, and to infuse technology into teacher education, has been and will continue to be a priority for the THECB. In addition, Coordinating Board staff continue to work collaboratively with SBEC staff to identify and develop state-level grant funding opportunities that could potentially benefit all SCDEs in the state, assisting them with the infusion of technology in teacher education.

SBEC has addressed technology knowledge and skills in the Pedagogy and Professional Responsibilities standards. Beginning with the implementation of the Texas Examination of Educator Standards (TExES) tests in October 2002, every candidate seeking initial certification will be tested on these technology standards. In addition, educators seeking renewal of their standard certificates are encouraged to include continued training in technology on their professional development as appropriate.

Entities seeking to establish new teacher preparation programs must demonstrate that they have incorporated these standards into their curriculum and have developed assessments and benchmarks to ensure that the candidate has ample opportunities to demonstrate mastery of these standards. All existing teacher preparation programs are

required to revise their curriculum to incorporate these standards into their regular programs as well.

In addition, to date, 17 entities have developed teacher preparation programs for the Technology Applications, Grades 8-12 certificate and five entities for the Computer Science, Grades 8-12 certificate. The curricula for these programs have been built using the appropriate standards which will allow entities to align their training with certificate exams and the respective Texas Essential Knowledge and Skills (TEKS). An all-level certificate for Technology Applications was also approved by the Board to provide qualified teachers to teach the Technology Applications TEKS in Grades 1-8 as well as in Grades 8-12.

House Bill 1475 passed by the state legislature in 2001 created the Master Technology Teacher (MTT) certificate. This all-level certificate was created to provide master teachers in the field of technology whose role is to mentor other teachers in incorporating technology into their classrooms in all disciplines and grade levels. Standards for this certificate were approved by SBEC on January 4, 2002, with the certification exam being available initially in the summer of 2003. As of fall 2002, two universities have been approved by the SBEC Board to begin preparing teachers for this new certificate and additional entities are being solicited and advised by SBEC staff to create MTT programs.

In all of these certification programs, entities made extensive use of online courses to provide the training to candidates seeking certification.

In addition to the development of technology standards for teachers and master teachers, SBEC has approved standards for the Principal and Superintendent certificates that incorporate the appropriate technology knowledge and skills for these instructional leaders.

In both the 19 Texas Administrative Code (TAC) Chapter 241 Principal Certificate and the 19 Texas Administrative Code (TAC) Chapter 242 Superintendent Certificate, SBEC has designated specific knowledge and skills on which the campus and district leaders must demonstrate proficiency as part of their certification programs. For example, the superintendents and principals are expected to incorporate technology as part of their district or campus professional development plans to address staff needs in addition to being part of their own professional growth and lifelong learning activities. Both types of leaders are expected to use technology as part of being effective communicators themselves and as an integral segment of developing district or campus communications plans.

SBEC views the principal as the educational leader who promotes student success through the utilization of technology to enhance school management. The Board has expanded this vision indicating that, as the campus instructional leader, the principal must be able to facilitate the use and integration of technology, telecommunications and information systems to enrich the campus curriculum and to enhance student learning.

At the district level, the superintendent is the educational leader who promotes student success through the use of technology to enhance school district operations.

Clearly, SBEC places an increased importance and emphasis on all educators' ability to use technology in today's schools through the rigorous new standards for the Principal and Superintendent certificates.

Recommendation 5: Develop a process for Colleges of Library Sciences to infuse technology within librarian education.

In Texas public school libraries, librarians and media specialists are now better-prepared due to new certification standards and relevant professional development for campus librarians collaboratively provided by TSLAC and TEA. This collaboration model is one we see throughout the state, as librarians and teachers work together to integrate research skills into the curriculum.

THECB supports processes similar to those for SCDEs, as a way to assist Colleges of Library Science to infuse technology within librarian education. Coordinating Board staff is available to assist with the review of preliminary proposals to appropriate funding sources, to provide technical advice in the development of proposals and to provide letters of support for grant applications to federal, state and other funding sources. The goal is to help the Colleges of Library Science to provide all new librarians with competence in technology.

In addition to the development of technology standards for teachers, master teachers, principals and superintendents, the SBEC Board has approved standards for the School Librarian certificate that incorporate mastery of technology for these educational leaders. In the 19 Texas Administrative Code (TAC) Chapter 239, Subchapter B. School Librarian Certificate, SBEC designated the specific standards, knowledge and skills the candidate must demonstrate proficiency in as part of their certification program. In the six standards approved for the certificate, an entire standard (Standard III) focuses on the librarian as an educational leader who promotes student achievement by facilitating the use and integration of technology, telecommunications and information systems to enrich the curriculum and enhance learning. The school librarian must be able to employ existing and emerging technologies for management applications and as well as for application to instructional programs. The school librarian is expected to use technology to assist students and in support of the library program as part of an integrated learning environment.

Recommendation 6: Identify models and strategies to provide opportunities for inservice educators to meet the technology proficiency benchmarks as established by SBEC.

SBEC has participated in the efforts of the state agencies and the Texas Staff Development Council in finding opportunities to provide quality professional development for meeting the technology benchmarks. In addition, SBEC has approved entities to be providers of continuing education, particularly in the areas of technology.

Entities developing new teacher preparation programs have been required to show how they will ensure that the new teacher has demonstrated mastery of the technology standards required for all teachers. These entities have been encouraged to provide candidates with greater accessibility to training or courses through the use of technology in venues such as online or distance learning courses or e-mail.

With the development of the standards for the Master Technology Teacher, entities are now developing certification programs to prepare teachers to be able to mentor other teachers in the use of technology at all grade levels and in all disciplines. Individuals certified in this area will be able to both teach Technology Applications as well as to assist and mentor other teachers in the use of technology. These Master Technology Teachers will serve as another source to provide opportunities for inservice educators to meet the technology proficiency benchmarks.

TIF's first task was to deploy infrastructure into libraries, schools, institutions of higher education and public not-for-profit healthcare institutions. The funds were utilized mainly for infrastructure and equipment. TIF also required all school grant recipients to send at least six people to TIFTech training. This was a basic-level training to get teachers comfortable with equipment and with integrating technology into the classrooms. TIF currently targets funds within specific grant initiatives that lead to more professional development for teachers in technology applications.

A major TIF priority is to require additional technology training for teachers. Although basic Internet usage, networking and curriculum integration were incorporated into mandatory TIFTech training, TIF now requires a percentage of funds be used for professional development in technology (typically at least 20% of the funding must be directed towards this training.) TIF has also funded separate projects such as Intel, Teach to the Future, the Brazos-Sabine Consortium, and the Voyager Learning Project which all focus on training master teachers in the use of technology into the classroom, who in turn train other teachers, and eventually the entire district. Discovery grants provided by TIF are competitive grants that encourage collaborations among schools, libraries, institutions of higher education and public not-for-profit health care facilities. The grants seek ways to solve everyday problems by using technology. Many of these grants address teacher shortages, staff development and alternative educational delivery means, such as distance learning.

The TIF Public Education Working Group continues to give priority to technology training and TIF will continue to place professional development requirements within its grants to support efforts to educate teachers in technology applications and integration.

TEA's TIE grant program under the Technology Literacy Challenge Fund (TLCF) provided resources to school districts to fund opportunities for inservice educators to meet the technology proficiency benchmarks as established by SBEC. Every grant was required to address professional development and many focused 100% of the funds on professional development. Several proven, effective models were expanded through this process. The new state-level Technology Applications Readiness Grants for Empowering

Texas students and teachers (TARGET) grant program to implement Title II Part D of the NCLB legislation requires that at least 25% of both the formula and competitive grant funds address technology professional development.

Recommendation 7. Establish minimum standards for technology sustainability at schools and libraries.

Minimum standards for technology sustainability should be published that encourage a minimum level of technical proficiencies in order to implement and support internal technology for the classrooms. If the skills cannot be located among the district staff, contracted services should be encouraged. Minimum competency standards should include:

- A technology sustainability plan addressing both financial and organizational issues
- Skill sets for staff in information resources departmental areas
- Standards for equipment used within districts
- Technology planning and contract management skills
- Interoperability requirements.

The Texas STaR Chart outlines the standards that align with the Long-Range Plan for Technology, 1996-2010. The standards are explained for Beginning Tech, Developing Tech, Advanced Tech and Target Tech levels in the four categories of the plan – Teaching and Learning, Educator Preparation and Development, Administration and Support, and Infrastructure for Technology.

Through its Technology Working Group, TIF maintains minimum specifications for technology in many different areas. Although these standards are dynamic, due to the changing nature of technology, they are published on TIF's web site and updated periodically. These standards can be viewed on the TIF web site at http://www.tifb.state.tx.us/Handbooks/handbooks.html under Technical Standards. Members of the Technology Working Group consist of technology coordinators within TIF's four constituent groups, vendors from around the state and representatives from various other state agencies, such as DIR. The published standards include: general infrastructure standards, telemedicine standards, community network standards, laptop computing standards, distance learning classroom and desktop sets, minimum specifications for wireless Internet connections and a link to the Department of Information Resources (DIR) Standards/Rules & Guidelines. A link to the TIF web site with minimum specifications are included in each RFP upon release.

SBEC has set technology standards in which all teachers must maintain proficiency. These minimum standards, coupled with preparing additional teachers in Technology Applications, Grades EC-12, Computer Science, Grades 8-12, and the Master Technology Teacher programs, will help to provide the technology sustainability needed at each campus.

TSLAC has, as required by the Legislature, established voluntary standards for school libraries. These standards reference technology in several aspects of school library operations. For public libraries the TSLAC works closely with library staff, both directly and through the regional library systems, to help libraries develop technology plans and grant applications, advise on funding sources and to offer extensive training in a wide range of technology related topics (planning, management, funding, security, technical issues, etc.) for library staff. In addition, TSLAC has a grant program, Technical Assistance Negotiated Grants (TANG). These grants, offered to the regional library systems, fund a wide range of technology assistance activities to support public access computing. TSLAC also implemented a grant from the Gates Foundation which placed computers in public libraries around the state and offered technical training for library staff.

The library standards, adopted in 1997, were evaluated in 2002 in a study initiated by TSLAC. The research was completed by an independent research firm, EGS Research, Austin, Texas. The complete study may be seen on the TSLAC web site: www.tsl.state.tx.us/ld/pubs/schlibsurvey/index.html.

The current school library standards are being revised by a statewide committee composed of building level librarians, school board members, teachers, university and ESC librarians, lay people and staff of TSLAC and TEA. The update is required, but is also critical because of the advances in technology over the last four years. The estimated date of presentation to both the SBOE and the commissioners of TSLAC is early 2003.

The public library activities listed above are on-going. However, during this reporting period the TSLAC also worked closely with the TIF Library Working Group to coordinate activities (training, support) to help libraries meet their information technology related needs.

In addition to the activities listed above, TSLAC will finalize the updated school library standards. TSLAC will also implement distance learning technology (both at TSLAC and in the regional library systems areas) to enhance training opportunities for library staff. Technology-related training will be a prominent part of the training modules developed for delivery via distance technology—available where and when needed by staff. TSLAC will be implementing a new grant opportunity from the Gates Foundation to enhance technology sustainability.

Recommendation 8: Determine public education's role in creating a workforce for the digital economy.

The *Governor's Vision* states that the children of Texas should receive the knowledge and skills needed in the next century. The knowledge and skills should include the use of technology required in today's workforce. Targeted funding is needed to assist school districts with the implementation of Technology Application courses at the secondary level. TEKS and other career and content areas should be fully implemented in all school districts to ensure opportunities for students to acquire skills in short supply within the

digital workforce. Partnerships with business and industry to expand Tech Prep and Technology Education programs should be encouraged.

Much of the change in education throughout the state is a result of the new Texas Essential Knowledge and Skills (TEKS) curriculum standards which became effective September 1, 1998. The TEKS weave expectations for technology learning and use throughout the K-12 learning process, reinventing what we think of as the traditional teacher-to-student instructional model.

The goal of the Technology Applications TEKS is for students to gain technology-based knowledge and skills and to apply them to all curriculum areas at all grade levels. The ability to acquire information, solve problems, and communicate using technology is important for all students and educators today and in the future. These Technology Applications standards are important for lifelong learning in a digital age.

Today, the TEKS not only define technology expectations, but also provide opportunities for technology learning in all aspects of the curriculum. With the required Technology Applications enrichment curriculum, students build on a continuum of knowledge and skills for Grades K-12. Districts must offer at least four of the Technology Applications courses in 19 Technology Application Courses Chapter 126. This clarification became effective September 1, 2001. All Texas high school students are required to earn one Technology Applications graduation credit. Enrollment in Technology Applications courses increases each year.

Educators are getting the support they need to continue as learners, finding assistance from a wide variety of nontraditional sources such as distance learning available through satellite, videoconferencing, and the Internet. TEA is collaborating with Education Service Center, Region 20, to provide for-credit distance learning programs to Texas public schools using the statewide, digital Texas School Telecommunications Access Resource (T-STAR) Network. The satellite equipment at more than 350 T-STAR school sites was upgraded to receive digital programming from TEA and other programming providers across the country.

Recommendation 9: *Establish Web-based information resources via a Web portal that enables educators to make effective technology decisions.*

Projects to establish Web-based resources for educational information should be established and funded. These programs should be implemented under the direction of SBEC, TEA, TIF and TSLAC. The web sites would dedicate content to the following:

- Information on distance learning courses (offered and received), curriculum enhancement, and professional development opportunities related to education and technology.
- Access to other Web-based resources of state agencies related to education and technology.

The Technology Leadership Academy, a Preparing Tomorrow's Teachers to Use Technology (PT3) Catalyst grant, volunteered its webmaster and project coordinator to develop and maintain the ETCC web site for 2001-2002. The ETCC Web Portal Subcommittee consisted of representatives from SCDE, TEA, THECB and TSLAC. Since 2001, the subcommittee has met approximately five times in addition to e-mail correspondence. During the ETCC quarterly meetings, the subcommittee reported updates on the web site, requested input from members and incorporated member feedback into the development of the web site.

The home page of the ETCC was redesigned and ETCC members were asked to provide a link to the ETCC web site from their organizational web site. Permission was granted to change the URL address of the ETCC from www.edb.utexas.edu/etcc to www.etcc.state.tx.us. The web site is compliant with regulations for individuals with disabilities.

The ETCC web site contains the *Master Plan for Educational Technology 2000-2003* in both pdf and html formats, the ETCC adopted definition of technology, minutes from ETCC meetings, a listing of members and their contact information, the mission that guides the ETCC, a calendar of education and technology events in Texas, ETCC committee information, a password protected area for ETCC members to use for conferencing and e-mailing and key ETCC-related web sites.

A challenge faced by this subcommittee was deciding how comprehensive the ETCC web site should be, especially with regard to identifying distance learning courses, curriculum enhancement and professional development opportunities. This task was extremely difficult because there is a vast amount of rapidly changing information on the Web about these topics that would have to be filtered to develop a comprehensive list. To create such a complete web site would require a full-time webmaster. Unfortunately, neither the ETCC nor its members had the funds to hire such a person. The ETCC decided to use the Technology Leadership Academy's webmaster to begin development of a Web portal with recommendations from members regarding existing resources available through their agencies' web sites.

To identify Web-based resources of state agencies related to education and technology, ETCC members were surveyed to recommend and identify web pages at their respective agencies that would be of value to the ETCC web site. This portion of the web site remains under construction.

Continuation of support for the ETCC web site will be transferred to another ETCC member agency in 2003.

Recommendation 10. *Encourage local leadership, resource development, and community involvement for the use of technology in education.*

The development and sustainability of technology projects and the use of technology in education programs require a level of support in the local community that cannot be

provided at the state level. State programs should encourage and continue to seek opportunities to enhance technology leadership at the local level.

The Texas Association of School Administrators (TASA) with Texas Tech University, the Texas Business and Education Coalition (TBEC), and Texas Computer Education Association will train approximately 50% of all Texas superintendents and principals in the use of technology during the three-year period beginning in the 2000-2001 school year. The project is funded through the Bill and Melinda Gates Foundation. Technology Leadership academies, provided through TASA and the Gates Foundation, are supported by TIF, TIE and TARGET grants.

Administrative use of technology in schools and districts can save tremendous resources. We see new and revised ways to use business applications online, such as the enhanced accessibility of the Academic Excellence Indicator System (AEIS), the Public Education Information Management System (PEIMS), and the AskTED function on the TEA web site, as well as Educational Materials Online (E-MAT), which has provided online textbook ordering since September 1998. Up-to-date systems for technical support are in place, ensuring best use of the Texas Education Telecommunications Network (TETN) and T-STAR with a minimum of down-time.

TEA's Data Central provides, in a clearinghouse format, searchable key information that education stakeholders need about student performance and school finances, among other data.

The P16 Public Education Integrated Data Resource (P16 PEIDR) is a collaborative effort between TEA, THECB and SBEC to improve public access to prekindergarten through Grade 16 enterprise information for decision-making by public education stakeholders. This project builds upon TEA's current Data Central and Internet Portal to provide integrated prekindergarten through Grade 16 resources by expanding the current data warehouse and data marts technology infrastructure.

When visitors browse the current Data Central, also known as the Resource Connection, they will find a rich, easy-to-use resource of data and information drawn from major agency databases such as PEIMS and Texas Assessment of Academic Skills (TAAS). Unlike PEIMS Core Reports and most agency presentations of data, Data Central provides reports that:

- Show data over time—six years of student data and seven years of financial data
- Present comparative data—simultaneous displays of data for more than one school district
- Allow visitors to create and save self-defined peer groups for comparison and analysis
- Provide information in both graphical displays and standard report formats
- Allow point and click transfer of data to the requestor's PC for their use in further analysis
- Display campus, district, regional and state information
- Let visitors find a district through a map as well as a district name

The P16 PEIDR is expanding the current resources to include Texas Higher Education public enrollment, attendance, graduation, financial, and faculty data, and SBEC education staff credential data.

Data Central/Resource Connection is the source for the new Longitudinal Student Performance Record (LSPR), which provides requesting districts detailed demographic, membership, and testing data from both PEIMS and TAAS, including item scores, for every student in their district. The LSPR data, when coupled with district-held information about teacher assignments and class schedules, enables sophisticated analysis of student performance at the classroom level. More than 600 districts a year download this data via secure Internet access on the state Texas Online portal.

School personnel must plan collaboratively and continuously if the use of technology is to lead to improved student learning, increased productivity and more efficient operations. Effective integration requires district leaders who articulate and advocate a vision of what technology can do for teachers and learners and of school operations that facilitate the achievement of that vision.

Technical support is also a key component for the successful use of technology. In addition to providing resources to Texas schools, we must ensure that assistance is available for learning to use these tools and for troubleshooting problems in the early stages. TETN and T-STAR provide videoconferencing and satellite infrastructure and resources for districts and communities to use. The TETN and T-STAR systems continue to save money on district travel and to deliver "just in time" professional development. In addition, the human infrastructure that supports the technology is growing.

Year one of TEA's TARGET Grants provides approximately $50 million through formula and competitive grants that encourage local leadership, resource development and community involvement for the use of technology in education. TARGET Grants are the state's implementation of the competitive grant program that is part of the Title II, Part D – Enhancing Education Through Technology- section of the NCLB federal legislation. Beginning in January, 2003, TARGET grants, which are correlated to the Texas STaR Chart, will focus on serving high need students by accelerating implementation of the recommendations in the Long-Range Plan for Technology 1996-2010.

Beginning in May 2002, all educator preparation programs were required to submit recommendations for certification using the SBEC online system. This paperless system allows candidates for certification to enter their demographic information online to SBEC and then couples this information with the entities' online recommendation submission.

In addition, as of August 2002 individuals requesting to take the certification exams may register via an online registration system. Individuals who register for the exams using the online system will also be able to receive their exam results and other correspondence/information from the testing contractor via e-mail. Programs will also have electronic access to their candidates' registration information on a weekly basis.

All exam takers will continue to receive an official paper copy of their scores. Scores are also available online on a secure site on the same day the paper reports are mailed.

Another effort undertaken by SBEC is the placing of the Accountability System for Educator Preparation (ASEP) program data online. This online system allows the educator preparation program to receive—electronically—a list of individuals who have registered for certification exams from that entity and then update that list as needed. The entities also receive the results of the certification exams for their candidates. This information includes scores by test domain and competency for programs to use in evaluating their effectiveness. The entities can also determine, unofficially, their ASEP accreditation rating throughout the school year using the online system.

A fourth effort taken by SBEC to encourage the use of technology has been to place the request process for emergency teaching permits by school districts on the SBEC secure web site. This new process became effective September 1, 2002, and allows the school district to apply online for the emergency permit directly to SBEC. The entire process is strictly online, with paper copy being submitted only if requested by SBEC.

And finally, educators holding a Standard certificate will be able to apply for renewal of their certificates online as well. The educator will go to the SBEC secure site and enter the required information, to include their continuing education hours needed for renewal and affirm that the information is correct. The applicant will eventually be able to pay for the renewal using a credit card while online.

THECB is promoting technology leadership at the local level through three processes. The first process is the THECB's on-going development of its recently added web site, www.texasdistanceeducation.com, which provides access to all college and university courses that are available in the state via distance learning. The web site also provides and promotes the opportunity for college and university faculty to deliver coursework (in part or completely) by technology. The technology delivery of the coursework currently includes, but is not limited to, CD-ROM, compressed video, live-stream Internet, computer-aided instruction, open broadcast, analog satellite transmission and digital satellite transmission. The college and university coursework that is available via distance education includes significant numbers of courses and programs in both teacher education and librarian education.

The second process THECB has undertaken to promote technology leadership is within its annual Educator Preparation Initiatives. One of the 2001-2002 initiatives has been to assist with developing and obtaining approval from SBEC for additional new master technology teacher programs to improve technology in the schools. THECB staff members have provided guidelines to institutions of higher education on the master teacher program for technology, provided institutions with samples of exemplary programs, and assisted institution personnel with editing and improving proposals prior to submission. It is anticipated that THECB will continue to support this initiative as an on-going commitment for 2002-2003 and beyond.

The third process THECB uses to promote technology leadership is the annual awarding of Eisenhower Professional Development Grants. The Eisenhower project regulations require institutions of higher education to provide appropriate technology, equipment and training to each of the K-12 teachers participating in the projects. For 2002-2003, approximately 2,000 teachers in more than 390 local school districts will be receiving high-quality instructional technology, equipment and training. These teachers, in turn, are encouraged and expected to share their instructional technology skills, equipment and training with their fellow teachers. In this way, the Eisenhower-trained teachers become campus technology leaders for their peers and advance the level of instructional technology for all of the students in the schools.

Through TIF's Community Networking grants, TIF supports the development and connectivity of technology projects. Economic development for Texas is the foundation on which community networks are built. These grants provide unique opportunities for leadership and local community involvement. Programs encourage volunteerism, participation of diverse populations and entities and information and resource sharing among the community.

TIF awarded 36 community network grants, totaling $18 million in FY 00. The second community network grant, awarded in FY 01, provided approximately $28.9 million to 61 communities. These two grant initiatives provided $500,000 to communities and their collaborative partners. The third community network grant awarded 91 communities approximately $23 million in FY 02. For this initiative TIF reduced the individual awards to $250,000 as a sustainability effort so that communities would not overbuild technology infrastructures to such a degree that they became vulnerable at the end of the grant period. Initial results show community networks to have an enormous impact on training, e-commerce and an overall increase in technology use. A formal evaluation study of community networks is currently underway with results expected in the spring of 2003. Currently 188 counties in Texas have been awarded community network grants.

The grant programs and continuing education and consulting services offered directly by the TSLAC and its regional library systems are designed to enhance knowledge and capability at the local level. These programs offer a wide range of services designed to help local libraries and their boards better serve their communities. Technology is an essential element of library services and is a prominent component of the services offered to libraries and library staff. These services include a wide range of workshops, leadership institutes and consulting, as well as grant funded services (described under Recommendation 7) designed to support technology in libraries. During this period, the TSLAC has developed (in addition to the on-going activities mentioned above and in Recommendation 7) extensive materials and related services to inform and help libraries use the TexShare online databases effectively within their communities. This includes collaborating with TEA and TIF on workshops offered jointly to school and public library staff to encourage local cooperation in the full continuum of learning from preK to adult.

The ongoing services discussed above will be enhanced through the use of distance learning technology, to further training and consulting for libraries and their communities.

On September 1, 2001, DIR assumed the operations of the state's Telecommunications Services Division. This resource provides opportunities for local communities to reduce their costs for telecommunications, thus enabling a more rapid adoption of technology.

DIR is actively marketing local communities and school districts to advise them of the potential for savings through the use of the state's voice and data telecommunications networks.

DIR will continue to provide telecommunications resources to local governmental entities and school districts. DIR will seek guidance from the Legislature regarding the legality of offering services to private entities in rural and underserved areas.

***Recommendation 11**: Develop strategies for implementing and sustaining the goals of the ETCC.*

As a next step, the ETCC should begin to identify and develop strategies for implementing the goals established by the group. Strategies should not only target state level implementation, but also implementation of these goals at the local level.

Over the past biennium, Texas' 20 ESCs have provided secure and affordable local regional networks for educators to use for everything from lesson preparation and e-mail to Internet access and job searches, and have taught them how best to utilize these networks. ESCs invest in training for their own staff members and for key district personnel to create a growing base of educators who can support technology at the campus level when needed. ESCs also maintain increasingly well-stocked technology centers for preview and checkout of software and other media, as well as assistive equipment for students with disabilities. In addition, they develop, update and expand tools for data disaggregation and interpretation to help educators monitor and adjust instruction to meet student performance accountability standards.

Distance learning capabilities provided by ESCs are enormously helpful, especially to small, poor, or isolated districts, providing educators with access to high-quality, on-demand professional development and continuing education opportunities. Distance Learning also allows educators to participate in meetings, study groups and forums without leaving their campuses. School board members benefit from training delivered electronically, as do parents and community members who may meet with educators via technology. Students now have access to specialized offerings previously unavailable in their schools, such as dual and concurrent credit, Advanced Placement and International Baccalaureate high school courses, enrichment and career programs, electronic field trips and bilingual instruction. For example, districts lacking instructors in hard-to-find science, math, foreign language or technology courses may pool their resources and hire teachers jointly for videoconference classes received at multiple sites.

In its update to the *Long-Range Plan for Technology, 1996-2010* and its ongoing leadership and initiatives, TEA recommends that current educators should strive to meet the SBEC standards in Technology Applications for all beginning educators.

Recommendation 12: *Adopt the Texas STaR Chart as the standard for K-12, and the CEO Forum's STaR Chart as the standard for SCDE.*

The CEO Forum on Education and Technology, founded in 1996, is a unique partnership of business and education leaders who work together to monitor the nation's progress towards ensuring that today's students will be equipped with the skills they need to be contributing citizens and productive workers in the 21st century.

In 1997, the CEO Forum released its first report, the *School Technology and Readiness (STaR) Report: From Pillars to Progress,* which included the first STaR Chart and STaR Assessment. This report included indicators in hardware, connectivity, content, and professional development. The most significant progress has been in the areas of hardware and connectivity. In 1999, the second report, *Professional Development: A Link to Better Learning,* brought the spotlight to the effective use of technologies through the training of teachers.

The Forum then turned its focus to the critical pillar of teacher preparation. The resulting CEO Forum's Interactive Teacher Preparation STaR Chart is a self-assessment tool designed to enable SCDEs to assess their level of readiness in preparing teachers to use technology. Teacher preparation institutions across the country have adopted the chart.

In June 2000, the CEO Forum released the third report, *The Power of Digital Learning: Integrating Digital Content,* to provide practical guidelines and tools educators can use in their schools to realize the full potential of the technology infrastructure now in place.

The STaR Chart identifies and defines four evaluative profiles ranging from the Early Tech program with little or no technology use, to the Target Tech program that provides a model for the integration and innovative use of educational technology. The STaR Chart is not intended to be a measure of any particular program's technology readiness, but rather to serve as a benchmark against which every institution can assess and track its own progress.

The TEA's Educational Technology Advisory Committee (ETAC) reviewed a variety of tools currently in use across the nation. The committee adapted the work of the CEO Forum to meet the needs of Texas schools and to provide a tool to help clarify goals and measure progress toward implementing the *Long Range Plan for Technology, 1996-2010.* As a result of this effort, ETAC developed the district-level Texas STaR Chart which was initially piloted during the 2000-2001 school year. ETAC has since created a campus-level STaR Chart that is now in use in Texas.

ETAC developed the Texas STaR Chart as an online resource tool for self-assessment of campus and district efforts to effectively integrate technology across the curriculum. The

Texas STaR Chart is designed for use in technology planning, budgeting for resources, and evaluation of progress in local technology projects.

Future applications for TEA-funded technology grants will request a completed campus or district Texas STaR Chart profile to be filed with the application as an indicator of current status and progress and as a formative and/or summative evaluation tool. The online assessment may be used as a basis for dialogue with staff, administrators, technology directors, school board members and community leaders to plan for future growth. In the original *State of Texas Master Plan for Educational Technology 2000-2003* the ETCC recommended that this rubric serve as the standard for assessing technology preparedness in K-12 schools.

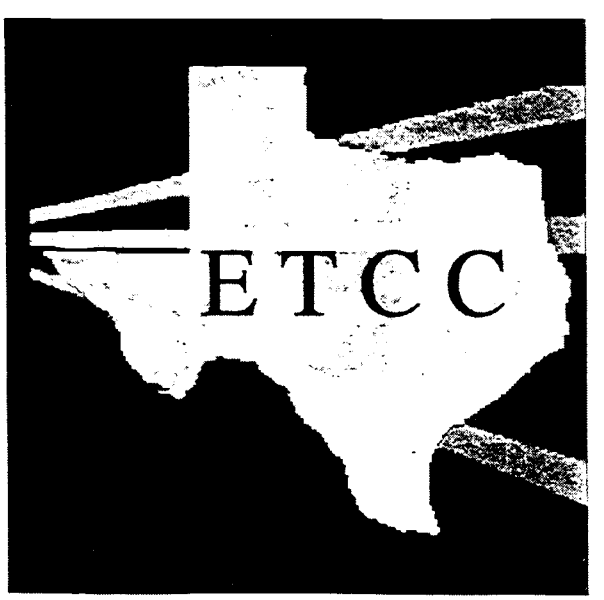
The Texas STaR Chart and the accompanying Campus Analysis of School Technology and Readiness form produce a profile of schools' status toward reaching the goals of the State Board of Education's *Long Range Plan for Technology, 1996-2010*. Data can be compiled to provide an overall picture of the state of technology in Texas. Additional statewide aggregated data will be available in the spring of 2003.

THECB, together with SBEC and TEA, continues to support standards-based teacher preparation. The Texas STaR Chart and the companion CEO Forum STaR Chart are nationally recognized standards for technology training for teachers. These nationally recognized standards have been embedded in SBEC's standards for all teacher certificates, and also in the standards for technology teacher certificates. Further, TEA has promoted these nationally recognized standards for classroom instruction, and has embedded them in the *Long Range Plan for Technology, 1996-2010*. The THECB expects to be able to reinforce the work of SBEC and TEA by encouraging teacher education programs to use the Texas STaR Chart and the companion CEO Forum STaR Chart for assessing the technology preparedness of their preservice teachers.

In fall 2002, staff at THECB sent a letter to all the deans and department chairs of the SCDEs to encourage them to consider the work already done by SBEC and TEA on technology standards for teacher certification and classroom instruction, and to encourage them to consider adopting the Texas STaR Chart and the companion CEO Forum STaR Chart as the standard for assessing teacher technology preparation in Texas.

The ETCC recommends the Texas STaR Chart and the CEO Forum's Interactive Teacher Preparation STaR Chart serve as the standard for assessing technology preparedness in Texas.

Investing in Texas



Investing in Texas

The investment of federal, state and local dollars for educational technology and telecommunications infrastructure over the past decade is substantial. Texas has committed resources to implement a telecommunications infrastructure and provide telecommunications access that will improve education through TEA, federal technology grants, rate reduction plans, and TIF's $1.5 billion investment over 10 years. The agencies involved with planning and implementing educational technology in Texas are discussed below.

TELECOMMUNICATIONS INFRASTRUCTURE FUND BOARD

The Telecommunications Infrastructure Fund (TIF) Board was created in 1995 during the Regular Session of the 74th Legislature by enactment of House Bill 2128. TIF is charged with deploying a statewide telecommunications infrastructure. To meet this charge, TIF will disburse approximately 1.5 billion in revenues through fiscal year 2004.

TIF's mission is to lead Texas in the development of an advanced and sustainable telecommunications infrastructure that stimulates equitable access and universal connectivity through grants awarded to public schools, institutions of higher education, libraries and authorized healthcare facilities.

Since fiscal 1997, grant dollars awarded by TIF increased by an average rate of 67% per year through fiscal 2001, while the number of grantees has grown by an average of 118% per year. In fiscal 2001, TIF managed about $366 million in grant dollars and approximately 5,000 grantees through its various programs.

The "So What?" Question: $1,108,732,975 of TIF dollars has directly impacted the lives of Texas through increased:

- Access
- Parity
- Demand Aggregation
- Addressing market failure
- Efficiencies and improvements
- Knowledge transfers through collaboration
- Leveraging dollars
- Distance learning

- Equipment including but not limited to computers, printers, computer labs, distance learning equipment and connectivity.

- $522 million has been invested in public schools in 252 counties. Local matching dollars exceed $55 million.

- $84.9 million has been invested in grants for higher education to 122 different community colleges, colleges and universities in 61 counties. Local matching dollars exceed $8 million. $75.3 million has been invested in grants to libraries-approximately 447 public libraries in 208 counties. $109 million has been invested in grants to qualified healthcare entities to connect individual clinics, collaborative healthcare networks and health science centers in 194 counties. Local matching dollars exceed $10.9 million.

- $69.5 million has been invested in community network grants in 186 communities that are a part of collaborative networks that connect schools, hospitals, libraries, institutions of higher education and local community organizations in 188 counties. Local matching dollars exceed $7.2 million.

- $87.1 million has been invested in research related grants targeting technology innovation and technology integration across Texas.

Initially, TIF established Internet connectivity as the primary focus of its grant programs. According to the *TIF Master Plan,* once basic access has been achieved, funding priorities will shift to more innovative telecommunications projects. TIF's current vision, therefore, is to increase Texans' access to advanced telecommunications technologies, while funding progressive applications of technology projects. The telemedicine, distance learning, collaborative demonstration and community networking grants reflect TIF's evolving vision.

TEXAS EDUCATION AGENCY

The Texas Education Agency (TEA) provides leadership and support in the use of technology through a wide variety of technology initiatives that provide Texas public school students, parents, teachers, administrators, legislators and business leaders access to the tools, products and information they need to make decisions, to educate, to plan and to learn. These technology initiatives collectively comprise the Agency's strategy for implementing the updated Long-Range Plan for Technology (LRPT). Each of these initiatives is highlighted below.

Long-Range Plan for Technology

In accordance with legislation passed in 1985, the State Board of Education (SBOE) developed and adopted the *1988-2000 Long-Range Plan for Technology.* Although visionary for its time, it had become outdated and a new plan was developed and adopted by the SBOE for the period 1996-2010. The *Long-Range Plan for Technology, 1996-2010,* extends the board's previous long-range plan which, in 1988, was a standard for the nation. This new plan provides leadership in educational uses of technology to ESCs, school districts and campuses, institutions of higher education and communities. In doing so, it provides recommendations to these entities and forwards requests to the Texas Legislature in four key areas: (1) Teaching and Learning; (2) Educator Preparation and Development; (3) Administration and Support Services; and (4) Infrastructure for Technology.

In 2002, it became evident that a midpoint review and adjustment of the *Long-Range Plan for Technology, 1996-2010* was necessary to ensure that recommendations remain appropriate, determine if new recommendations are warranted, and create benchmarks or indicators that will let us know where we are as a state and as individual schools and districts in achieving the targets addressed in the LRPT. The resulting update to the *Long-Range Plan for Technology, 1996-2010*, will prepare Texas' students and educators for the world of learning and work in the 21st century.

Technology Allotment

In 1992, all school districts in Texas began to receive a technology allotment of $30 per student, per average daily attendance (ADA) for the purchase of technology in support of the goals of the Long-Range Plan for Technology. The original legislation provided for an increase in the technology allotment by $5 per ADA each biennium to a cap of $50 per ADA. Currently, the technology allotment remains at the initial $30 per ADA. Through the technology allotment, schools districts across the state have a baseline resource with which to develop and expand their existing technology programs and to provide technology training.

Statute specifies that the allotment can be used only to provide for the purchase by school districts of electronic textbooks or technological equipment that contributes to student learning, pay for training educational personnel directly involved in student learning in the appropriate use of electronic textbooks, and provide for access to technological equipment for instructional use.

Technology Applications TEKS

Technology Applications is a required Kindergarten-12 enrichment curriculum specified in TEC 28.002 that focuses on the teaching, learning and integration of digital technology skills across the curriculum. "Digital technology" refers to the use of computers and related technologies such as digital cameras, scanners, probes and handheld digital devices. The Technology Applications curriculum was built on the premise that students acquire Technology Applications knowledge and skills in a continuum beginning at the elementary level and continuing through the secondary level.

Technology Applications standards were developed and adopted for Grades Kindergarten–12. Technology Applications TEKS are divided into grade clusters for Grades K–2, 3–5, and 6–8, and courses for Grades 9–12. The courses offer opportunities for in-depth study of technology at the high school level. The courses are designed to prepare students with a background for whatever they may choose to do today as well as in their future using multiple technology applications for a wide variety of learning purposes. They include: Computer Science I, Computer Science II, Desktop Publishing, Digital Graphics/Animation, Multimedia, Video Technology, Web Mastering, and Independent Study in Technology Applications. Students should demonstrate proficiency with the TEKS before they exit the benchmark Grades of 2, 5, and 12.

In addition to the TEKS, PreKindergarten Guidelines for Technology Applications were made available to schools in early 2000. They communicate what three and four-year-old students should know and be able to do using technology.

Technology Applications Curriculum Requirements

Districts must ensure that sufficient time is provided for teachers to teach and for students to learn the essential knowledge and skills in Technology Applications for Grades K-12. There are multiple avenues of offering the Technology Applications high school courses including distance learning. Many schools have taken advantage of dual-credit/concurrent enrollment in colleges and universities to provide instruction in the courses. The results of these efforts have been to make it possible to teach the Technology Applications courses when it may not have been possible in other ways, especially for small, rural schools.

All high school graduates are required to have one Technology Applications graduation credit under all graduation plans. Students who take any of the eight courses in Technology Applications TEKS, Chapter 126 receive this credit. In addition, there are courses in Career and Technology Education that students can take to earn this credit.

From 1996 through 2002, TEA funded the Technology Applications Center for Educator Development, a component of the Texas Center for Educational Technology at the University of North Texas, to provide awareness information and resources for implementing the Technology Applications TEKS. The CED's resources can be accessed from the TEA Educational Technology web site at www.tea.state.tx.us/technology/ta. ESCs provide professional development using these resources.

Texas Library Connection (TLC)

The Texas Library Connection (TLC) provides online databases and a unique Web portal to Texas students, educator, and parents. The TLC Union Catalog links students to more than 5,600 school libraries in the state of Texas. Students may borrow books from more than 50 million items held by those school libraries. In addition, full text databases provide electronic magazines, reference materials, newspapers, maps and encyclopedias, accessible twenty-four hours a day, seven days a week. They can be accessed from the classroom, the school library, and most importantly, from students' and educators' homes. Students learn how to access and use these online databases as needed for classroom research projects. To be eligible to access these resources, campuses must meet certain requirements such as having computer access for students in the school library and having a school librarian who is committed to teaching students and staff how to access, evaluate and use the resources. Currently more than 5,600 campuses representing 3.7 million students are participating in TLC.

For more information about TLC, visit http://tlcic.esc20.net/

Library Services

School librarians have moved from the role of "keeper of the books" into a leadership role as they collaborate with teachers and students to demonstrate how research and technology skills are an integral part of an exemplary library program. For students to be information literate they must be engaged in extended, inquiry-based research. School libraries assist students and teachers in developing information literacy. School librarians have been valuable resources in making connections with this information literacy and the required Technology Applications curriculum. Librarians' roles have expanded to include the use of all the resources found in the school library of today: books, reference resources, access to databases, Internet connectivity for computers, multimedia, and information in all formats, electronic as well as print.

The library program supports information literacy/Technology Applications TEKS through the following activities:

- Students and staff must understand how to collect and retrieve information.
- All students must develop the ability to manage or utilize an organizational scheme such as the classification arrangement of library database resources.
- This skill demonstrates that students can interpret, summarize, compare and contrast information.
- Students must make judgments about the quality, relevance, usefulness or efficiency of the information.
- The creation of new knowledge is demonstrated by adapting, applying, designing, inventing or authoring information.

The TEA Educational Technology Division's Library Services mission is:

(1) To build the capacity of Texas school library programs
(2) To provide all students equitable access to resources and assistance in learning to use them
(3) To enable students to achieve their potential and fully participate now and in the future in the social, economic and educational opportunities of our state, nation and world

TEA administers legislative initiatives directed toward school libraries such as TLC and the Library Supplement. It facilitates the integration of all TEKS and specifically the Technology Applications TEKS into collaborative teaching and learning sessions. TEA promotes collaboration with TSLAC. One of their collaborative efforts is to develop state school library standards.

School Library Standards

School library standards were adopted in 1997. These standards are currently being revised by a statewide committee composed of building-level librarians, school board members, teachers, university and ESC librarians, lay people and staff of TSLAC and TEA. The estimated date of presentation to both the SBOE and the Commissioners of TSLAC is early 2003.

Library Supplement Funds for Library Purchases

Senate Bill 1, Rider 67, passed by the 77th Texas Legislature, provided up to $1,200,000 for each year of the biennium for *"books and other school library materials that are catalogued and circulated from a central source in each school. It is the intent of this legislation that public school libraries be in compliance with standards established in 1997 by the State Library and Archives Commission."* During the 2001-02 biennium, funding was distributed on a first application, first funded basis. The district application included the October PEIMS enrollment figure. Districts had to have spent at least $1.00 per pupil prior to submitting the application. The amount of funding was thirty cents per pupil, per district. The 30% supplemental funds for library purchases administered through TEA's Library Services rules state that funding from this source must be spent on library resources that are:

- Tied to high academic standards
- Used to improve student achievement
- Part of an overall education reform program,
- Cataloged and circulated from a central source

This includes books, audiovisual resources, computer software cataloged and circulated from the library, informational database licenses accessible over a library network, a district or regional network, and/or the Internet.

Public Access Initiative

The Public Access Initiative is a broad statement of direction from the commissioner of education that expresses the following vision: *Through technology, teachers and superintendents, parents and legislators, students and business leaders have immediate access to tools and products, data and information needed to make decisions, to educate, to plan and to learn.*

The initiative envisions a world-class information system for Texas public education, a system that encompasses content as well as the technologies used to access and deliver that content. The vision does not distinguish between administrative and instructional technology, nor does it distinguish between delivery mediums. The vision respects the roles of the many partners in the process, from TIF to the federal Department of Education and from the ESCs to the districts themselves.

TEA, THECB and SBEC are collaborating on expanding the current Public Access Initiative to provide access to Texas public education information from prekindergarten through Grade 16 and beyond. The PreKindergarten - 16 Public Education Integrated Data Resource (PK-16 PEIDR) web site will provide online access to the most extensive detailed public education resource nationally. This resource matches students from PK-12 into Texas public higher education for analysis of education trends from PK-12 and into Texas public higher education. This initiative also matches students from Texas higher education institutions with the credentials received and Texas public education employment for analysis of educator retention and trends.

The existing K-12 Resource Connection (http://lucas.tea.state.tx.us/PAI/TTB/1,3498,20,00.html) provides public access to an integrated Texas K-12 public education data resource for comparison and trend analysis of education performance over time. This K-12 resource is the source for the Longitudinal Student Performance Record (LSPR) which integrates TAAS test results with PEIMS data for local school district student level data analysis via the Texas government portal, Texas Online. The Resource Connection web site includes links to Teacher's Tool Bag, School District Locator and ESCs.

The Teacher's Tool Bag (http://lucas.tea.state.tx.us/PAI/TTB/1,3498,20,00.html) is a rich resource for educators, providing links to online resources such as lesson plans, awards and special programs, reference sites, and professional development. Curriculum resources are easy to find, as they are organized by content area and by grade. Educational resources include the Book Bag, classroom management strategies and lesson plan collections.

The School District Locator (http://penick.tea.state.tx.us/SchoolDistrictLocator/Home/TEA.asp) provides geographic maps and access to contact information for school districts and school district web site links, if available.

The PK-16 web site will provide access to integrated Texas public education data from TEA, THECB and SBEC. This resource will allow sophisticated data analysis of education performance trends from PK-12 public education through Texas public higher education and educator information.

Texas School Telecommunications Access Resource (T-STAR)

T-STAR is a statewide satellite network providing schools with access to one-way video/two-way audio services for receiving student instruction and staff development training. T-STAR links TEA, ESCs and school districts for the purpose of providing and improving distance learning, communications, videoconferencing, in-service training, technical assistance and administrative support. T-STAR upgraded to digital to conform to industry standards and to enable Texas schools to take advantage of digital educational resources. A digital uplink has been installed at the William B. Travis Building in Austin, and digital capabilities have been added to the downlinks at all 20 ESCs and the T-STAR Network studio facilities. Approximately 400 T-STAR district sites have upgraded their T-STAR system and many of these sites have distributed T-STAR via wide area networks (WANS) to reach campuses.

T-STAR's digital broadcast transmission has given the ESCs and districts sites the ability to deliver T-STAR programming to the computer desktop through Internet Protocol Television (IP/TV). T-STAR to the Desktop has been implemented at TEA and provides the agency with the live T-STAR programs as well as video on demand programming. The T-STAR Information and Training Center provides state-wide support to implement T-STAR to the Desktop through local area networks (LANS).

The T-STAR Network provides teachers with options and resources to obtain continuing professional education. Administrators and teachers receive continuing professional education (CPE) credits for Standard Certificate renewal through T-STAR CPE Online. Educations certified after 1999 must meet new certification requirements which include continuing professional education hours. Designated CPE video programming produced by T-STAR offers educators accessible professional development at no cost.

Texas Education Telecommunications Network (TETN)

The TETN is a statewide telecommunications network between the 20 ESCs and TEA that provides compressed two-way videoconferencing and data transmission using dedicated T-1 lines. TETN was established to provide a 24-hour telecommunications network between ESCs and TEA with the capability to connect to schools and other public institutions. The TETN network was upgraded to an Asynchronous Transfer Mode (ATM) environment to increase the capabilities of TETN and reduce telecommunications service charges. Additional enhancements to TETN include connection to the regional networks of all 20 ESCs, additional capability to dynamically reallocate bandwidth based on demand and data encryption to enhance security. TETN is used for sharing TEA information, staff development, collaboration with ESCs and distance learning.

Technology Demonstration Programs

TEA has established a variety of technology demonstration programs to investigate the uses, effectiveness and feasibility of technologies for education; and provide models for effective education using technology. These programs are designed to encourage participation by and collaboration among school campuses, school districts, ESCs, the private sector, state and federal agencies, nonprofit organizations and institutions of higher education. A number of technology demonstration programs have been conducted to support the LRPT.

In 2001, TEA established two projects to support the study of virtual schools and online learning. The Virtual School Pilot (VSP) was established to investigate state policies, requirements and restrictions impacting districts that offered electronic courses to local students who are not physically present for all or part of these courses. A study team lead by the Dana Center at the University of Texas, Austin initiated a 16-month study of electronic courses and virtual learning programs in school districts and charter schools in Texas. In addition, the Investigating Quality of Online Courses Pilot (IQ Pilot) was launched to establish and pilot quality of service guidelines for online courses to provide assurance to the state, school districts and campuses that courses meeting these guidelines will be of the highest quality in all respects and that they address student achievement and academic excellence. Details of these pilots are explained in a report provided to the Legislature December 1, 2002.

Educational Technology Pilots

In 1999, TEA Ed Tech Pilots were conducted at 13 sites that represented a cross section of Texas elementary, middle and high schools across the state. The primary objective of these pilots was to examine the effectiveness of using various technologies to deliver substantial curriculum content to students and to improve student learning. The pilots examined the cost and efficacy of using technology to deliver curriculum that has traditionally been delivered through print media. The pilots drew on various technologies and involved hardware and curriculum products from numerous vendors. An interim report was provided in December of 2000, and the final report delivered to the Legislature in December of 2001.

Beginning in 2001, TEA conducted additional educational technology pilots in the areas of Biology, Math, Reading and Social Studies. The primary goals of these education technology pilot projects center on both content and technology, and are meant to be achieved across the diversity of schools represented in the various pilot projects. These goals include:

- Increasing the use and usability of existing print and online resources
- Increasing instructional or student assessment effectiveness
- Increasing student achievement
- Increasing the efficiency of curriculum resource or assessment delivery

These pilots extend through the 2002-2003 school year and results will be provided in a report to the Legislature in December 2003.

No Child Left Behind Act of 2001: Reauthorization of the Elementary and Secondary Education Act

President Bush and Congress have declared their commitment to transforming the federal role in education so that *No Child is Left Behind*. At the heart of this effort is a commitment to focus on students, equip teachers, empower parents, and inform decision makers to ensure every child receives a quality education. The No Child Left Behind Act of 2001 advances this commitment by providing a number of exciting reforms, tools and programs, many of which are reliant on the appropriate and effective use of technology.

Title II, Part D – Enhancing Education Through Technology

This section of the NCLB legislation combines several previous technology programs into a single State Ed Tech program. The goals of the program include improving student academic achievement through the use of technology in elementary and secondary schools; assisting every student in crossing the digital divide by ensuring that every student is technologically literate by the time the student finishes the eighth grade; and encouraging the effective integration of technology resources and systems with teacher training and curriculum development. Funds are allocated to states who distribute 50% to schools through a formula program and 50% through a competitive

grant program. At least 25% of the funds must be used for high-quality professional development to prepare teachers to integrate technology into the curriculum. TARGET Grants are the state's implementation of the competitive grant program. Beginning in January, 2003, TARGET grants—which are correlated to the Texas STaR Chart--will focus on serving high-need students by accelerating implementation of the recommendations in the LRPT.

Universal Service Fund for Schools and Libraries (E-Rate)

The federal Universal Service Fund for Schools and Libraries, more commonly referred to as E-Rate, provides discounts to schools and libraries on telecommunications services. Discounts range from 20 to 90% based on the number of students eligible for the federal school lunch program. Texas schools are realizing significant benefits through E-Rate discounts.

A school must have an approved technology plan in order to be eligible to participate in the E-Rate program. TEA is the official approving agency for public schools in Texas. In Year 1, 812 school district plans were approved for one, two, or three years during a peer review process. If plans were disapproved, TEA and ESC staff worked with districts to correct deficiencies until the plans met the required criteria and could be certified. In Year 2, 281 school district plans were approved for one, two, or three years, and in Year 3, 389 plans were approved. In 2001, 469 plans were approved and in 2002, 745 technology plans were approved.

The Educational Technology Advisory Committee (ETAC)

The Educational Technology Advisory Committee (ETAC) was created to work in an advisory capacity to increase the equity, efficiency and effectiveness of student learning, instructional management, staff development and administration. The latest efforts of this committee are in the development, implementation and evaluation of technology guidelines to provide districts with the tools for self-assessment that will aid in the effective integration of technology across the curriculum.

ETAC adapted the nationally respected CEO Forum's STaR Chart to meet the needs of Texas school districts and to provide a tool to help them clarify goals and measure progress. The Texas STaR Chart was field tested during the spring of 2001. Benchmark data was collected during the 2001-2002 school year. The new campus-level Texas STaR Chart was introduced during the fall of 2002. Campus Benchmark data will available in the spring of 2003. TEA will use the Texas STaR Chart to assist districts in determining their needs and begin the process of moving towards Target Tech teaching and learning. The Texas STaR Chart is available on the TEA web site.

Education Service Center Technology Preview Centers and Training Programs

Technology Preview Centers and Training Programs have been established at all 20 ESCs in Texas to provide school districts with educational technology services that enhance efficiency, effectiveness and the performance of students, teachers,

administrators and school personnel. The ESCs provide planning, consultation, professional development and technical assistance in response to district needs and in support of the state's *Long-Range Plan for Technology, 1996-2010*. TEA's Educational Technology Division provides financial support to the ESCs to assist them in these endeavors. Program outcomes of the Technology Preview Centers and Training Programs include:

- Development of collaboratives and partnerships
- Regional network development and operation
- Education Resources Preview Center
- Training and professional development services
- TLC support
- Planning and grant development
- Distance learning opportunities.

TEXAS STATE BOARD FOR EDUCATOR CERTIFICATION

The Texas State Board for Educator Certification (SBEC) was established by the 74th Texas Legislature in 1995 to ensure the highest level of educator preparation and practice for achieving student excellence. To accomplish this, the Board is designing a system for educator preparation and certification that assures the public that only fully qualified and certified educators are employed in public school positions for which certification is a requirement.

Since its inception in 1995, SBEC has redesigned the state's educator certificates. Educator certificates are now based on a set of standards created by Texas educators that incorporate the applicable TEKS, the state-mandated curriculum for public school students. These educator certificate standards reflect the knowledge and skills that the educator must possess to become certified to teach in the Texas public schools. New certification exams called the Texas Examination of Educator Standards (TExES) have been developed for each certificate's standards to measure candidates' mastery of those standards. Texas educator preparation programs are now in the process of aligning their training and courses with these standards and the TEKS. The state's accountability system is based on how well each entity's candidates perform on the TExES.

TEXAS STATE LIBRARY AND ARCHIVES COMMISSION

The Texas State Library and Archives Commission (TSLAC) has many roles including state archives, state and local records management, a program to serve the visually and physically impaired with library materials and diverse programs to serve the library community. TSLAC supports library services in Texas through:

- The TexShare program which encourages resource sharing among public, academic and libraries of clinical medicine with a rich selection of online databases and related programs
- The TexNet Interlibrary loan network
- The Texas Library System which offer services on a regional level to improve public libraries
- The Loan Star Libraries grant program (direct state aid to public libraries)
- Texas Records and Information Locator Service (TRAIL), preserving and providing access to electronic state government publications available on the Internet
- Adoption of school library standards;
- A broad array of continuing education and consulting services
- Other grant programs from the agency itself.

These programs together provide support for education from early childhood to adult life-long learning, support the inclusion and use of technology in libraries and help libraries provide better service to Texans.

TEXAS BUILDING AND PROCUREMENT COMMISSION

The Texas Building and Procurement Commission was formerly named the General Services Commission (GSC). The Telecommunications Services Division was transferred to the Department of Information Resources.

DEPARTMENT OF INFORMATION RESOURCES

The Department of Information Resources (DIR) is the primary information resource agency for Texas. As a technology leader in the state of Texas, DIR serves as a catalyst for improvement by influencing technology decisions and ensuring the most appropriate uses of information resources. DIR is charged with providing leadership and coordination of information resources for state agencies and universities. DIR administers the state's telecommunications system, TEX-AN, which is used by state government, as well as higher education institutions and public education. TEX-AN 2000 is a comprehensive database of telecommunications-related contracts awarded by DIR to facilitate the procurement of telecommunications services.

THE TEXAS HIGHER EDUCATION COORDINATING BOARD

The Texas Higher Education Coordinating Board (THECB) was established to provide unified planning and development for the state's higher education institutions. THECB's responsibilities for coordination encompass public universities, community colleges, technical institutes, medical schools and other allied health units. THECB provides statewide leadership to achieve excellence in college education through efficient and effective use of resources and to eliminate unnecessary duplication of program offerings, faculties, and campus facilities.

SCHOOLS, COLLEGES, DEPARTMENTS OF EDUCATION

The term Schools, Colleges, Departments of Education (SCDE) is used to represent the academic unit on a college or university campus that oversees teacher education degrees and programs. In Texas, there are 69 higher education entities that prepare educators. Approximately half are state institutions and half are private.

COLLABORATION EFFORTS

Texas has made significant strides in the funding and implementation of educational technology initiatives statewide. However, providing access to educational technology resources on a statewide basis is an immense technological and financial challenge for the citizens of Texas. The geographic size and diversity of the state, the size and diverse needs of the population to be served, and the complexity of the state's checkerboard telecommunications landscape present a formidable undertaking. The time and resources required to provide professional development opportunities, practice and professional collaboration necessary to re-tool a statewide workforce of K-16 education professionals are great.

P-16 Council

A working group of staff members from TEA, SBEC, and THECB began meeting regularly in 1998-99 to collaboratively address P-16 issues. The name of the group was changed officially in 2000 to the P-16 Council, and the membership of the group has expanded to include representatives from all public university systems, colleges of education, private universities and staff members from legislative offices. The Council continues to work jointly on issues such as aligning high school graduation requirements with college and university admissions requirements, teacher preparation and certification, the P-12 teacher shortage, and improving the success of all students, P-16.

Preparing Tomorrow's Teachers to Use Technology

Preparing Tomorrow's Teacher to Use Technology (PT3), funded by the U.S. Department of Education, is impacting a number of teacher preparation programs in the state including programs offered by: Angelo State University, Houston Independent School District, Southwest Texas State University, Texas A&M University, Texas Tech University, Texas Woman's University, University of Houston, University of Houston-Clear Lake, University of North Texas, University of Texas at Austin, University of Texas at Brownsville, University of Texas at Pan American, University of Texas at San Antonio, McMurry University, Saint Edward's University and Collin County Community College District.

An important collaborative initiative, also funded by the PT3 program, is the Technology Leadership Academy housed at the University of Texas at Austin. The Academy is building a collaborative statewide network community of teacher preparation programs focused on systemic change and the infusion of technology into the preparation of teachers. The Academy represents a unique partnership between the

University, the Texas Center for Educational Technology (TCET) at the University of North Texas, TEA, SBEC, and THECB.

The Academy is focused on building capacity within the higher education community to support teacher preparation. It is composed of representatives from teacher preparation institutions and state educational agencies. Representative activities include developing Web-based professional development resources for teacher educators and other college faculty; conducting strategic planning institutes for teams of administrators and faculty from member institutions; developing a database of experts within member institutions willing to serve as consultants or online mentors; conducting conferences or work sessions with deans and other educational leaders; conducting regional workshops and seminars; and organizing faculty exchange opportunities to effectively reach the faculty of tomorrow's teachers.

TEA and TIF Ensuring the Effective Use of the Texas Library Connection

TEA contracted with EGS Research & Consulting to conduct a survey of campuses regarding its TLC initiative. Results from the 2000 survey of campuses that had never applied to participate in TLC indicated that the primary reason these districts could not participate in TLC is that their libraries were not automated. The TIF's Library Working Group recognized that these specific libraries needed assistance to provide their students equitable access to TLC resources. On May 22, 2000, TIF announced the availability of funding through a non-competitive process to provide technology advancement to Texas public school libraries. The main focus of this grant initiative was to ensure that campus libraries have sufficient telecommunications infrastructure so students and staff have full access to all TLC resources.

Eligible applicants were Texas public school districts that have campus libraries that are not currently members of TLC for one or more of the following reasons:

- Have no Internet connectivity in the library.
- Have limited Internet connectivity due to insufficient workstations for student access or an inadequate Internet connection.
- Lack a library automation system with Machine Readable Cataloging (MARC).

All 155 schools that submitted an application were funded for a total of $7,619,470. Under the grant, eligible schools could fund up to two libraries at $35,000 per library. Schools could also qualify simultaneously for the current Public School Technology Advancement and Distance Learning (PS8) grant. The ultimate goal of these grant initiatives was to make every campus in the state eligible for TLC membership. TIF recognized that it could supply the required elements of TLC membership. Joint TETN videoconferences with TIF and TEA staffs have assisted regions with implementation steps for the Public School Library grants.

Link to Learn

The Link to Learn project, funded by TIF, is designed to ensure that all citizens of Texas communities, especially K-12 students, are provided the information and skills to effectively use information resources available through the common databases of the TLC, provided by TEA and TexShare, provided by TSLAC. To accomplish this goal, TEA is coordinating with ESC 12 and ESC 20 to develop training modules and to deliver training to public library staff, volunteers and public school librarians. This staff development project will be implemented through a train-the-trainers model and supported by online training modules and materials. Training modules will include orientation to the TEKS, information acquisition searching strategies, homework assistance strategies, the common databases of TLC and TexShare and Smart Start e-learning modules. The Smart Start modules are linked from the TLC Information Center and are designed for students, parents, teachers and librarians.

PS 10 Grants Designed to Support Technology Applications

One of the non-competitive public school grants awarded through TIF during the 2001-02 school year was specifically to support Technology Applications at Grades 6-12. Through this grant, over $57 million was awarded to more than 500 school districts.

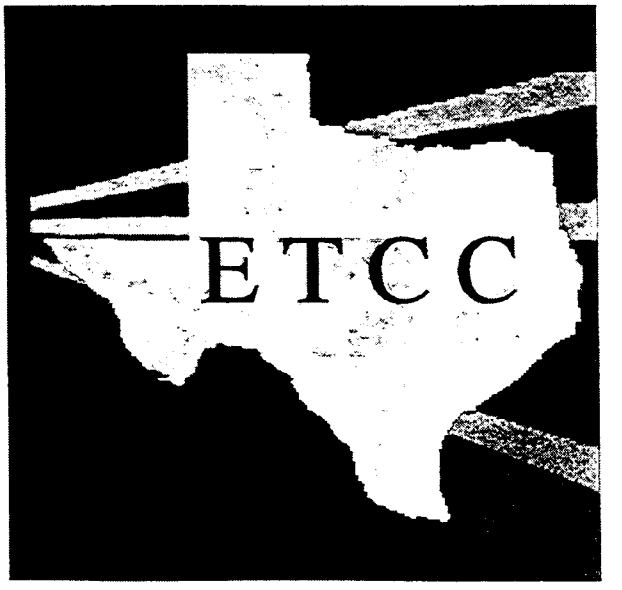
Discovery Grants

TIF's Discovery Grant program brings together a wide variety of partners in collaborative efforts that benefit Texas citizens accessing public schools, libraries, the Texas State Library and higher education and healthcare services. Summaries of these grants can be found in the Appendices of this report.

Higher Education Technology Grants to Help with Closing the Gaps P-16

More than 100 Texas universities and colleges were awarded approximately $19.5 million from TIF to expand access and improve quality of preservice and inservice teacher preparation programs through technology. Some funds will be used to develop and implement the initial or prototypical delivery of courses and other instructional materials to be delivered through distance learning. Access to Advanced Placement and dual-credit courses offered to Texas high school students will be expanded through this grant. High-demand workforce and academic development programs will be developed, improved and expanded. Funding will also be used to upgrade existing network infrastructure to increase the performance and reliability of services. The higher education institutions will implement approaches to connect the different components of IT infrastructure--people, applications, platform and databases--to enable secure, institutional collaborations. This higher education grant program was awarded with the intent to help "Close the Gap" for all students and teachers, P-16.

Glossary of Terms



Glossary of Terms

Access to Technology

Access Minimum Standards (per the updated Texas Education Agency's *Long-Range Plan for Technology, 1996-2010)*:

1:1 multimedia Internet-accessible workstation per educator
4:1 multimedia Internet-accessible workstation per student by 2005
1:1 multimedia Internet-accessible workstation per student by 2010

Administrative Processes

Includes classroom management, student record keeping, etc.

CEDs: Centers for Educator Development

Centers for Educator Development (CEDs) are statewide curriculum centers that provide resources for the implementation of the Texas Essential Knowledge and Skills (TEKS) in the foundation and enrichment curriculum areas. Centers were established to provide a coordinated system of teacher education and professional development for the state of Texas.

CEO Forum's Interactive Teacher Preparation STaR Chart

The CEO Forum on Education and Technology created the Interactive Teacher Preparation School Technology and Readiness (STaR) Chart as a self-assessment tool designed to enable SCDE to assess their level of readiness in preparing teachers to use technology. The STaR Chart identifies and defines four evaluative profiles ranging from the Early Tech program with little or no technology use to the Target Tech program that provides a model for the integration and innovative use of educational technology. The STaR Chart serves as a benchmark against which every institution can assess and track its own progress.

Distance Learning

The use of technologies such as video, audio and/or computer so students can participate in the learning process while separated by time and/or distance from the instructor. Distance learning systems are usually interactive and are becoming a valuable tool in the delivery of training and education to widely dispersed students in remote locations or in instances where the instructor cannot travel to the student site or be with the students at the time of instruction.

Educator

Includes all teachers, librarians, counselors and administrators.

E-RATE - Education Rate

The federal Universal Service Fund for Schools and Libraries, more commonly referred to as E-Rate, provides discounts to schools and libraries on telecommunications services. Discounts range from 20 to 90% based on the number of students eligible for the federal school lunch program.

ESC - Education Service Center

Twenty regional education service centers (ESCs) provide services to K-12 public schools across the state. Technology Preview Centers and Training Programs have been established at all 20 ESCs in Texas to provide school districts with educational technology services that enhance efficiency, effectiveness and the performance of students, teachers, administrators and school personnel. The ESCs provide planning, consultation, professional development, and technical assistance in response to district needs and in support of the SBOE's *Long-Range Plan for Technology*. TEA's Educational Technology Division provides financial support to the ESCs to assist them in these endeavors. Program outcomes of the Technology Preview Centers and Training Programs include: Development of collaboratives and partnerships; Regional network development and operation; Education Resources Preview Center; Training and professional development services; Texas Library Connection support; planning and grant development; and distance learning opportunities.

ETAC - Educational Technology Advisory Committee

The Educational Technology Advisory Committee (ETAC) is authorized by the Texas Education Code, 7.055.11. The function of ETAC is to work in an advisory capacity to increase the equity, efficiency, and effectiveness of student learning, instructional management, staff development, and administration. ETAC provides recommendations to TEA regarding the leadership role of the agency in providing schools with the technology tools, products and information they need to make decisions, to educate, to plan and to learn. The current efforts of the committee have focused on the development, implementation and evaluation of technology guidelines to provide K-12 campuses with tools for self-assessment to aid in the effective integration of technology across the curriculum. Most recently ETAC updated the SBOE's *Long-Range Plan for Technology, 1996-2010* and developed the campus-level Texas STaR Chart.

ExCET: Examination for the Certification of Educators in Texas

Texas law requires every person seeking educator certification to perform satisfactorily on comprehensive examinations. The purpose of these examinations is to ensure that each educator has the necessary content and professional knowledge to perform satisfactorily in Texas public schools. The ExCET program was developed for this purpose. Individuals who desire to be certified in Texas may take the ExCET if they are completing the program requirements of an approved Texas educator preparation program, are fully certified by a state other than Texas or a country other than the United States, and are seeking a Texas standard certificate and have applied for and received a review of their credentials by the State Board for Educator Certification. A new certification exam, Texas Examination of Educator Standards (TExES) has now been

developed that incorporates the applicable TEKS. Both exams will be administered over the next five years.

FAQs: Frequently Asked Questions

ILL: Interlibrary Loan

Internet Access

Direct connectivity, adequate bandwidth over the local area network and easy access for users needed to provide the ability of one or more users to utilize an information system for the purpose of initiating the transfer of information, thus enabling them to have access to the collection of interconnected virtual "sites."

Library Standards

In the spring of 1995, the 74th Texas State Legislature, through Senate Bill 1, directed TSLAC, in consultation with the SBOE, to adopt standards for school libraries. Those standards, adopted in 1997, are used in developing, implementing or expanding school library programs. Districts and campuses use these standards as guidelines to measure the effectiveness of existing library programs and in the creation of new library programs. An extensive, inclusive process for updating the standards is currently underway. The new standards will be brought to TSLAC for the rule adoption process, and the SBOE for approval.

LRPT - Long-Range Plan for Technology

In 1985, in accordance with state legislation, the State Board of Education (SBOE) developed and adopted a long-range plan for the use of technology in education. Texas was one of the first states in the nation to adopt such a visionary plan. A new plan was developed and adopted by the board for the period 1996-2010 to provide all Texas students with access to quality educational opportunities through the use of technology. As outlined in the LRPT, TEA provides leadership and support in the use of technology through a wide variety of technology initiatives. In 2002 ETAC updated the LRPT to prepare Texas' students and educators for the world of learning and work in the 21st century. The SBOE approved the updated plan in November 2002.

National Council for Accreditation of Teacher Education

NCATE is the profession's mechanism to help establish high quality teacher preparation. Through the process of professional accreditation of schools, colleges, and departments of education, NCATE works to make a difference in the quality of teaching and teacher preparation today, tomorrow, and for the new century. NCATE is a coalition of 33 specialty professional associations of teachers, teacher educators, content specialists, and local and state policy makers. All are committed to quality teaching, and together, the coalition represents more than 3 million individuals.

NCLB: No Child Left Behind Act of 2001

In the federal *No Child Left Behind Act of 2001: Reauthorization of the Elementary and Secondary Education Act* President Bush and Congress declared their commitment to transforming the Federal role in education so that "No Child is Left Behind." At the heart of this effort is a commitment to focus on students, equip teachers, empower parents, and inform decision makers to ensure every child receives a quality education. *Title II, Part D – Enhancing Education Through Technology-* This section of the NCLB legislation combines several previous technology programs into a single State Ed Tech program. The goals of the program include improving student academic achievement through the use of technology in elementary and secondary schools; assisting every student in crossing the digital divide by ensuring that every student is technologically literate by the time the student finishes the eighth grade; and encouraging the effective integration of technology resources and systems with teacher training and curriculum development. Funds are allocated to states who distribute 50% to schools through a formula program and 50% through a competitive grant program. At least 25% of the funds must be used for high-quality professional development to prepare teachers to integrate technology into the curriculum. TEA's Technology Applications Readiness Grants for Empowering Texas students and teachers (TARGET) are the state's implementation of the competitive grant program.

PAI: Public Access Initiative

The Public Access Initiative is a broad statement of direction from the commissioner of education that expresses the following vision: *Through technology, teachers and superintendents, parents and legislators, students and business leaders have immediate access to tools and products, data and information needed to make decisions, to educate, to plan and to learn.*

The initiative envisions a world-class information system for Texas public education that encompasses content as well as the technologies used to access and deliver that content. The vision does not distinguish between administrative and instructional technology, nor does it distinguish between delivery mediums. The vision respects the roles of the many partners in the process, from TIF to the federal Department of Education and from the regional ESCs to the districts themselves. TEA, THECB and SBEC are collaborating on expanding the current PAI to provide access to Texas public education information from prekindergarten through Grade 16 and beyond.

PEIMS: Public Education Information Management System

The Public Education Information Management System (PEIMS) is a collection of data from and about the public education system in Texas. The submission of data is required of all school districts. The data standards provide instructions regarding the submission of PEIMS data from school districts to TEA.

Performance Review (grant-related)

A post-implementation evaluation or audit that reviews programmatic, financial, technical and sustainability aspects of each grantee, as well as an entire grant program.

Preservice Educator

Individual participating in an educator preparation program, prior to certification.

Quality Assurance (grant-related)

The planned and systematic activities necessary to provide adequate confidence that a grantee will fulfill requirements for a quality implementation (i.e., projects are on time, within budget, technically stable, program objectives are attainable, and benefits are sustainable for the long term.)

Quality Control (grant-related)

The role of providing an independent perspective about the progress of an information systems grant project. The Quality Controller should be dedicated to a monitoring role, maintaining independence from the actual management of the project.

Quality Management

Encompasses quality assurance, quality control, and performance review.

SCDE: Schools, Colleges, or Departments of Education

This term is frequently used as a generic term to describe the education unit within an institution of higher learning. It identifies the administrative unit responsible for educator preparation.

SBOE: State Board of Education

The Commissioner of Education and the 15 elected members of the State Board of Education oversee the public education system of Texas in accordance with the Texas Education Code. The Board is responsible for the Long-Range Plan for Public Education. The Long-Range Plan envisions a public education system, which promotes student achievement through a reliance on local flexibility, planning, and accountability. The plan states that parents and communities play a crucial role in student learning, educators develop the knowledge and expertise to implement programs that ensure all students can learn, districts and campuses are held accountable for student achievement, and state policies and plans support local decision making.

TAAS: Texas Assessment of Academic Skills

The statewide student assessment program for K-12 schools in Texas, managed and overseen by TEA. TAAS measures the statewide curriculum in reading and mathematics at Grades 3-8 and the exit level; in writing in Grades 4, 8 and the exit level; and in science and social studies at Grade 8. Spanish-version TAAS tests were administered in Grades 3-6. TAAS measures the statewide curriculum in reading, mathematics and writing at the exit level. TAAS will remain the graduation requirement for students who were enrolled in Grade 9 or higher on January 1, 2001. The new Texas Assessment of Knowledge and Skills (TAKS) exam replaces the 12-year-old TAAS. The new testing program, mandated by the Texas Legislature in 1999, expands the subjects and grades that are covered by the state's testing program. The TAKS will be a more challenging exam for Texas students. Satisfactory performance on the state's student assessment (TAAS and TAKS) exit level test is a prerequisite to a high school diploma.

TAKS: Texas Assessment of Knowledge and Skills

As mandated by the 76th Texas Legislature in 1999, the state's new statewide student assessment program for K-12 schools—the Texas Assessment of Knowledge and Skills (TAKS),--will be administered beginning in the 2002-2003 school year. The TAKS measures the statewide curriculum in reading at Grades 3-9; in writing at Grades 4 and 7; in English Language Arts at Grades 10 and 11; in mathematics at Grades 3-11; in science at Grades 5, 10 and 11; and social studies at Grades 8, 10 and 11. The Spanish TAKS is administered at Grades 3-6. Satisfactory performance on the TAKS at Grade 11 is prerequisite to a high school diploma.

TARGET: Technology Applications Readiness Grants for Empowering Texas Students and Teachers

Through the federal *No Child Left Behind (NCLB) Act of 2001* (Enhancing Education Through Technology, Title II, Part D), Texas will issue state-level TARGET Grants (Technology Applications Readiness Grants for Empowering Texas students and teachers initiative). The grants, beginning in January, 2003, will focus on serving high-need students by accelerating implementation at the local level of both the Enhancing Education Through Technology portion of the No Child Left Behind Act of 2001 and the recommendations in the SBOE's *Long-Range Plan for Technology, 1996-2010*. The grants will be used to support the Technology Applications curriculum, especially to assist schools in preparing for the subscription-based instructional materials that will be provided by the state through Proclamation 2001.

TCET: Texas Center for Educational Technology

The Texas Center for Educational Technology (TCET) was created by the Texas legislature in 1990 to serve as a K-12 technology and educational research and development clearinghouse that disseminates research-based information to districts, schools, and classrooms. TCET's funding is provided through contracts with the TEA, contributions from TCET members and through federal and state grants. The Center focuses on research, development, evaluation and grant support services.

Technology

Technology refers to multimedia computers and related peripherals; instructional, productivity and classroom management software; Internet browser, and Web-based tools; assistive and adaptive devices; network infrastructure; facilities; telecommunications systems and services; and other related equipment.

ETCC's Expanded Definition:

- Multimedia computers (interactive voice, video and data) and related peripherals (scanners, printers, digital cameras, smartboards, and other input, display, and storage devices); instructional (curriculum based), productivity (word processing, database, spreadsheet, graphics, presentation and publishing), and classroom management (planning tools, gradebook) software; Internet browser, and Web-based tools (e-mail, search engines); assistive and adaptive devices (for special-needs users); network infrastructure (cabling, electronics); facilities (electricity, furniture designed for technology/computer use, security); telecommunications systems and services (Internet access, videoconferencing); and other related equipment.
- Computers and other related electronic tools for creating, accessing, manipulating, utilizing, communicating and publishing information during the learning process.
- Hardware, software, network infrastructure (cabling, electronics), facilities (electricity, furniture, security), telecommunications services (Internet access, distance learning) and other related equipment.
- Multimedia computers (interactive voice, video and data) and related peripherals (scanners, printers, digital cameras, and other input and storage devices), instructional (curriculum based) and productivity (word processing, database, spreadsheet, presentation and publishing) software, Internet browser and Web-based tools.
- Pervasive computing - computing, connectivity and communications technologies connecting small multipurpose devices, linking them by wireless technologies.
- Broadband access - refers to the transmission of large amounts of data electronically, wired or wirelessly. The more powerful the capability to transmit data, the richer the online experience.

Technology Allotment

All school districts in Texas continue to receive a technology allotment of $30 per student based upon average daily attendance (ADA) for the purchase of technology and professional development in support of the goals of the *Long-Range Plan for Technology, 1996-2010*. Technology allotment funds became available to schools beginning in September 1992.

Technology Applications

Technology Applications is a required Kindergarten-12 enrichment curriculum specified in TEC 28.002 that focuses on the teaching, learning and integration of digital technology skills across the curriculum. "Digital technology" refers to the use of computers and related technologies such as digital cameras, scanners, probes and handheld digital devices. The Technology Applications curriculum was built on the premise that students acquire Technology Applications knowledge and skills in a continuum beginning at the elementary level and continuing through the secondary level. Technology Applications standards were developed and adopted for Grades Kindergarten–12. Technology Applications TEKS are divided into grade clusters for Grades K–2, 3–5 and 6–8, and courses for Grades 9–12. In addition Prekindergarten Guidelines for Technology Applications indicate what three and four-year-old students should know and be able to do using technology.

TEKS: Texas Essential Knowledge and Skills

The SBOE-adopted curriculum for all Texas schools.

TETN: Texas Education Telecommunications Network

The Texas Education Telecommunications Network (TETN) is a statewide telecommunications network between the 20 regional ESCs and TEA that provides compressed two-way videoconferencing and data transmission using dedicated T-1 lines. TETN was established to provide a 24-hour telecommunications network between the ESCs and TEA with the capability to connect to schools and other public institutions. The TETN network was upgraded to an Asynchronous Transfer Mode (ATM) environment to increase the capabilities of the TETN and reduce telecommunications service charges. TETN is used for sharing TEA information, staff development, collaboration with ESCs and distance learning.

TEX-AN 20000: TEXas Agency Network 2000

TEX-AN 2000 is the current platform of TEX-AN, the state government telecommunications network. With the exception of state universities and legislative bodies, all state agencies are required to use the telecommunications services provided by TEX-AN. TEX-AN also serves other eligible organizations such as cities, municipalities, counties, ESCs, and independent school districts. The TEX-AN 2000 architecture provides a state government telecommunications infrastructure that is adaptable to changing requirements and can incorporate new, emerging technologies. TEX-AN 2000 provides long distance voice services and statewide data services, including Internet access. The TEX-AN 2000 platform provides for unified, scalable, redundant, flexible and extremely cost-effective networking solutions using asynchronous transfer mode (ATM) and Frame Relay technologies, along with state-of-the-art ATM core switches. TEX-AN 2000 is designed to meet the needs of its customers, now and in the future.

TEXAS STaR CHART

The Texas STaR Chart is a self-assessment tool created by ETAC for Texas schools to aid in the effective integration of technology across the curriculum. The Texas STaR Chart, which is based on the CEO Forum's STaR Chart, includes technology-related questions on teaching and learning, professional development, administration and infrastructure. A rating in each area and composite score are calculated to assess campus proficiency in the area of technology. The STaR Chart identifies and defines four evaluative profiles ranging from the Early Tech program with little or no technology use to the Target Tech program that provides a model for the integration and innovative use of educational technology. The STaR Chart serves as a benchmark against which every institution can assess and track its own progress.

TExES: Texas Examination of Educator Standards

Educator certificates are now based on a set of standards created by Texas educators that incorporate the applicable TEKS. These certificate standards reflect what educators must know and be able to do in the Texas public schools. Certification exams called the Texas Examination of Educator Standards (TExES) have been developed for each certificate's standards to measure the candidate's mastery of those standards. The TExES exams will, over the next 5 years, replace the ExCET. The first administration of the TExES will be in school year 2002-2003.

Texas law requires every person seeking educator certification to perform satisfactorily on comprehensive examinations. The purpose of these examinations is to ensure that each educator has the necessary content and professional knowledge to perform satisfactorily in Texas public schools. Individuals who desire to be certified in Texas may take the appropriate TExES if they are completing the program requirements of an approved Texas educator preparation program, are fully certified by a state other than Texas or a country other than the United States, and are seeking a Texas standard certificate and have applied for and received a review of their credentials by the SBEC.

TexShare

TexShare, a statewide consortium of academic libraries, public libraries and libraries of clinical medicine administered by TSLAC employs traditional and innovative strategies to resource sharing. TexShare is founded on the belief of Texas state officials and librarians that citizen health and well being is furthered by efficient information exchange in all communities and institutions where quality teaching, research excellence, and lifelong learning are valued. TexShare maximizes the effectiveness of library expenditures by enabling libraries to: share staff expertise; share library resources in print and electronic formats, including books, journals, technical reports and databases; pursue joint purchasing agreements for information services; and encourage cooperative development and deployment of information resources and technologies.

TIE: Technology Integration in Education

The TIE initiative was the title of the state initiative administered under Public Law 103-382, Elementary and Secondary Education Act (ESEA), Title III, Part A, Subpart 2—Technology Literacy Challenge Fund (TLCF). The primary object of this funding opportunity was to improve student achievement by fully integrating technology into teaching and learning and to ensure that all students are technologically literate by 2010. TLCF has been replaced by NCLB.

TIFTech Training

The purpose of the TIFTech training is to provide a TIF grant recipient with a basic understanding of how to maintain and use a telecommunications infrastructure. Training consists of topics such as: use of the Internet, integration of the Internet into the curriculum and classroom, strategies for maintaining and updating equipment, development of plans and guidelines for the use of the Internet and finding resources and mentors. Following training, the team becomes a resource for the school district, library, not-for-profit health care facilities and other community organizations in order to facilitate collaboration and increase community participation. TIF is now offering to fund more advanced technology training; therefore, TIFTech training, while still an option, is no longer required.

TLC: Texas Library Connection

The Texas Library Connection (TLC) provides online databases and a unique Web portal to Texas students, educators and parents. TLC Union Catalog links students to more than 5,600 school libraries in the state of Texas. Students may borrow books from more than 50 million items held by those school libraries. In addition, full text databases provide electronic magazines, reference materials, newspapers, maps and encyclopedias, accessible twenty-four hours a day, seven days a week. They can be accessed from the classroom, the school library, and most importantly, from students' and educators' homes. Currently more than 5,600 campuses representing 3.7 million students are participating in TLC.

TLCF: Technology Literacy Challenge Fund

The Technology Literacy Challenge Fund (TLCF) was the federal program designed to help advance the national goals for educational technology as specified in the nation's, long-range plan for technology, *Getting America's Students Ready for the 21st Century: Meeting the Technology Literacy Challenge*. This program was administered under Public Law 103-382, Elementary and Secondary Education Act (ESEA), Title III, Part A, Subpart 2. This program has been replaced by the new federal NCLB program.

TPG: Telecommunications Planning Group

The Telecommunications Planning Group (TPG) was replaced by the Telecommunications Planning and Oversight Council (TPOC) in September 2001.

TPOC: Telecommunications Planning and Oversight Council

The 77th Texas Legislature created the Telecommunications Planning and Oversight Council (TPOC) to replace the TPG through Senate Bill 311. The TPOC membership consists of twelve members appointed by the Governor, the Speaker of the House, the Lieutenant Governor and by designation in the legislation. The mission of the TPOC is to develop a plan for a state telecommunications network that will effectively and efficiently meet the long-term requirements for state government for voice, video and data communications, with the goal of achieving a single, centralized telecommunications network for state government. The TPOC is responsible for collecting and managing telecommunications network configuration information about existing and planned networks throughout state government; developing a statewide telecommunications operating plan for all state agencies; establishing plans and policies for a system of telecommunications services to be managed and operated by DIR; overseeing the strategic planning and reporting functions for TEX-AN; developing TEX-AN service objectives and performance measures; and developing the strategic plan for the state government telecommunications network.

T-STAR: Texas School Telecommunications Access Resource

The Texas School Telecommunications Access Resource (T-STAR) is a statewide satellite network providing schools with access to one-way video/two-way audio services for receiving student instruction and staff development training from programming providers across the country and from TEA. T-STAR also links TEA, the ESCs and school districts for the purpose of providing and improving distance learning, communications, videoconferencing, inservice training, technical assistance and administrative support.

T-STAR's digital broadcast transmission has given the ESCs and districts sites the ability to deliver T-STAR programming to the computer desktop through Internet Protocol Television (IP/TV). The T-STAR Network provides teachers with options and resources to obtain continuing professional education. Administrators and teachers receive continuing professional education (CPE) credits for Standard Certificate renewal through T-STAR CPE Online. Educations certified after 1999 must meet new certification requirements which include continuing professional education hours. Designated CPE video programming produced by T-STAR offers educators accessible professional development at no cost.

Appendices:

Appendix A: Texas Education Agency Rider 70

Appendix B: Mission and Charter Statement

Appendix C: Membership Roster

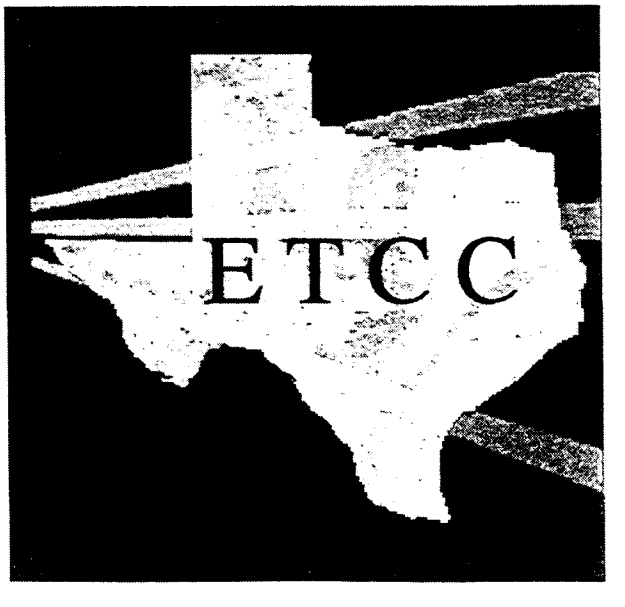
Appendix D: Agency Web Site Addresses

Appendix E: Master Technology Teachers

Appendix F: Master Technology Teacher Standards

Appendix G: TIF Discovery Grant Summaries

Appendix H: Texas STaR Chart



Appendix A:

Texas Education Agency Rider

Current Rider Number
70.

Rider Language

Education Technology Coordinating Council.

The Texas Education Agency (TEA), the Department of Information Resources (DIR), the General Services Commission (GSC), the State Board for Educator Certification (SBEC), the Telecommunications Infrastructure Fund Board (TIFB), the State Library and Archives Commission (SLAC), the Higher Education Coordinating Board (HECB), Colleges of Education, and the Colleges of Library Science shall ensure that their Agency Strategic Plans adhere to and support the *State of Texas Master Plan for Educational Technology* prepared by the Education Technology Coordinating Council (the Council) under the provisions of Rider 74, House Bill 1, Seventy-sixth Legislature.

The TEA, DIR, GSC, SBEC, TIFB, SLAC, HECB, Colleges of Education and the Colleges of Library Science shall direct a representative of their agency or institution to participate in the Council. The Council shall ensure the coordination of the state's efforts to implement educational technology initiatives.

The Council is charged with the continuing development and maintenance of the State of Texas Master Plan for Educational Technology and submitting an updated Master Plan to the Legislature in December of every even-numbered year. The plan shall articulate the vision and maintain the unified policy direction to guide the creation and implementation of education technology initiatives in Texas.

The ETCC shall give particular attention to the coordination of preservice and inservice training for teachers and librarians.

Appendix B:

Education Technology Coordinating Council
Mission and Charter Statement

Mission

The Education Technology Coordinating Council (Council) is established to represent the interests of both the State of Texas and of state agencies and institutions of higher education (agencies) to ensure the cooperation and coordination of the state's efforts to implement educational technology initiatives. The Council shall develop a statewide master plan for educational technology. The Council shall give particular attention to the coordination of preservice and inservice training for teachers and librarians. Participating agencies shall share resources as necessary to provide adequate staff for the Council. Agencies participating in the Council include:

- The Texas Education Agency (TEA)
- The Department of Information Resources (DIR)
- The General Services Commission (GSC)
- The State Board for Educator Certification (SBEC)
- The Telecommunications Infrastructure Fund (TIF) Board
- The State Library and Archives Commission (TSLAC)
- The Higher Education Coordinating Board (THECB)
- Colleges of Education

The Council recognizes that it has a higher duty to represent the interests of the State of Texas over the individual interests of the state agencies. If there are conflicts between the needs and interests of the State of Texas and the interests of any individual agencies, the Council will make recommendations that consider the greater interests of the State of Texas.

Guiding Documents

The guiding documents governing the work of the ETCC are:

- Rider 70 to the Texas Education Agency appropriation;
- Texas Education Agency's *Long Range Plan for Technology, 1996-2010;*

- Telecommunications Infrastructure Fund Board's Master Plan;
- Higher Education Coordinating Board's Master Plan for Distance Learning;
- State of Texas Strategic Plan; and
- The Department of Information Resources' 1997 State Strategic Plan for Information Resource Management.

Education Technology Coordinating Council
Mission and Charter Statement

Council Responsibilities and Deliverables

The Education Technology Coordinating Council shall:

- Establish and maintain bylaws regarding membership, responsibilities and governance of the Council.
- Charter Working Committees.
- Consider and vote on recommendations received from the standing and ad hoc committees.
- Develop a statewide master plan for educational technology.
- Coordinate preservice and inservice training for teachers and librarians.

Council Membership

The Council shall have Voting, Non-Voting and Ex-Officio Members.

Memberships belong to agencies, not to individuals.

The executive officer of each Voting Member shall designate, the primary representative to the Council.

- Voting Members are:

    1. State agencies that have been identified by the Texas State Legislature in Rider 74 to the Texas Education Agency appropriation; and,

    2. A College of Education representative nominated by peers to serve on the Council Steering Committee and represent the remaining Colleges on the Council. The individual would be responsible for communicating back to College of Education peers on an ongoing basis.

Voting members are designated in Attachment 1 to this Charter; this attachment will be updated as appropriate upon a simple majority vote of the voting members.

- Non-voting members are state agencies and other organizations that have significant interest in educational technology initiatives.

Non-voting members are designated in Attachment 2 to this Charter; this attachment will be updated as appropriate upon a simple majority vote of the voting members.

Education Technology Coordinating Council
Mission and Charter Statement

Voting Member Attendance

Regular attendance at called meetings is required to maintain a voting membership.

The attendance requirement is satisfied when a Voting Member attends electronically: e.g. via video teleconferencing.

The Chair will contact the Voting Member after two or more consecutive absences.

Council Officers and Responsibilities

The Council will have three officers: a Chair, Vice-Chair and Secretary.

The duties of the officers are:

- Chair: call, set agendas and preside at meetings of the Council, including executive sessions of the voting members; represent the Council as required.
- Vice-chair: act in the Chair's absence, performing any and all duties of the Chair as required.
- Secretary: certifies the minutes prior to distribution to the membership.

Council Officer Elections and Terms

Officers will be elected from among the Voting Members.

A quorum of Voting Members must be present to elect officers.

The election of officers will be held at the kickoff meeting on September 27, 1999.

Officers will be elected by simple majority vote of the voting members.

Each term of office will be for the duration of the Council's charge.

Council Meetings

Meetings will be held quarterly or at the call of the Chair.

A quorum of the voting members is required to conduct a meeting.

Meetings will be open and meeting times, places and agendas will be posted to the DIR web site at www.dir.state.tx.us.

Meetings will be documented.

Education Technology Coordinating Council
Mission and Charter Statement

Minutes will be kept and posted for public information.

The Chair may call the voting members into an Executive Session of the Council at the discretion of the Chair.

Voting

Each voting member has only one vote.

A simple majority vote of the voting members is required to adopt recommendations or take action on matters before the Council.

Council Committees

- The Council will act as a Committee of the Whole when:
  1. Participating in planning discussions; and,
  2. Considering reports and recommendations made by the Working Committees.
- The Council will charter and appoint the Chairs of Working Committees.
- The Working Committees of the Council are:
  1. Mission Development
  2. Goals Development (8 committees; one for each goal)
  3. Research
  4. Report Development
- The charters will include the primary responsibilities of each of the committees. The committees may recommend changes or additions to the charters for consideration by the Council.
- Working Committees must consider both chartered duties and referred actions in the context of what is best for the state. Recommendations must reflect the committee's best judgment as to the best course of action for the state. The impacts to individual agencies should be noted for Council consideration.
- The Council will refer matters to the various committees at its discretion. Each referral will be specific and include the requested time for completion of the referral, as well as the resources that can be made available to the committee.
- Committees will provide decision and recommendation documents, in the form determined by the Council, to the Council for their consideration.

Education Technology Coordinating Council
Mission and Charter Statement

Committee Membership

A representative of a Voting Member will chair each Working Committee.

The Council will appoint the initial members of all committees. The committees may add other members at their discretion.

Voting members will serve as members of Working Committees appointed by the Council.

Non-voting members may serve as members on Working Committees appointed by the Council.

Committees may create subcommittees and determine their membership at their discretion.

Committee Meetings

Meetings will be held at the call of the Chair of the Committee.

Meetings will be open and meeting times, places and agendas will be posted to the DIR web site at www.dir.state.tx.us.

Minutes will be kept and posted for public information.

A quorum of committee members must be present to consider adopting recommendations for consideration by the Council.

A simple majority vote of the committee members present is required to adopt recommendations for consideration by the Council.

Attachments

1. Voting members
2. Non-voting members

Appendix C:

Educational Technology Coordinating Council (ETCC)
MEMBERSHIP ROSTER

Organization	Name	Title	Telephone #	Email Address	Mailing Address
AGENCIES					
Department of Information Resources	Carolyn Purcell *	Executive Director	512.475.4720	Carolyn.purcell@dir.state.tx.us	P. O. Box 13564 Austin, Texas 78711-2482
Texas Building and Procurement Commission (formerly GSC)	Randall Riley *	Executive Director	512.463.3447	Randall.Riley@tbpc.state.tx.us	P. O. Box 13047 Austin, Texas 78711-3047
Higher Education Coordinating Board	Dr. Gloria A. White *	Deputy Assistant Commissioner	512.427.6224	Gloria.white@thecb.state.tx.us	Box 12788 Austin, Texas 78711-2788
State Board for Educator Certification	Dr. Ron Kettler *	Program Administrator	512.238.3257	Ron.kettler@sbec.state.tx.us	4616 W. Howard Lane, Suite 120 Austin, Texas 78728
Telecommunications Infrastructure Fund	Dirk Jameson *	Executive Director	512.475.5300	djameson@tifb.state.tx.us	P. O. Box 12876 Austin, Texas 78711
Texas Education Agency	Ann Smisko *	Associate Commissioner for Curriculum, Assessment and Technology	512.463.9087	Asmisko@tea.state.tx.us	1701 N. Congress Avenue Austin, Texas 78701-1494
Texas Education Agency	Anita Givens Brian Rawson Kate Loughrey	Sr. Dir. Ed Tech Coord. Info Syst. Asst. Dir. Ed Tech	512.463.9400 512.463.9758 512.463.9401	agivens@tea.state.tx.us brawson@tea.state.tx.us kloughre@tea.state.tx.us	1701 N. Congress Avenue Austin, Texas 78701-1494
Texas State Library & Archives Commission	Deborah Littrell *		512.463.5456	Deborah.littrell@tsl.state.tx.us	P. O. Box 12927 Austin, Texas 78711-2927

* Denotes voting member

Educational Technology Coordinating Council (ETCC)
MEMBERSHIP ROSTER

Organization	Name	Title	Telephone #	Email Address	Mailing Address
HIGHER EDUCATION					
Angelo State University	John Miazga	Head, Department of Education	915.942.2052	John.miazga@agnelo.edu	P. O. Box 10893 ASU Station San Angelo, Texas 76909
Lamar University at Beaumont	Dr. Carl Westerfield	Dean of Education	409.880.8661	Westerfirc@hal.lamar.edu	4400 Martin Luther King Parkway Beaumont, Texas 77710
Midwestern State University	Mary Ann Coe	Assoc. Professor Educational Tech.	940.397.4137	Maryann.coe@nexus.mwsu.edu	3410 Taft Boulevard Wichita Falls, TX 76308-2095
Prairie View A&M University	Dr. M. Paul Mehta	Dean, College of Education	936.857.2918	Paul_mehta@pvamu.edu	P. O. Box 519 Prairie View, Texas 77446-0519
Sam Houston State University	Dr. Thomas A. Wood	Dean, College of Education & Applied Science	936.294.1101	twood@shsu.edu	P. O. Box 2029 Huntsville, Texas 77341
Southwest Texas State University	Dr. John Beck *	Dean, School of Education	512.245.2150	JB01@swt.edu	601 University Drive San Marcos, TX 78666
Stephen F. Austin State University	Dr. Patsy Hallman	Dean, School of Education	936.468.2901	phallman@sfasu.edu	P. O. Box 13023 Nacogdoches, Texas 75962
Sul Ross State University	Joyce Mussey (retired)	Director, Center for Professional Development of Teachers	915.837.8164	Jmussey@sulross.edu	P. O. Box C-115 Alpine, Texas 79832-0001

Tarleton State University	Dr. Jill Burk	Interim Dean, College of Education	254.968.9089	burk@tarleton.edu	P. O. Box T-0210 Stephenville, Texas 76402
Texas A&M University	Dr. Jane Conoley	Dean, College of Education	979.845.5311	Jane-conoley@tamu.edu	College of Education Office of the Dean 4222 TAMUS College Station, Texas 77843-4222
Texas A&M University-Commerce	Dr. Jerry B. Hutton	Dean, College of Education	903.886.5180	Jerry_Hutton@tamu-commerce.edu	Office of the Dean College of Education P. O. Box 3011 Commerce, Texas 75429
Texas A&M University	Dr. Sue Espinoza	Assoc. Professor Department of Secondary and Higher Education	903.866.5500	Sue_Espinoza@tamu-commerce.edu	Secondary & Higher Education 2600 S. Neal St. Commerce, Texas 75429
Texas A&M University at Corpus Christi	Dr. Dee Hopkins	Dean, College of Education	361.825.2660	dhopkins@falcon.tamucc.edu	6300 Ocean Drive Corpus Christi, Texas 78412
Texas A&M International University	Dr. Rosa Maria Vida	Dean, College of Education	956.326.2420	rmvida@tamiu.edu	5201 University Boulevard Laredo, Texas 78041-1900
Texas A&M University at Kingsville	Dr. Robert Marshall	Assoc. Professor Education Administration	361.593.2901	Kfrlm00@tamuk.edu	MSC 196 Kingsville, Texas 78363
Texas A&M University at Texarkana	Dr. Gene Mueller	Dean, College of Arts & Sciences and Education	903.223.3136	Gene.mueller@tamut.edu	2600 North Robison Rd. Texarkana, Texas 75501
Texas Southern University	Larry Grant & Dr. Donald Dement	Manager, Academic Computing	713.313.7467	Ddement@sctcorp.com	3100 Cleburne Street Houston, Texas 77004

Texas Tech University	Dr. Vance Durrington	Director of Instructional Services	806.742.2394	Vance@ttacs.ttu.edu	P. O. Box 41071 Lubbock, Texas 79409
Texas Woman's University	Dr. Keith Swigger	Dean, College of Professional Education	940.898.2204	KSwigger@twu.edu	P. O. Box 425769, TWU Station Denton, Texas 76204-5769
University of Houston at Clear Lake	Dr. Trudy Driskell Dr. Caroline M. Crawford	Instruction Technology Lecturer Asst. Professor, School of Education	281.283.3568 281.283.3587	Driskell@cl.uh.edu Crawford@cl.uh.edu	2700 Bay Area Boulevard Houston, Texas 77058-1098
University of Houston – Downtown	Dr. Evelyn R. Brown	Department of Urban Education	713.221.8208 or 713.221.8906	Browne@dt.uh.edu	1 Main Street Houston, Texas 77002-1001
University of Houston – Main	Dr. Allen Warner	Professor College of Education	713.743.5059	Awarner@uh.edu	4800 Calhoun Road Houston, Texas 77204
University of Houston at Victoria	Dr. Cheryl Hines	CHRM, Division of Education	361.788.6247	Hinesc@cobalt.vic.uh.edu	3007 N. Ben Wilson Victoria, Texas 77901
University of North Texas	Ms. Joneel Harris	Assoc. VP for Enrollment Management	940.565.4601	HarrisJ@unt.edu	P. O. Box 310830 Denton, Texas 76203-0830
University of Texas at Arlington	Dr. Jeanne Gerlach Dr. John Jacobson Dr. Kathy Canaday	Dean, School of Education Director of Graduate Studies and Academic Affairs Assistant Professor	817.272.5476 817.272.3346 817.272.2853	Gerlach@uta.edu Jacobson@uta.edu Canaday@uta.edu	P. O. Box 19227 Arlington, Texas 76019

University of Texas	Dr. Paul Resta *	Professor and Director, Learning Technology Center	512.471.4014	Resta@mail.utexas.edu CC to: Mjowens@mail.utexas.edu	George I. Sanchez Building Rm. 438B MS: D5900 Austin, Texas 78712
University of Texas at Dallas	Dr. Scherry Johnson	Exec. VP, Academic Affairs & Provost	972.883.2105	sjohnson@utdallas.edu	P. O. Box 830688 Richardson, Texas 75083-0688
University of Texas at El Paso	Dr. Arturo Pacheco	Center for Research on Education Reform	915.747.5572	apacheco@utep.edu	500 West University Avenue Education Building, Rm 414, Mail Code: 00727 El Paso, Texas 79968-0691
University of Texas – Pan American	Dr. Hilda Medrano	Dean, College of Education	956.381.3627 Ext. 3628	medrano@panam.edu	College of Education Office of the Dean 1201 W. University drive Edinburg, Texas 78539-2999
University of Texas – Permian Basin	Dr. Jose Ruiz-Escalante	Dean, School of Education	915.552.2139	Ruiz_j@utpb.edu	4901 E. University Odessa, Texas 79762
University of Texas at San Antonio	Dr. Christopher A. Borman	Professor, Dept. of Counseling & Educational Psychology	210.458.4423	Cborman@utsa.edu	6900 North Loop 1604 West San Antonio, Texas 78249-1130
University of Texas at Tyler	Dr. Milford Clark (will be represented by Sharon Back) Sharon Back	Dean, School of Education School of Education	903.566.7050 903.566.7050	Mil_clark@mail.uttyl.edu Sharon_Back@mail.uttyl.edu	3900 University Boulevard Tyler, Texas 75799
West Texas A&M University	Dr. Ted Guffy	Dean, College of Education	806.651.2603	tguffy@mail.wtamu.edu	2501 4th Avenue Canyon, Texas 79016-0001

* Denotes voting member

Appendix D:

Education Technology Coordinating Council (ETCC)
Agency Web Site Addresses

Organization	Web Address
AGENCIES	
Department of Information Resources	http://www.dir.state.tx.us
Texas Building and Procurement Commission	http://www.tbpc.state.tx.us
Higher Education Coordinating Board	http://www.thecb.state.tx.us
State Board of Educator Certification	http://www.sbec.state.tx.us
Texas Education Agency	http://www.tea.state.tx.us
Texas State Library & Archives Commission	http://www.tsl.state.tx.us
TIF Board	http://www.tifb.state.tx.us

HIGHER EDUCATION	
Angelo State University	http://www.angelo.edu
Lamar University at Beaumont	http://www.lamar.edu
Midwestern State University	http://www.mwsu.edu
Prairie View A&M University	http://www.pvamu.edu
Sam Houston State University	http://www.shsu.edu
Southwest Texas State University	http://www.swt.edu
Stephen F. Austin State University	http://www.sfsu.edu
Sul Ross State University	http://www.sulross.edu
Tarleton State University	http://www.tarleton.edu
Texas A&M University	http://www.tamu.edu
Texas A&M University-Commerce	http://www.tamu-commerce.edu
Texas A&M University at Corpus Christi	http://www.tamucc.edu

Education Technology Coordinating Council (ETCC)
Agency Web Site Addresses

Organization	Web Address
HIGHER EDUCATION	
Texas A&M International University	http://www.tamuiu.edu
Texas A&M University at Kingsville	http://www.tamuk.edu
Texas A&M University at Texarkana	http:///www.tamut.edu
Texas Southern University	http://www.tsu.edu
Texas Tech University	http:///www.ttu.edu
Texas Woman's University	http:///www.twu.edu
University of Houston at Clear Lake	http:///www.cl.uh.edu
University of Houston – Downtown	http://www.dt.uh.edu
University of Houston at Victoria	http://www.vic.uh.edu
University of North Texas	http://www.unt.edu
University of Texas at Arlington	http://www.uta.edu
University of Texas at Austin	http://www.utexas.edu
University of Texas at Dallas	http://www.utdallas.edu
University of Texas at El Paso	http://www.utep.edu
University of Texas – Pan American	http://www.tr-riscs.panam.edu
University of Texas – Permian Basin	http://www.utpb.edu
University of Texas at San Antonio	http://www.utsa.edu
University of Texas at Tyler	http://www.uttyl.edu
West Texas A&M University	http://www.wtamu.edu

Appendix E:

MASTER TECHNOLOGY TEACHERS

The 77th Texas legislature passed House Bill 1475, which mandates a Master Technology Teacher certification and grant program. This program is very similar to the Master Reading Teacher and Master Mathematics Teacher. Both TEA and SBEC are involved in the implementation of this legislation to ensure that there are teachers with special training to work with other teachers and with students in order to increase the use of technology in each classroom.

The law states that:

> *The commissioner shall make grants to school districts to pay stipends to select certified master technology teachers. The commissioner shall give preference to teachers who teach at high-need campuses. Criteria for selecting high-need campuses will be identified and approved as part of the commissioner rules. The grant program will be implemented after the development of the examination for the master technology teacher certification. While there is currently no funding for the grants, appropriations are expected once the Master Technology Teacher Certificate and examination have been implemented by SBEC.*

SBEC established a committee of Texas educators, educator preparation faculty and other stakeholders to develop standards for the new certificate. The SBEC board adopted Master Technology Teacher Standards in January 2002. These standards will serve as the basis for the new certificate examination. In February of 2002 another committee finalized the test frameworks for the new Master Technology Teacher (MTT) exam. The first administration of the new examination for the Master Technology Teacher certification is planned for summer 2003. (See http://www.sbec.state.tx.us/mtp/mtp.htm)

For the past few years, SBEC has piloted the Texas Beginning Educator Support System (TxBESS). This initiative was designed to increase the retention rate among beginning teachers and to provide them with instructional support during the first two years of their teaching careers. TxBESS has enabled ESCs, universities, districts, businesses, and communities to unite in support of beginning teachers to improve student learning. Initial funding for this pilot was provided by the U.S. Department of Education and SBEC. However, the 2001-2002 school year is the final year of federal funding for this pilot program.

TxBESS has addressed three major goals:

1. To develop an infrastructure for beginning teacher induction and support in Texas
2. To assist teachers in developing practices that support high quality education
3. To improve student performance

The motivation for TxBESS is the belief that increasing the retention rate among beginning teachers both reduces overall costs of teacher turnover and increases the likelihood of improved student performance. Final evaluation of the pilot project will show whether retention rates have increased appreciably. Preliminary data for the first two years of TxBESS show this to be true. ESCs and school districts provide training in TxBESS program, mentor preparation, professional coaching and standards for good teaching. The TxBESS program supported approximately 4,000 beginning teachers during the 2001- 2002 school year, however this is only 10% of the state's novice teachers. During that academic year 300 school districts and 80 educator preparation programs were designated TxBESS partners.

We find many possibilities for the "just in time" model of professional development, which gives educators information, training, and technical support when and where they need it, both during and outside their professional day. Teachers and other school staff members can choose from distance learning opportunities offered via satellite, video-conferencing or the Internet. T-STAR, a statewide TEA initiative, became an approved continuing professional education provider from SBEC. Educators can acquire professional development certification requirements by viewing T-STAR programming. Approximately 400 T-STAR district sites have upgraded their T-STAR system and many of these sites have distributed T-STAR via wide area networks to reach campuses.

T-STAR's digital broadcast transmission has given the ESCs and districts sites, the ability to deliver T-STAR programming to the computer desktop through Internet Protocol Television (IP/TV). T-STAR to the Desktop has been implemented at TEA and provides the Agency with the live T-STAR programs as well as video on demand programming.

The T-STAR Network provides teachers with options and resources to obtain continuing professional education. Administrators and teachers receive continuing professional education (CPE) credits for Standard Certificate renewal through T-STAR CPE Online. Educations certified after 1999 must meet new certification requirements which include continuing professional education hours. Designated CPE video programming produced by T-STAR offers educators accessible professional development at no cost.

Each of Texas' 20 ESCs is responsible for providing its districts with technology services in ways that enhance efficiency, effectiveness and the performance of students, teachers and administrators. Specifically, ESCs must provide planning, consultation, professional development and technical assistance in response to district needs and in support of the SBOE's *Long-Range Plan for Technology, 1996-2010*. The desired outcomes include development of collaboratives and partnerships, regional network development and operation, education resources preview centers, training and professional development services, support of TLC and other statewide technology initiatives, planning and grant development, and distance learning opportunities. The TEA's Educational Technology Division assists ESCs with financial support.

Technology professional development is a cornerstone of the services provided by ESCs. A variety of technology workshops are offered by each ESC throughout the year to meet the varied needs of school districts. Educators can learn the basics of technology use, receive training on specific software packages, find educational resources on the Internet and explore strategies for integrating technology across the curriculum. ESCs also provide TIFTech training, customize training for individual school districts and offer training via multiple technologies. Educators can view the professional development offerings through ESC Web-based catalogs and register for selected work shops online.

MASTER TECHNOLOGY TEACHER STANDARDS

Standard I. The Master Technology Teacher effectively models and applies classroom teaching methodology and curriculum models that promote active student learning through the integration of technology and addresses the varied learning needs of all students.

Standard II. The Master Technology Teacher selects and administers appropriate technology-related assessments on an ongoing basis and uses the results to design and improve instruction.

Standard III. The Master Technology Teacher applies knowledge of digital learning competencies including Internet research, graphics, animation, web site mastering, and video technology.

Standard IV. The Master Technology Teacher serves as a resource regarding the integration of assistive technologies and accessible design concepts to meet the needs of all students.

Standard V. The Master Technology Teacher facilitates appropriate, research-based technology instruction by communicating and collaborating with educational stakeholders; mentoring, coaching, and consulting with colleagues; providing professional development opportunities for faculty; and making decisions based on converging evidence from research.

Appendix F:

MASTER TECHNOLOGY TEACHER'S STANDARDS

Standard I. The Master Technology Teacher effectively models and applies classroom teaching methodology and curriculum models that promote active student learning through the integration of technology and addresses the varied learning needs of all students.

Teacher Knowledge: What Master Technology Teachers Know

Teachers of Students in Grades EC–12

The Master Technology Teacher knows and understands:

1.1k the knowledge and skills included in the Technology Applications Standards I–V for all beginning teachers;

1.2k that educators and students have different levels of technology knowledge and skills that require varied instructional methods and approaches;

1.3k components of effective instructional design (e.g., eliciting and using prior knowledge, integrating prior and new knowledge, integrating knowledge and skills, providing scaffolded instruction, planning reviews) in a technology-enhanced environment;

1.4k effective methods for incorporating technology into various instructional strategies (e.g., direct instruction, cooperative, project-based);

1.5k methods for using technology to maximize student learning and teacher effectiveness;

1.6k a variety of technology-based tools to support effective instruction;

1.7k ways in which technology affects the role of the teacher (e.g., mentor, facilitator, collaborator) to promote student-centered learning;

1.8k processes for integrating evolving technologies to transform the teaching process by promoting greater levels of interest, inquiry, analysis, collaboration, creativity, and content production;

1.9k how to use technology to promote students' ability to work collaboratively to propose, assess, and implement solutions to real-world problems and to communicate effectively with a variety of audiences;

1.10k methods for providing effective technology-enhanced instruction to meet the educational needs of all students, including those with special needs;

1.11k effective classroom management strategies in technology-enhanced learning environments;

Teacher Knowledge: What Master Technology Teachers Know

Teachers of Students in Grades EC–12 (continued)

1.12k theories and factors that affect learning in technology-enhanced environments (e.g., students' developmental stages and characteristics); and

1.13k issues related to equity and access.

Teacher Application: What Master Technology Teachers Can Do

Teachers of Students in Grades EC–12

The Master Technology Teacher is able to:

1.1s facilitate classroom teachers' acquisition and implementation of the knowledge and skills in the Technology Applications Standards I–V for all beginning teachers;

1.2s develop and/or use formal and informal assessments to evaluate educators' technology proficiency and instructional strategies;

1.3s develop and/or use formal and informal assessments to evaluate students' technology proficiencies;

1.4s select and use appropriate research-based strategies to address the varied technology needs of educators and students;

1.5s identify and adapt appropriate technology tools for specific instructional needs;

1.6s apply current research on teaching and learning with technology when planning and designing effective learning experiences and environments;

1.7s facilitate the design and implementation of developmentally appropriate learning experiences that use technology-enhanced instructional strategies to support the diverse needs of all students;

1.8s facilitate the integration of instructional technology tools on a consistent basis across the curriculum;

1.9s recognize that technology may be assistive, instructional, or both, depending on a student's Individual Educational Plan (IEP);

1.10s create classroom environments that effectively integrate technology;

1.11s communicate and collaborate with other educators to plan and implement effective, technology-enhanced instructional environments and experiences;

1.12s model and apply effective classroom management strategies in a technology-enhanced environment; and

1.13s demonstrate continual growth in technology, knowledge, and skills to stay abreast of current and emerging technologies.

Standard II. The Master Technology Teacher selects and administers appropriate technology-related assessments on an ongoing basis and uses the results to design and improve instruction.

Teacher Knowledge: What Master Technology Teachers Know

Teachers of Students in Grades EC–12

The Master Technology Teacher knows and understands:

2.1k the reciprocal nature of assessment, planning, and instruction;

2.2k fundamental characteristics of quantitative and qualitative assessments;

2.3k fundamental assessment-related issues, such as those related to bias, reliability, and validity;

2.4k characteristics and uses of types of technology-related assessments, including performance-based, in-depth, continuous progress monitoring, and summative evaluation; and

2.5k the benefits and limitations of technology as applied to the assessment process.

Teacher Application: What Master Technology Teachers Can Do

Teachers of Students in Grades EC–12

The Master Technology Teacher is able to:

2.1s facilitate the evaluation of students' knowledge and skills using technology-related assessment methods (e.g., projects, portfolios, performance-based) where appropriate;

2.2s facilitate educators' appropriate assessment of technology-enriched instruction;

2.3s facilitate ongoing educator and student self-assessment in the use of technology, including both process and product; and

2.4s use appropriate quantitative and qualitative assessments before, during, and after instruction to guide instruction and monitor progress.

Standard III. The Master Technology Teacher applies knowledge of digital learning competencies including Internet research, graphics, animation, Web site mastering, and video technology.

Teacher Knowledge: What Master Technology Teachers Know

Teachers of Students in Grades EC–12

The Master Technology Teacher knows and understands:

Foundations

3.1k the appropriate use of hardware components, software programs, and their connections;

3.2k data-input skills appropriate to a given task; and

3.3k pertinent laws and issues regarding the use of technology in society.

Information Acquisition

3.4k a variety of strategies for acquiring information from electronic resources; and

3.5k how to acquire and evaluate electronic information in a variety of formats.

Problem Solving

3.6k how to use appropriate computer-based productivity tools to create and modify solutions to problems;

3.7k how to use research skills and electronic communication to create new knowledge; and

3.8k how to use technology applications to facilitate evaluation of work, including both process and product.

Communication

3.9k how to create and format digital information for effective communication;

3.10k how to deliver a product electronically in a variety of media;

3.11k how to evaluate communication in terms of both process and product; and

3.12k the characteristics, purpose, and protocols for using a variety of electronic communication tools.

Teacher Application: What Master Technology Teachers Can Do

Teachers of Students in Grades EC–12

The Master Technology Teacher is able to:

Foundations

3.1s demonstrate the knowledge of technology terminology and concepts, and demonstrate proficient use of input and output devices when using selected digital technologies (e.g., text, graphics, animation, video, sound, Internet applications);

3.2s identify, create, use, and exchange digital file formats (e.g., text, image, video, audio) between applications and/or platforms;

3.3s model ethical use of and respect for intellectual property and understand copyright, fair use, patent, and trademarks when using, manipulating, and editing electronic media;

3.4s make decisions regarding the selection, acquisition, and use of productivity and authoring software, taking into consideration its quality, appropriateness, effectiveness, and efficiency;

3.5s apply design concepts to assist students and educators in the creation of products;

3.6s facilitate the use of integrated technologies in foundation and enrichment curricular content;

3.7s facilitate the use of appropriate digital and analog video and audio systems, software applications, and hardware for a designated task;

3.8s facilitate the preproduction, production, distribution, and use of student and educator media products;

3.9s plan and design activities and products that are accessible to diverse audiences (e.g., visually impaired, hearing impaired, learning disabled); and

3.10s use strategies to navigate, access, share, and store information across networks (e.g., intranet, Internet).

Information Acquisition

3.11s obtain and cite the source of print and digital information from a variety of resources (e.g., the Internet, encyclopedias, databases, and libraries of images in a variety of formats including text, audio, video, graphics);

3.12s identify and employ a method to evaluate information acquired from primary and secondary sources for accuracy and validity;

3.13s organize, store, and retrieve electronic information; and

3.14s apply appropriate electronic search strategies to a variety of resources.

Problem Solving

3.15s extend the learning environment beyond the classroom through the creation and sharing of electronically formatted and published documents via electronic networks;

3.16s synthesize new information from data gathered from interviews, print, and electronic resources;

3.17s accomplish tasks through technological collaboration and participate with electronic communities as a learner, initiator, contributor, and teacher/mentor;

3.18s create technology specifications for tasks and evaluation rubrics to evaluate process and product against established criteria;

3.19s resolve information conflicts and validate information through accessing, researching, and comparing data;

3.20s integrate productivity tools including, but not limited to, word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs, into digital graphics;

3.21s facilitate the use of appropriate digital editing tools and established design principles including consistency, repetition, alignment, proximity, ratio of text to white space, image file size, color use, and font size, type, and style; and

3.22s collaborate with colleagues and other professionals to delineate technological tasks related to solving problems.

Communication

3.23s select content for, format, and present media activities and projects according to defined output specifications, including target audience, communication purpose, and viewing environment;

3.24s determine and employ methods to evaluate the design (for audience and content delivery) and functionality (for navigation and interaction) of interactive media;

3.25s create media products for specified audiences; and

3.26s apply a variety of electronic communication tools appropriately.

Standard IV. The Master Technology Teacher serves as a resource regarding the integration of assistive technologies and accessible design concepts to meet the needs of all students.

Teacher Knowledge: What Master Technology Teachers Know

Teachers of Students in Grades EC–12

The Master Technology Teacher knows and understands:

4.1k that assistive technology is any tool that enables a child with an identified disability to do something that they would not otherwise be able to do;

4.2k how to locate resources regarding available assistive technologies and accessible design concepts for electronic media development;

4.3k that decisions about assistive technology for students are required by law to be made by the Individual Educational Plan (IEP) or Section 504 Committee;

4.4k various ways to adapt technology to address the needs of all students (e.g., accessible design concepts for electronic media, physical access); and

4.5k assistive technology as defined by state and federal regulations.

Teacher Application: What Master Technology Teachers Can Do

Teachers of Students in Grades EC–12

The Master Technology Teacher is able to:

4.1s identify and suggest appropriate information resources to support student-centered decisions about technology-based solutions;

4.2s recognize that technology may be assistive, instructional, or both, depending on a student's Individual Educational Plan (IEP);

4.3s identify personnel who are responsible for assistive technology decisions;

4.4s collaborate with classroom teachers and other staff (e.g., special education, technology) to link individual needs with appropriate technologies; and

4.5s consider disabilities, learning differences, and needs when evaluating technologies.

Standard V. The Master Technology Teacher facilitates appropriate, research-based technology instruction by communicating and collaborating with educational stakeholders; mentoring, coaching, and consulting with colleagues; providing professional development opportunities for faculty; and making decisions based on converging evidence from research.

Teacher Knowledge: What Master Technology Teachers Know

Teachers of Students in Grades EC–12

The Master Technology Teacher knows and understands:

Communication and Collaboration with Educational Stakeholders

5.1k the dual role of the Master Technology Teacher as teacher and mentor in the school community;

5.2k leadership, communication, and facilitation skills and strategies; and

5.3k principles, guidelines, and professional ethical standards regarding collegial and professional collaborations, including issues related to confidentiality.

Mentoring, Coaching, and Consulting

5.4k skills and strategies for mentoring, coaching, and consulting in the development, implementation, and evaluation of effective technology integration;

5.5k strategies for facilitating positive change in instructional practices through mentoring, coaching, and consulting; and

5.6k differences between consultation and supervision, and that the role of the Master Technology Teacher is consultation.

Professional Development for Faculty

5.7k learning processes and procedures for facilitating adult learning;

5.8k strategies for facilitating positive change in instructional practices through professional development; and

5.9k models and features of effective professional development programs that promote sustained application in classroom practice (e.g., demonstration, modeling, guided practice, feedback, coaching, follow-up).

Decision Making Based on Converging Evidence from Research

5.10k sources for locating information about convergent research on integrating technology into the curriculum; and

5.11k methods and criteria for critically reviewing research on integrating technology into the curriculum and selecting research findings to apply.

Teacher Application: What Master Technology Teachers Can Do

Teachers of Students in Grades EC–12

The Master Technology Teacher is able to:

Communication and Collaboration with Educational Stakeholders

5.1s collaborate with administrators, colleagues, parents/guardians, and other members of the school community to establish and implement the roles of the Master Technology Teacher and ensure effective ongoing communication;

5.2s build trust and a spirit of collaboration with other members of the school community to promote positive change;

5.3s use leadership skills to promote effective integration of technology in the curriculum, encourage support for the use of technology in the classroom, and engage others in integrating technology effectively;

5.4s collaborate with members of the school community to evaluate, negotiate, and establish priorities regarding technology integration;

5.5s confer with students, colleagues, administrators, and parents/guardians to discuss technology-related issues; and

5.6s apply professional ethical standards and guidelines in collegial and professional collaborations.

Mentoring, Coaching, and Consulting

5.7s apply effective mentoring, coaching, and consultation skills and strategies (e.g., observing, negotiating, providing feedback, problem-solving) to support the use of technology among students;

5.8s use mentoring, coaching, and consultation to facilitate team building for promoting student use of technology;

5.9s engage in collaborative, systematic problem solving for supporting effective student use of technology;

5.10s select and use strategies for collaborating with colleagues to identify needs related to integrating technology into the curriculum;

5.11s collaborate effectively with colleagues with varying levels of skill and experience and/or diverse philosophical approaches to technology integration to develop, implement, and monitor the use of technology; and

5.12s select and use strategies to maximize effectiveness as a Master Technology Teacher, such as applying principles of time management and engaging in continuous self-assessment.

Professional Development for Faculty

5.13s collaborate with teachers, administrators, and others to identify professional development needs, generate support for professional development programs, and ensure provision of effective professional development opportunities;

5.14s design opportunities for ongoing professional development that address identified student technology needs, are appropriate for the intended audience, and are based on a convergence of research evidence;

5.15s use a variety of models and methods to create professional development opportunities that improve teachers' abilities to implement effective technology integration; and

5.16s apply principles and procedures for delivering effective professional development and follow-up and for using adult learning experiences to promote and sustain the use of technology.

Make Decisions Based on Converging Evidence from Research

5.17s critically examine convergent research on technology integration and analyze the usefulness of research results for addressing instructional needs; and

5.18s apply appropriate procedures for translating convergent research on technology into practice.

Appendix G:

TIF DISCOVERY 5 GRANT SUMMARIES

Fiscal Agent: Austin ISD
Project Name:
Target Area: Special Education
Collaborating Partners – David Crockett High School, Sidney Lanier High School, Covington Middle School, Pearce Middle School, Casey Elementary School, Maplewood Elementary School,
Summary: Development of a teacher training model to improve social and academic outcomes of students with emotional and behavioral disorders; providing technology tools in 12 self-contained classrooms to allow for individualize instructions. Teachers will be trained on creation and delivery of individualized instruction. Participating teachers will share resources, develop and lead online collaborative student projects and maintain an online community for teachers in self-contained units who instruct students diagnosed with emotional and behavioral disorders. Students from the LBJ High School Science Academy will install equipment/software and provide teacher support.
Award Amount: $500,000

Fiscal Agent: Community Health Development, Inc.
Project Name: Migrant Health Collaborative
Target Area: Migrant and farmer worker health needs and care
Collaborating Partners: National Center for Farmworker Health
Summary: Currently there is no electronic compilation of existing materials dealing with farmworker health care issues. This project proposes to digitize existing library materials, print and video resources, into a searchable online databank. Also included is online training of health providers, and migrant and community health centers.
Award Amount: $500,000

Fiscal Agent: Cuero Community Hospital
Project Name: Cuero Area Telemedicine Alliance
Target Area: School nurse shortage
Collaborating Partners: Cuero ISD, Westhoff ISD, and Meyersville ISD
Summary: This project addresses insufficient medical care for school children in DeWitt County due to severe shortage of school nurses. This project proposed the delivery of technical training, medical forums and access to videoconferencing for teachers, school nurses/nurse substitutes and volunteers to alert them to student and family health related problems. Target areas are the early intervention, diagnosis and treatment of childhood asthma and juvenile diabetes.
Award Amount: $492,415

Fiscal Agent: Laredo Community College
Project Name: Frontera TEC
Target Area: Teacher shortage
Collaborating Partners: El Paso Community College, South Texas Community College, Southwest Texas Community College, Texas State Library and Archives Commission; University of Texas at Brownsville and Texas Southmost College, Rio Grande Institute, San Antonio PBS station KLRN, Virtual College of Texas; UT Health Science Center in San Antonio, Office of Border Health at the Texas Tech Health Science Center in El Paso.
Summary: This project addresses two critical areas. Through collaboration they will explore sustainability issues for existing TIF projects, including this one, and provide Teacher Certification programs via distance learning in the fields of technology, business and early childhood bilingual education at the four community colleges along the border.
Award Amount: $500,000

Fiscal Agent: Texas A&M University System
Target Area: Teacher shortage
Project Name: Electronic Teachers College Content Repository
Collaborating Partners: Prairie View A&M, Tarleton State University, Texas A&M International University, Texas A&M at Galveston; Texas A&M-Commerce, Texas A&M Corpus Christi, Texas A&M-Kingsville, Texas A&M University-Texarkana and West Texas A&M University.
Summary: The Electronic Teachers College project provides time- and place-bound students access to courses and resources for unique support, degree completion and teacher certification for traditional preservice teacher preparation, community college initiatives, school district paraprofessional workforce and professional development for inservice teachers.
Award Amount: $488,750

Fiscal Agent: Houston ISD
Target Area: Low income community
Project Name: M. C. Williams Technology Center
Collaborating Partners: Houston Community College System, Acres Home Multi-Service Center
Summary: This project fosters district and community collaboration in an effort to increase student performance and productivity for community members. Activities include language classes, job skills and educational advancement delivery in a real time setting through various means of technology.
Award Amount: $208,980

Fiscal Agent: University of St. Thomas
Target Area: Teacher shortage and technology professional development for K-12 and higher education faculty
Project Name: TeKnowledgey Project
Collaborating Partners: North Center District of Houston ISD
Summary: This project is designed to develop professional development models utilizing telecommunications for university education faculty and K-12 faculty and staff. In addition, the project proposed the development of a web portal to deliver educational services to low income, minority school populations and their community.
Award Amount: $415,000

Fiscal Agent: Texas A&M University –Kingsville
Target Area: K-16 Collaboration
Project Name: South Texas Videoconference Distance Learning Network
Collaborating Partners: Texas A&M University – Kingsville System – Palo Alto, Beeville ISD, Brooks County ISD, Charlotte ISD, Dilley ISD, Falls City ISD, George West ISD, Goliad ISD, Jim Hogg County ISD, Mathis ISD, Orange Grove ISD, Pearsall ISD, Pleasanton ISD, Premont ISD, San Isidro ISD, Sinton ISD, Somerset ISD, Three Rivers ISD, Yorktown ISD, Texas A&M International University and Texas A&M System
Summary: None of the school districts in the defined region have videoconferencing capabilities. This project will establish a wireless videoconference network to address K-12 education, provide higher education undergraduate, graduate and certification courses, GED and workforce development.
Award Amount: $494,200

Fiscal Agent: University of North Texas
Target Area: Teacher shortage and technology professional development
Project Name: Connect ED Texas
Collaborating Partners: Ector County ISD, London ISD, Texas Center for Educational Technology and Classroom Connect
Summary: This project proposed to develop a portal for high-quality staff development with emphasis on the Technology Applications TEKS. Elements of the portal include the abilities to search online research, professional journals, professional development calendar and development and tracking of student portfolios.
Award Amount: $500,000

Fiscal Agent: Zapata County ISD
Target Area: Low Performing
Project Name:
Collaborating Partners: Zapata Public Library
Summary: This project will provide students, teachers and administrators will personal digital assistants (PDAs) with pre-loaded TEKS standards and cross-referenced to all TAKS objectives. Uses include learning tools for students, assessment tools for teachers, and monitoring and evaluation tools for campus principals. The district's instructional program is supplemented through collaboration with the public library.
Award Amount: $416,232

Fiscal Agent: The University of Texas at Austin – Information Technology Services
Target Area: K-12 Schools
Project Name: Knowledge Gateway (K-12 Access)
Collaborating Partners: UT Division of Instructional Innovation and Assessment, UT System Information Resources; UT General Libraries, and UT Graduate School of Library and Information Sciences
Summary: This proposal focuses on the development and delivery of Web-based content for public schools. This includes online courses, curriculum building resources and professional development opportunities. Activities include the identification and organization of more than 150 K-12 sites and the systematically cataloguing and linking of the sites.
Award Amount: $500,000

Fiscal Agent: The University of Houston – College of Education
Target Area: Professional Development and Teacher Shortage
Project Name: Technology Education Careers for High Schools
Collaborating Partners: Katy ISD, Magnolia ISD, Montgomery ISD and Houston ISD – Barbara Jordan High School for Careers.
Summary: This proposal has participating high schools include content on professional development and training methodology in technology classes. Student technology integration interns assist campus technology specialists and inservice teachers by providing staff development and assist in the development of technology rich lessons
Award Amount: $500,000

Appendix H:

CAMPUS CHART

2002 - 2003
Texas STaR Chart

a Tool for Planning and Assessing
School Technology and Readiness
aligned with the
Long-Range Plan for Technology, 1996-2010

Recommended by the Educational Technology Advisory Committee
Educational Technology Division
Texas Education Agency

Educational Technology Advisory Committee (ETAC)
2001-2003

CO-CHAIRS

Trina Davis, Director of eEducation
Texas A&M University, College Station

Don Knezek, CEO
ISTE, San Antonio

MEMBERS

Kay Abernathy
Project Director
Brazos-Sabine Cooperative, Nome

Diana Berger
Director of Technology Integration
ESC Region 1, Edinburg

Daryl Ann Borel
Assistant Superintendent
Houston ISD, Houston

Eileen Dunne
Program Office for Planning and Staff Development
Abilene ISD, Abilene

Margaret Escalera
District Technology Trainer/Software Specialist
Mt. Pleasant ISD, Mt. Pleasant

CaRita Forte
Technology Facilitator
Round Rock ISD, Round Rock

Dianna Harvill
Director of Educational Technology
ESC Region 5, Beaumont

Debbie Little
District Instructional Technologist
Hillsboro ISD, Hillsboro

Hector Perez
Executive Director of Technology and MIS
United ISD, Laredo

Jackie Shepperson
Executive Director Instructional Technology
Richardson ISD, Richardson

Alex Torrez
Principal
Lubbock ISD, Lubbock

Pam Wood
Director of Secondary Curriculum
Angleton ISD, Angleton

Jerry L. Wright
Superintendent
Highland Park ISD, Amarillo

The Texas STaR Chart

Table of Contents

The Educational Technology Advisory Committee would like to thank the CEO Forum for allowing us to adapt the *CEO Forum STaR Chart* to meet the needs of Texas educators as we strive to provide students with the skills they need to be contributing citizens and productive workers in the 21st Century and beyond.

To: **Administrator Addressed**

From: **Educational Technology Advisory Committee**

Subject: **The Texas STaR Chart**

Date: **Summer 2002**

The Texas Education Agency Educational Technology Advisory Committee (ETAC) developed the **Texas School Technology and Readiness (STaR) Chart**, an online resource tool for self-assessment of your campus' and district's efforts to effectively integrate technology across the curriculum. The statewide Educational Technology Coordinating Council's (ETCC) *State of Texas Master Plan for Educational Technology 2000-2003* recommends that this rubric serve as the standard for assessing technology preparedness in K-12 schools.

The **Texas STaR Chart** is a tool designed for use in technology planning, budgeting for resources, and evaluation of progress in local technology projects. Future applications for state funded technology grants will request a completed campus or district Texas STaR Chart profile to be filed with the application as an indicator of current status and progress and as a formative and/or summative evaluation tool. The online assessment may be used as a basis for dialogue with staff, administrators, technology directors, school board members and community leaders to plan for future growth.

The **Texas STaR Chart** models the national *CEO Forum STaR Chart* in structure and draws measures from a variety of national and statewide technology guidelines. It establishes a clear framework for measuring how well schools are prepared to equip students with the knowledge and skills they need to thrive in today's information technology economy.

The **Texas STaR Chart** and the accompanying Campus Analysis of School Technology and Readiness form produce a profile of your campus' status toward reaching the goals of the *Long-Range Plan for Technology. 1996-2010* (LRPT). The profile indicators place your campus at one of four levels of progress in each key area of the LRPT: Early Tech, Developing Tech, Advanced Tech, or Target Tech.

Please complete the survey located at the Web site below, and use the printed charts, graphs and information to compare your campus' progress to like-sized campuses and to the statewide profile. Your data will be compiled with those of other campuses to provide an overall picture of the state of technology in Texas. Additional statewide aggregated data will be available in the Spring of 2003.

This printed version of the **Texas STaR Chart** materials is provided for your reference.

http://www.tea.state.tx.us/technology/etac/campus_txstar

Texas STaR Chart:
A Tool for Planning and Assessing School Technology and Readiness

The Texas STaR Chart, patterned after the *CEO Forum STaR Chart*, has been developed around the four key areas of the *Long-Range Plan for Technology, 1996-2010:* Teaching and Learning, Educator Preparation and Development, Administration and Support Services, and Infrastructure for Technology. The Texas STaR Chart is designed to help campuses and districts determine their progress toward meeting the goals of the *Long-Range Plan for Technology, 1996-2010*, as well as meeting the goals of their district. The Texas STaR Chart will also assist in the measurement of the impact of state and local efforts to improve student learning through the use of technology.

The Texas STaR Chart will Help Campuses and Districts Answer Some Critical Questions

1) What are your campus' and district's current educational technology profiles?
2) What evidence can be provided to demonstrate their progress in meeting the goals of the *Long-Range Plan for Technology, 1996-2010*?
3) What areas should your campus and district focus on to improve its level of technology integration to ensure the best possible teaching and learning?

The Texas STaR Chart Can Be Used

★ To create and/or to update the district's Technology Plan.

★ To set benchmarks and goals. Campuses and districts may use the chart to identify current education technology profiles, establish goals, and monitor progress.

★ To create individualized assessment tools. Education administrators and policymakers may use the Texas STaR Chart as the basis for technology assessments and to evaluate varied perspectives of different staff and clientele.

★ To apply for grants. The Texas STaR Chart will help schools identify their educational technology needs as they apply for grants.

★ To determine funding priorities. Education administrators and policymakers can use the Texas STaR Chart to determine where to allocate funds.

★ To use the Texas STaR Chart for a historical perspective. Campuses and districts can complete the survey online and then use the profile annually to gauge their progress. The data can be reported to school boards, and community, campus or district planning committees to gauge progress and align with national and state standards.

★ To help conceptualize your campus' or district's vision of technology.

Instructions for Completing a Campus Texas STaR Chart Profile

The printed Texas STaR Chart materials may be used for discussion and collection of data. The online Texas STaR Chart provides campus and district reports that includes charts, graphs, and a customized Texas STaR Chart. Use the instructions below and those online at the Web site www.tea.state.tx.us/technology/etac/campus_txstar to develop your campus STaR profile.

1. The *Long-Range Plan for Technology, 1996-2010* identifies four Key Areas: Teaching and Learning, Educator Preparation and Development, Administration and Support Services, and Infrastructure for Technology.

2. Each Key Area is divided into Focus Areas. Within each Focus Area, indicators are provided for assessing the campus' Level of Progress. It is possible that the campus may have indicators in more than one Level of Progress. Select the **one** Level of Progress that best describes your campus.

3. In order to generate summary charts and graphs, complete the online Texas STaR Chart at www.tea.state.tx.us/technology/etac/campus_txstar.

4. The Texas STaR Chart materials contained in this document may be used to collect and record campus data.

The Texas STaR Chart is a tool to help Texas school districts and campuses develop their own long-range technology plan aligned with the *Long-Range Plan for Technology, 1996-2010.* Campuses and districts can use this data to perform a needs assessment, judge progress, set benchmarks and goals, determine funding priorities, provide information for technology planning, and measure the impact of state and local efforts to improve student learning through the use of technology. Districts will be able to view this data by region, district size, and district type (urban, rural, etc.). This data will not be used as an evaluation measure of individual campuses or districts.

Impact of the Texas STaR Chart
State of Texas Master Plan for Educational Technology 2000-2003

The Texas STaR Chart will serve as a key component in meeting the goals of the *State of Texas Master Plan for Educational Technology 2000-2003*. The 76th Legislature called for creation of a task force to ensure a more integrated vision and planning across Texas state agencies, institutions of higher education and local education agencies, to reinforce the state efforts to implement educational technology initiatives. This taskforce was established as the Education Technology Coordinating Council (ETCC). In January, 2001, ETCC released its Master Plan as a collaborative effort of the Texas Education Agency (TEA), the Department of Information Resources (DIR), the General Services Commission (GSC), the State Board of Educator Certification (SBEC), the Telecommunications Infrastructure Fund (TIF) Board, the Texas State Library and Archives Commission (TSLAC), the Texas Higher Education Coordinating Board (THECB), and the Schools, Colleges, and Departments of Education (SCDEs).

The Texas STaR Chart is a crucial element in the state's efforts of implementing the *State of Texas Master Plan for Educational Technology 2000-2003* and can be used to measure the state's accomplishments in meeting the established goals. The Texas STaR Chart can be used to promote a minimum level of technology access and use in the state's local education agencies and teacher preparation institutions.

Those interested in reviewing the *State of Texas Master Plan for Educational Technology 2000-2003* can access the document online at www.etcc.state.tx.us.

THE TEXAS CHALLENGE

The world is different, and never in our history has success of the State and its citizens been so tightly linked to ongoing learning. If the social, intellectual, and economic opportunities of the Digital Age are to be shared by all Texans, our citizens - and especially our young citizens - must be guaranteed an excellent 21st Century education.

Texas' *Long-Range Plan for Technology, 1996-2010* organizes recommendations for effective integration of technology in schools within four key areas, with clear challenges in each area. The areas include: Teaching and Learning, Educator Preparation and Development, Administration and Support Services, and Infrastructure for Technology.

Challenges in Teaching and Learning

The traditional model of schooling, with the teacher choosing what is to be learned and then serving as the source of knowledge and with the student acting as the receiver of that knowledge, is not adequate for 21st Century, world-class education. Roles of teacher and learner must change. In the Digital Age the sheer volume of information means that Texas students cannot be passive recipients of instruction; rather, Texas students must become active participants in the learning process. It is vitally important that students know where and how to find content relevant to their needs and know how to be sure their sources are credible. It is important that students gain skills for collaboratively constructing, using, and communicating the knowledge they need for a chosen task, project, or learning pursuit. Learning and teaching must be different from past traditions.

> ***"...we must also prepare teachers far differently for significantly different roles, different kids, and different tools..."***

Information and communications technologies empower learners to undertake authentic projects for learning and productivity even in early grades. These technologies make possible collaboration of diverse work and learning groups and provide access to rich resources and expertise previously unavailable. Indeed, these technologies enable us to envision learning and student productivity that extends far beyond the walls of the classroom and far beyond the rigidity of traditional school schedules. Our challenge in teaching and learning is to move traditional learning and teaching from teacher to student, to a system empowering citizens for a global and digital world of information. This transformation is not a simple undertaking, but it is one that must occur if we are to prepare young Texans for their future lives.

"Learning and teaching must be different."

Challenges in Preparation and Development of Educators

Preparing teachers and administrators to effectively facilitate and manage 21st Century learning in technology and information rich settings involves radical retooling of the existing professional core of the educational system. Securing time, resources, and effective models for educator professional development presents a tremendous challenge to our state and to the entire nation. That professional development carries the urgent charge of supporting - indeed of catalyzing - the move from traditional schooling to 21st Century schooling.

As the "baby boom" educators move into retirement, it will be our systems of teacher and administrator preparation that must fuel education of young Texans with qualified and skilled personnel. The number of new teachers and administrators needed within the next decade based on student growth and projected retirements is alarming. We must also prepare teachers for significantly different roles, different kids, and different tools and resources. This realization presents the PK-12 community and teacher preparation institutions with the greatest challenges in their history.

"Issues of support and maintenance for the existing and evolving technologies will test our true commitment to connected schools."

"Texas faces a significant challenge in providing visionary school leadership..."

Challenges in Administration and Support Services

The process of integrating technology in schools, in itself, promotes school reform. It is complex schoolwide innovation, and, as such, vision-building, administrator commitment, and skilled leadership, play pivotal roles in success. Texas faces a significant challenge in providing visionary school leadership with the necessary background and requisite skills to lead and nurture the changes technology brings.

Rapid changes on many fronts make it virtually impossible for any individual within a school system to maintain the necessary knowledge to represent all facets of planning for and implementing technology. For this reason, collaborative and ongoing planning consistent with the *Long-Range Plan for Technology, 1996-2010*, and articulated with campus and district plans is necessary if schools are to see improved student learning, increased productivity, and more efficient operations. Fulfilling the vision of technology requires district leaders who articulate and advocate a vision of what technology can do for teaching and learning, and school operations.

Systems of technical support, staffing patterns, budgeting functions, and funding acquisition, require ongoing professional and staff growth. Appropriate technical support services are required in order to maximize educational benefits from our investment in technology. Schools are vulnerable to special challenges for staff retention as demands grow in the booming digital and IT sectors for personnel. School decision-makers are challenged to budget real costs of technology, both initial and ongoing, and to secure funding to support that budget.

Infrastructure for Technology

Texas has made tremendous strides during the last half-decade in connecting schools to each other, to external resources, and to the Internet. Texas schools have been fortunate to have the support of the Texas legislature and the federal government in building the technology infrastructure for schools through direct funding, grants, and discounts. As a result of these resources, districts have begun to build the infrastructure that will allow students and teachers to make use of technology tools that are basic and necessary for educating students today and in the future. Challenges clearly remain. Not all districts, campuses, and classrooms, have the connectivity and tools that they need to integrate technology into the teaching and learning process. Work remains to ensure that connectivity reaches all instructional and professional work areas, and that infrastructure capacity supports promising practices in instruction, school leadership, and operations.

Issues of support and maintenance for existing and evolving technologies will test our true commitment to connected schools. Maintaining appropriate funding levels, securing and retaining qualified staff, maintaining the infrastructure, providing upgrades and greater bandwidth, all provide significant challenges for schools.

The infrastructure of a school is the critical element of support for all four areas: administration, teaching and learning, and educator preparation and development. While school connectivity presents tremendous challenges, implementing that connectivity offers new and exciting opportunities for transforming the institution of schooling.

Summary

Learning for the 21st Century requires new skills, new tools, and new knowledge. Students today must learn different ways to work with tools, different ways to work with information, and different ways to work with people. Our students will function in ever-changing and richly diverse workgroups that often cross national boundaries. One of the greatest challenges our schools face is ensuring that each student is equipped to flourish within a wide array of learning and work communities. Today's world demands this and technology facilitates it. Schools must also foster flexibility - for the 21st Century will demand that its citizens are able to deal with continuous and significant change. Finally, precisely because of ongoing change, Texas students must learn to learn. They must develop skills and habits of learning that will serve them for a lifetime.

The Texas School Technology

KEY AREAS:	TEACHING AND LEARNING					
FOCUS AREAS: / LEVELS OF PROGRESS	(A) Impact of Technology on Teacher Role and Collaborative Learning	(B) Patterns of Teacher Use	(C) Frequency/ Design of Instructional Setting Using Digital Content	(D) Curriculum Areas	(E) Technology Applications TEKS Assessment	(F) Patterns of Student Use
I. Early Tech	Teacher-centered lectures Students use technology to work on individual projects	Use technology as a supplement	Occasional computer use in library or computer lab setting	No technology use or integration occurring in the foundation subject area TEKS Technology use is restricted to technology skills classes only	*Campuses that serve grades K-8:* Within each grade level cluster (K-2, 3-5, 6-8), some but not all Technology Applications TEKS are met *High School Campuses:* At least 4 Technology Applications courses offered	Students occasionally use software applications and/or use tutorial software for drill and practice
II. Developing Tech	Teacher-directed learning Students use technology for cooperative projects in their own classroom	Use technology to streamline administrative functions (i.e. gradebook, attendance, word processing, E-mail, AEIS information etc.)	Regular weekly computer use to supplement classroom instruction, primarily in lab and library settings	Use of technology is minimal in foundation subject area TEKS	*Campuses that serve grades K-8:* Within each grade level cluster (K-2, 3-5, 6-8), most Technology Applications TEKS are met *High School Campuses:* At least 4 Technology Applications courses offered and at least 2 taught	Students regularly use technology on an individual basis to access electronic information and, for communication and presentation projects
III. Advanced Tech	Teacher-facilitated learning Students use technology to create communities of inquiry within their own community	Use technology for research, lesson planning, multimedia and graphical presentations, simulations, and to correspond with experts, peers, and parents	Regular weekly technology use for integrated curriculum activities utilizing various instructional settings (i.e.: classroom computers, libraries, labs, and portable technologies)	Technology is integrated into foundation subject area TEKS, and activities are separated by subject and grade	*Campuses that serve grades K-8:* Within each grade level cluster (K-2, 3-5, 6-8), all Technology Applications TEKS are met Grade-level benchmarks (K-8) are established *High School Campuses:* At least 4 Technology Applications courses offered and at least 4 taught	Students work with peers and experts to evaluate information, analyze data and content in order to problem solve Students select appropriate technology tools to convey knowledge and skills learned
IV. Target Tech	Teacher as facilitator, mentor, and co-learner Student-centered learning in communities of inquiry with business, industry, and higher education	Integration of evolving technologies transforms the teaching process by allowing for greater levels of interest, inquiry, analysis, collaboration, creativity and content production	Students have on-demand access to all appropriate technologies to complete activities that have been seamlessly integrated into all core curriculum areas	Technology is integral to all subject area TEKS	*Campuses that serve grades K-8:* Within each grade level cluster (K-2, 3-5, 6-8), all Technology Applications TEKS are met Grade-level benchmarks (K-8) are met *High School Campuses:* All Technology Applications courses offered with a minimum of 4 taught, or included as new courses developed as local elective or included as independent study course	Students work collaboratively in communities of inquiry to propose, assess, and implement solutions to real world problems Students communicate effectively with a variety of audiences

and Readiness (STaR) Chart

EDUCATOR PREPARATION AND DEVELOPMENT					
(G) Content of Training	(H) Capabilities of Educators	(I) Leadership and Capabilities of Administrators	(J) Models of Professional Development	(K) Levels of Understanding and Patterns of Use	(L) Technology Budget Allocated to Technology Professional Development
Technology literacy skills including multimedia and the Internet	10 % meet SBEC proficiencies and implement in the classroom	Recognizes benefits of technology in instruction; minimal personal use	Whole group	Most at entry or adoption stage	5% or less
Use of technology in administrative task and classroom management; use of TLC resources	40 % meet SBEC proficiencies and implement in the classroom	Expects teachers to use technology for administrative and classroom management tasks; uses technology in some aspects of daily work	Whole group with follow-up to facilitate implementation	Most at adaptation stage	6-24 %
Integration of technology into teaching and learning; regularly uses TLC resources to enrich instruction	60 % meet SBEC proficiencies and implement in the classroom	Recognizes and identifies exemplary use of technology in instruction; models use of technology in daily work	Long term and ongoing professional development; involvement in a developmental/ improvement process	Most at appropriation stage	25-29 %
Regular creation and communication of new technology-supported, learner-centered projects; vertical alignment of Technology Application TEKS; anytime anywhere use of TLC by entire school community	100 % meet SBEC proficiencies and implement in the classroom	Ensures integration of appropriate technologies to maximize learning and teaching; involves and educates the school community around issues of technology integration	Creates communities of inquiry and knowledge building; anytime, anywhere learning available through a variety of delivery systems; individually guided activities	Most at invention stage	30 % or more

No matter where a school falls along the spectrum, the Texas STaR Chart offers valuable information that initiates discussions, drives decisions, and produces results.

ADMINISTRATION AND SUPPORT SERVICES				
(M) Vision and Planning	**(N) Technical Support**	**(O) Instructional and Administrative Staffing**	**(P) Budget**	**(Q) Funding**
No campus technology plan; technology used mainly for administrative tasks such as word processing, budgeting, attendance, gradebooks	No technical support on-site; technical support call-in; response time greater than 24 hours	No full time dedicated district level Technology Coordinator Campus educator serving as local technical support	Campus budget for hardware and software purchases and professional development	Technology allotment only
Campus technology plan aligns with the Texas LRPT; integrated into district; used for internal planning, budgeting, applying for external funding and discounts Teachers/administrators have a vision for technology use for direct instruction and some student use	At least one technical staff to **750** computers Centrally deployed technical support call-in; response time less than 24 hours	Full-time district level Technology Coordinator/Assistant Superintendent for Technology Centrally located instructional technology staff; one for every **5,000** students Additional staff as needed, such as trainer, webmaster, network administrator	Campus budget for hardware and software purchases, professional development, minimal staffing support, and some ongoing costs	Technology allotment and minimum grants/ minimal local funding
In addition to the above, the campus technology plan is approved by the board and supported by superintendent Campus plan collaboratively developed, guiding policy and practice; regularly updated Campus plan addresses Technology Application TEKS and higher order teaching and learning Administrators use technology tools for planning	At least one technical staff to **500** computers Central technology support use remote management software tools Centrally deployed and minimal campus-based technical support on-site; response time is less than 8 hours	Full-time district level Technology Coordinator/Assistant Superintendent for Technology Centrally located instructional technology staff; one for every **1,000** students Additional staff as needed	Campus budget for hardware and software purchases, professional development, adequate staffing support, and ongoing costs	Technology allotment, TIF, other competitive grants, E-Rate discounts applied to technology budget, **locally supplemented** through tax dollars
In addition to the above, the campus technology plan is actively supported by the board Campus plan is collaboratively developed, guiding policy and practice; updated at least annually The campus plan is focused on student success; based on needs, research, proven teaching and learning principles Administrators use technology tools for planning and decision making	At least one technical staff to **350** computers; centrally deployed and dedicated campus-based Central technology support use remote management software tools Technical support on-site; response time is less than 4 hours	Full-time district level Technology Coordinator/Assistant Superintendent for Technology **Dedicated** campus-based instructional technology support staff--one per campus **plus** one for every **1,000 students** Additional staff as needed	Campus budget for hardware and software purchases, **sufficient** staffing support, costs for professional development, incentives for professional development, facilities, and other ongoing costs Appropriate budget to support the district technology plan	Technology allotment, TIF, **other competitive grants**, E-Rate discounts, **locally supplemented** through tax dollars Other state and federal programs directed to support technology funding, bond funds, business partnerships, donations, foundations, and other local funds designated for technology

Education today needs a comprehensive vision that can illustrate where the use of technology can take the 21st Century student. The Texas STaR Chart was designed to help schools and districts develop their vision and implement clear plan to reach that vision.

—Ken Kay, Executive Director, the CEO Forum on Education and Technology

INFRASTRUCTURE FOR TECHNOLOGY

(R) Students per Computer	(S) Internet Access Connectivity/Speed	(T) Distance Learning	(U) LAN/WAN	(V) Other Technologies
Ten or more students per Internet-connected multimedia computer Replacement cycle established by district/ campus is 6 or more years	Dial-up connectivity to the Internet available only on a few computers	No Web based/online learning available at the campus No satellite based learning available at the campus No two-way interactive video distance learning capabilities available at the campus	Limited print/file sharing network at the campus Some shared resources available on the campus LAN	Shared use of resources such as, but not limited to, TVs, VCRs, digital cameras, scanners, classroom sets of programmable calculators
Between 5 and 9 students per Internet-connected multimedia computer Replacement cycle established by district/ campus is every 5 years	Direct connectivity to the Internet available at the campus in 50% of the rooms, including the library Adequate bandwidth to the campus to avoid most delays	Web based/online learning available at the campus Satellite based learning available at the campus No two-way interactive video distance learning capabilities available at the campus, but available in the district	Most rooms connected to the LAN/WAN with student access Minimum 10/100 Cat 5 **hubbed** network High-end servers, such as Novell or NT servers, serving **some** applications	One educator per computer as recommended by the *Long-Range Plan for Technology, 1996-2010* Shared use of resources such as TVs, VCRs, digital cameras, scanners, digital projectors, and analog video cameras; classroom sets of programmable calculators
Four or less students per Internet-connected multimedia computer Replacement cycle established by district/ campus is every 4 years	Direct connectivity to the Internet in **75%** of the rooms, including the library Adequate bandwidth to each classroom over the local area network (at least 10/100 MB LAN) to avoid most delays Easy access for students and teachers	Web based/online learning available at the campus Satellite based learning available at the campus Two-way interactive video distance learning capabilities available in **at least one classroom**	**All rooms** connected to the LAN/WAN with student access Minimum 10/100 Cat 5 **switched** network High-end servers, such as Novell or NT servers, serving **multiple** applications	One educator per computer as recommended by the *Long-Range Plan for Technology, 1996-2010* Dedicated and assigned use of commonly used technologies such as computers with projection devices, TVs, VCRs, programmable calculators assigned to each student, and telephones in each classroom **Shared use of specialized technologies** such as digital cameras, scanners, document cameras and projectors, and digital video cameras
In addition to 4 or less students per Internet-connected multimedia computer, on-demand access for every student as recommended by the *Long-Range Plan for Technology, 1996-2010* Replacement cycle established by district/ campus is 3 years or less	Direct connectivity to the Internet available in **all** rooms on all campuses Adequate bandwidth to each classroom over the local area network (at least 100 MB or fiber network LAN) Easy access for students and teachers including some wireless connectivity	Web based/online learning available at the campus Satellite based learning available at the campus Two-way interactive video distance learning capabilities available at the campus in **multiple** classrooms	All rooms connected to the WAN **sharing** multiple district-wide **resources** Campus is connected to **robust** WAN with **100** MB/ GB and/or fiber **switched network** that allows for resources such as, but not limited to, video streaming and desktop teleconferencing **Easy access** to network resources for students and teachers, **including** some wireless connectivity	One educator per computer as recommended by the *Long-Range Plan for Technology, 1996-2010* Fully equipped classrooms with all the technology that is available to enhance student instruction readily available including all the above as well as the use of new and **emerging** technologies

Glossary

Collaboratively Developed Technology Plan
Plan for the use of technology in a campus or district developed with active involvement of teachers, school staff, administrators, students, industry representatives, and other community representatives.

Collaborative Learning
An instructional strategy in which several students work together on an assignment, with individuals sharing responsibility for various tasks in an interactive process of ongoing dialogue.

Computer
Multimedia Internet accessible workstation.

Community of Inquiry
A group of persons who engage in ongoing dialogue about questions of shared interest or mutual concern, for the purpose of generating workable, productive solutions to meaningful problems, or an enhanced base of knowledge related to the common interest.

Digital Content
Digitized multimedia material that calls upon students to seek and manipulate information in collaborative, creative and engaging ways that make digital learning possible; includes video on demand, software, CD-ROMs, Web sites, E-mail, online learning management systems, computer simulations, streamed discussion, data files, databases and audio.

Easy Internet Access
Ready access to a computer connected to the Internet with a priority of student use in reasonable proximity.

Flexible Scheduling
A strategy for providing access to an educational resource that permits use as needed rather than on a predetermined structured schedule.

Integrated
The use of technology by students and teachers to enhance teaching and learning and to support existing curricular goals and objectives.

Local Funding
Funds derived from local budgets, bond elections, and other local initiatives.

State and Federal Funds
State funds such as, but not limited to, the Technology Allotment and TIF grants; federal funds such as, but not limited to, TIE, NCLB and E-Rate.

Supplement vs. Supplant
New funds used to supplement technology activities and not used to replace local, state or federal funds already in place.

Technology Allotment
All schools receive $30 per student per year for the purchase of technology to support the *Long-Range Plan for Technology, 1996-2010.*

Texas Library Connection (TLC)
A statewide technology initiative administered by the Texas Education Agency, provides current, relevant information resources to Texas school communities enrolled in the project.

TIF Grants
Funding provided by the Telecommunications Infrastructure Fund (TIF) as created in 1995 by House Bill 2128.

Standards

State Board for Educator Certification Standards for All Teachers

Standard I. All teachers use technology-related terms, concepts, data input strategies, and ethical practices to make informed decisions about current technologies and their applications.

Standard II. All teachers identify task requirements, apply search strategies, and use current technology to efficiently acquire, analyze, and evaluate a variety of electronic information.

Standard III. All teachers use task-appropriate tools to synthesize knowledge, create and modify solutions, and evaluate results in a way that supports the work of individuals and groups in problem-solving situations.

Standard IV. All teachers communicate information in different formats and for diverse audiences.

Standard V. All teachers know how to plan, organize, deliver, and evaluate instruction for all students that incorporates the effective use of current technology for teaching and integrating the Technology Applications Texas Essential Knowledge and Skills (TEKS) into the curriculum.

Stages of Professional Development (CEO Forum STaR Chart)

Entry/Adoption Stage. Educators move from the initial struggles to learn the basics of using technology to successful use of technology on a basic level (e.g., integration of drill and practice software into instruction).

Adaptation Stage. Educators move from basic use of technology to discovery of its potential for increased productivity (e.g., use of word processors for student writing, and research on the Internet).

Appropriation Stage. Having achieved complete mastery over the technology, educators use it effortlessly as a tool to accomplish a variety of instructional and management goals.

Invention Stage. Educators are prepared to develop entirely new learning environments that utilize technology as a flexible tool. Learning becomes more collaborative, interactive and customized.

National Staff Development Council Standards

Standard I. The teacher designs instruction appropriate for all students that reflects an understanding of relevant content and is based on continuous and appropriate assessment.

Standard II. The teacher creates a classroom environment of respect and rapport that fosters a positive climate for learning, equity, and excellence.

Standard III. The teacher promotes student learning by providing responsive instruction that makes use of effective communication techniques, instructional strategies that actively engage students in the learning process, and timely, high-quality feedback.

Standard IV. The teacher fulfills professional roles and responsibilities and adheres to legal and ethical requirements of the profession.

Related Web Sites

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

This site for Texas educators provides immediate information needed daily in schools. Keep it bookmarked also for quick links to Education Service Centers and the State Board for Educator Certification.

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

This site provides information on the *State of Texas Master Plan for Educational Technology 2000-2003*. This plan was developed under the provisions of Rider 74, House Bill 1, 76th Legislature to the Texas Education Agency.

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

The TIF site connects educators to grant programs available for Texas schools. An electronic curriculum for TIFTech Training is also located at this site.

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

Technology standards information at this site assists educators in planning for quality professional development programs. In addition, the State Board of Educator Certification provides information on certifications for all professional educators.

http://www.tcea.org

The Texas Computer Education Association supports educators in learning about technology and using it in the classroom. As the sponsor of the largest Texas conference focusing on educational technology, the organization provides online registration, program information, and student and teacher contest information.

http://www.iste.org

The International Society for Technology in Education provides major resources for educators who strive to integrate technology, teaching, and learning. Standards are available for both students and teachers at this site. The ISTE professional journals detail excellent examples of the integration of technology into the curriculum. Both individual and district memberships are available.

http://ceoforum.org

The CEO Forum provides reports on the status of educational technology in the United States in the areas of infrastructure, professional development, digital content, and accountability. The K-12 STaR Chart, a Web based tool, allows both districts and campuses to self-assess components of a total technology program.

http://www.cosn.org

The Consortium for School Networking promotes the use of telecommunications to improve K-12 learning. Taking TCO to the Classroom, is just one of their superior vendor neutral resources for schools.

http://www.nsdc.org

The National Staff Development Council gives districts information not only on high quality training programs with intensive follow-up and support, but also other growth-promoting processes such as study groups, action research, and peer coaching. NSDC, as an organization, believes that staff development is fundamentally people improvement. The library offers excellent full-text professional articles.

http://tasanet.org/depserv/profdev/Tech_leadership_academy.html

The Texas Association of School Administrators with Texas Tech University, the Texas Business and Education Coalition (TBEC), and Texas Computer Education Association will train approximately 50 percent of all Texas superintendents and principals during the three-year period beginning in the 2000-2001 school year. The project is funded through the Bill and Melinda Gates Foundation.

http://www.ncrel.org

The North Central Regional Educational Laboratory helps schools and students reach their full potential as it specializes in educational applications of technology to improve learning. Many resources are located at this site.

http://www.mff.org/edtech

The Milken Family Foundation site provides professional development information as well as high school science inquiry-based learning programs, best practices for middle schools, and reading programs proven to be effective. Their Seven Dimensions for Gauging Progress guides educators in assessing whether or not their schools provide the conditions necessary for improving student learning with technology.

http://www.ed.gov/offices/OERI/ORAD/LTD/newtech_progs.html

These exemplary and promising educational technology programs may help districts create quality, effective, and useful projects within their communities.

Educational Technology Advisory Committee
2001 - 2003

Authority

The Educational Technology Advisory Committee, ETAC, is authorized by the Texas Education Code, 7.055.11. The function of the Educational Technology Advisory Committee is to work in an advisory capacity to increase the equity, efficiency, and effectiveness of student learning, instructional management, staff development, and administration. The efforts of this committee will be in the development, implementation and evaluation of technology guidelines to provide districts with the tools for self-assessment to aid in the effective integration of technology across the curriculum. The committee will bring collective information from across the state and nation to assist in the identification of the needs and future directions of educational technology related to appropriate use of technology, technology proficiencies for teachers, staff development needs for preservice and in-service teachers, and digital content needs.

Charge to the Educational Technology Advisory Committee 2001-2003

Conduct midpoint review and adjustment of the *Long-Range Plan for Technology, 1996-2010* to ensure recommendations remain appropriate, determine if new recommendations are warranted, and create benchmarks or indicators that will let us know where we are as a state and as individual schools and districts in achieving the targets addressed in the LRPT.

Timeline

Fall 1999

Committee selected and approved
First meeting held December 9, 1999
Received and clarified committee charge

Spring of 2000

Formed sub-committees based on
Long-Range Plan for Technology, 1996-2010
Researched existing tools and resources and developed criteria and questions to be answered

Summer of 2000

Developed rubric with measurement and scale

Fall 2000

Developed draft of *Texas STaR Chart*
Piloted the assessment tool with select group
Recommended refinements

Spring 2001

Released draft of *Texas STaR Chart* for field testing by various stakeholders
Obtained input from stakeholders
Refined survey
Released online *Texas STaR Chart* version for field test

Fall 2001

Implemented *Texas STaR Chart*

Spring 2002

Released first report

Fall 2002

Include statewide results in the
Progress Report on the Long-Range Plan for Technology, 1996-2010 to the 78th Texas Legislature
Release Campus *Texas STaR Chart*

Texas STaR Chart Summary

Using the Texas STaR Chart, select the cells in each category that best describe your campus.
Enter the corresponding number in the chart below using this scale.

1 = Early Tech **2 = Developing Tech** **3 = Advanced Tech** **4 = Target Tech**

Key Area I: Teaching and Learning

A. Teacher Role and Collaborative Learning	B. Patterns of Teacher Use	C. Frequency/ Design of Instructional Setting	D. Curriculum Areas	E. Technology Applications TEKS/ Assessment	F. Patterns of Student Use	*Total

Key Area II: Educator Preparation and Development

G. Content of Training	H. Capabilities of Educators	I. Leadership and Capabilities of Administrators	J. Models of Professional Development	K. Levels of Understanding and Patterns of Use	L. Technology Budget for Technology Professional Development	*Total

Key Area III: Administration and Support Services

M. Vision and Planning	N. Technical Support	O. Instructional and Administrative Staffing	P. Budget	Q. Funding	*Total

Key Area IV: Infrastructure for Technology

R. Students per Computer	S. Internet Access/ Connectivity/ Speed	T. Distance Learning	U. LAN/WAN	V. Other Technologies	*Total

Key Area Summary

Copy your Key Area totals into the first column below and use the Key Area Rating Range to indicate the Key Area rating for each category.

Key Area	*Key Area Total			Key Area STaR Classification
I. Teaching and Learning	_____			_____
(6 - 8 Early Tech	9 - 14 Developing Tech	15 - 20 Advanced Tech	21-24 Target Tech)	
II. Educator Preparation and Development	_____			_____
(6 - 8 Early Tech	9 - 14 Developing Tech	15 - 20 Advanced Tech	21-24 Target Tech)	
III. Administration and Support Services	_____			_____
(5 - 7 Early Tech	8 - 12 Developing Tech	13 - 17 Advanced Tech	18 - 20 Target Tech)	
IV. Infrastructure for Technology	_____			_____
(5 - 7 Early Tech	8 - 12 Developing Tech	13 - 17 Advanced Tech	18 - 20 Target Tech)	

Campus Name: _____ County/Campus Number: _____

School Year: _____ Data Completion Date: _____

Completed by: _____ Email: _____

Please go to the online Texas STaR Chart Assessment (www.tea.state.tx.us/technology/etac/campus_txstar) to enter your results and print summary and graphs. Statewide aggregated data will be available in Spring 2003.

Educational Technology Advisory Committee

Texas Education Agency

Educational Technology Division

1701 North Congress Avenue

Austin, TX 78701

512.463.9400

512.463.9090 fax

etac@tea.state.tx.us

Educational Technology Division

Anita Givens	Nancy Little
Senior Director	ETAC Coordinator

Additional information on the Educational Technology Advisory Committee is available on the World Wide Web at www.tea.state.tx.us/technology/etac

Compliance Statement

TITLE VI, CIVIL RIGHTS ACT OF 1964; THE MODIFIED COURT ORDER, CIVIL ACTION 5281, FEDERAL DISTRICT COURT, EASTERN DISTRICT OF TEXAS, TYLER DIVISION

Reviews of local education agencies pertaining to compliance with Title VI Civil Rights Act of 1964 and with specific requirements of the Modified Court Order, Civil Action No. 5281, Federal District Court, Eastern District of Texas, Tyler Division are conducted periodically by staff representatives of the Texas Education Agency. These reviews cover at least the following policies and practices:

(1) acceptance policies on student transfers from other school districts;

(2) operation of school bus routes or runs on a nonsegregated basis;

(3) nondiscrimination in extracurricular activities and the use of school facilities;

(4) nondiscriminatory practices in the hiring, assigning, promoting, paying, demoting, reassigning, or dismissing of faculty and staff members who work with children;

(5) enrollment and assignment of students without discrimination on the basis of race, color, or national origin;

(6) nondiscriminatory practices relating to the use of a student's first language; and

(7) evidence of published procedures for hearing complaints and grievances.

In addition to conducting reviews, the Texas Education Agency staff representatives check complaints of discrimination made by a citizen or citizens residing in a school district where it is alleged discriminatory practices have occurred or are occurring.

Where a violation of Title VI of the Civil Rights Act is found, the findings are reported to the Office for Civil Rights, U.S. Department of Education.

If there is a direct violation of the Court Order in Civil Action No. 5281 that cannot be cleared through negotiation, the sanctions required by the Court Order are applied.

TITLE VII, CIVIL RIGHTS ACT OF 1964 AS AMENDED BY THE EQUAL EMPLOYMENT OPPORTUNITY ACT OF 1972; EXECUTIVE ORDERS 11246 AND 11375; EQUAL PAY ACT OF 1964; TITLE IX, EDUCATION AMENDMENTS; REHABILITATION ACT OF 1973 AS AMENDED; 1974 AMENDMENTS TO THE WAGE-HOUR LAW EXPANDING THE AGE DISCRIMINATION IN EMPLOYMENT ACT OF 1967; VIETNAM ERA VETERANS READJUSTMENT ASSISTANCE ACT OF 1972 AS AMENDED; IMMIGRATION REFORM AND CONTROL ACT OF 1986; AMERICANS WITH DISABILITIES ACT OF 1990; AND THE CIVIL RIGHTS ACT OF 1991.

The Texas Education Agency shall comply fully with the nondiscrimination provisions of all federal and state laws, rules, and regulations by assuring that no person shall be excluded from consideration for recruitment, selection, appointment, training, promotion, retention, or any other personnel action, or be denied any benefits or participation in any educational programs or activities which it operates on the grounds of race, religion, color, national origin, sex, disability, age, or veteran status (except where age, sex, or disability constitutes a bona fide occupational qualification necessary to proper and efficient administration). The Texas Education Agency is an Equal Employment Opportunity/Affirmative Action employer.

TEA Publication Order Form

Date _____

Remitter Name _____

Send to (name, if different) _____

Address _____

_____

City State ZIP

To place an order for a publication, fill out the information below and make check or money order payable to: Texas Education Agency
Price includes postage, handling, and state tax.

Quantity	Title of documents requested	Publication No.	Cost	TOTAL
_____	*Progress Report on the State of Texas Master Plan for Educational Technology 2000-2003*	GE03 214 02	@ $11.00 ea.	$ _____

FOR TAX EXEMPT ORDERS ONLY

Make check or money order payable to: Texas Education Agency
Price includes postage and handling only.
Purchase orders are accepted only from Texas educational institutions and government agencies.

Quantity	Title of documents requested	Publication No.	Cost	TOTAL
_____	*Progress Report on the State of Texas Master Plan for Educational Technology 2000-2003*	GE03 214 02	@ $10.00 ea.	$ _____

IF YOU ARE MAILING A *PURCHASE ORDER OR NEED INFORMATION, SEND TO:

Texas Education Agency
Publications Distribution
1701 North Congress Avenue
Austin, Texas 78701-1494

*Purchase orders are accepted only from Texas educational institutions and government agencies.

IF YOU ARE MAILING A CHECK OR MONEY ORDER, REMIT THIS FORM WITH PAYMENT TO:

Texas Education Agency
Publications Distribution
P.O. Box 13817
Austin, Texas 78711-3817

Make check or money order payable to
Texas Education Agency

Developed by the Educational Technology Coordinating Council

GEO3 214 02

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

REPRODUCTION RELEASE

(Specific Document)

NOTE: Two Copies are provided
TEA Publication No. GE03 214 02

I. DOCUMENT IDENTIFICATION:

Title: Progress Report on the State of Texas Master Plan for Educational Technology, 2000-2003	
Author(s): Use corporate entry	
Corporate Source: Texas Education Agency–Austin*	Publication Date: 12-02

II. REPRODUCTION RELEASE:

*This is the State Department of Education for Texas. Please use this corporate entry without personal author.

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE), are usually made available to users in microfiche, reproduced 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 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 Sample TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) 1	PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE, AND IN ELECTRONIC MEDIA FOR ERIC COLLECTION SUBSCRIBERS ONLY, HAS BEEN GRANTED BY Sample TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) 2A	PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY Sample TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) 2B
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.

Sign here,→ Signature: Linda Kemp	Printed Name/Position/Title: Linda Kemp, Librarian	
Organization/Address: Texas Education Agency 1701 N. Congress Avenue, Austin, TX 78701-1494	Telephone: (512) 463/9050 E-Mail Address: lkemp@[redacted].tea.state.tx.us	FAX: (512) 475-3447 Date: 3-13-03

Document sent to ERIC Processing and Reference Facility unless so noted. Lanham MD

III. DOCUMENT AVAILABILITY INFORMATION (FROM NON-ERIC SOURCE):

If permission to reproduce is not granted to ERIC, or, if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents that cannot be made available through EDRS.)

Publisher/Distributor:
Address:
Price:

IV. REFERRAL OF ERIC TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER:

If the right to grant this reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

Name:
Address:

V. WHERE TO SEND THIS FORM:

Send this form to the following ERIC Clearinghouse:

However, if solicited by the ERIC Facility, or if making an unsolicited contribution to ERIC, return this form (and the document being contributed) to:

ERIC Processing and Reference Facility
1100 West Street, 2nd Floor
Laurel, Maryland 20707-3598
Lanham MD
Telephone: 301-497-4080
Toll Free: 800-799-3742
FAX: 301-953-0263
e-mail: ericfac@inet.ed.gov
WWW: http://ericfac.piccard.csc.com