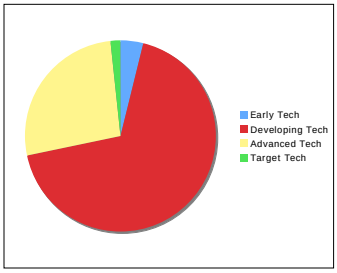
Progress in Teaching and Learning

The teaching and learning environment has changed with the use of new interactive technology and distance learning tools, and the many innovative teaching strategies that expand learning in and outside the classroom. In addition, the movement to prepare students with critical 21st Century Skills has resulted in a new emphasis on what students need to know and be able to do to thrive in these times. The use of technology has supported teaching and learning in each curriculum area by bringing a multitude of learning experiences to entice student interest and build understanding, proficiency, application, and confidence.

Through the implementation of the Technology Applications curriculum and the adopted instructional materials, technology has increasingly become an integral part of the way that teachers teach and students learn. State and federal requirements for technology literacy and curriculum integration have led to a new emphasis on gaining these valuable knowledge and skills and monitoring progress in meeting targeted levels of proficiency. With the growing availability of digital content, the range of existing resources continues to expand. Distance learning has proven to be a powerful tool for ensuring that students across the state have equitable access to quality education and instruction regardless of the school's wealth, size, socioeconomic status, or geographic location. In particular, online learning has provided many opportunities for educators and students to have access to current research and valuable instructional resources.

The Teaching and Learning section of the Long-Range Plan for Technology focuses on how technology can impact student achievement by providing necessary tools and resources for administrators, teachers, librarians, and students. This progress report provides the status of the recommendations and actions in teaching and learning from 2004-2006. The actions and recommendations cover a variety of topics including: technology literacy and integration; digital content and instructional materials; school library programs; and distance learning.

2005-2006 Texas Campus STaR Chart
Teaching and Learning



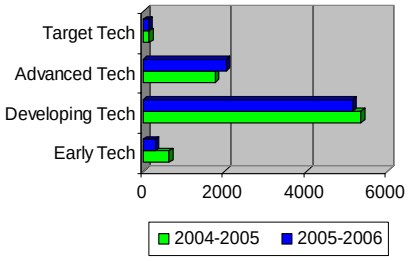
Early Tech 3.9%
293 Campuses
Instruction is teacher-centered and students occasionally use software applications and/or use tutorial software for drill and practice; no technology integration occurs in the foundation subject area TEKS; some K-8 Tech Apps TEKS are met; high schools offer at least 4 Tech Apps courses.

Developing Tech 67.7%
5,144 Campuses
Instruction is teacher–directed and students regularly use technology on an individual basis to access electronic information and develop communication and presentation projects; minimal use of technology in foundation TEKS; most Tech Apps TEKS are met K-8; high school campuses teach at least 2 Tech Apps courses.

Advanced Tech 26.7%
2,029 Campuses
Instruction is teacher-facilitated; students work with peers and experts to evaluate information, analyze data and content in order to problem solve; technology is integrated into foundation area TEKS; activities are separated by subject and grade; all Tech Apps TEKS are met K-8; high school campuses offer and teach at least 4 Tech Apps courses.

Target Tech 1.8%
136 Campuses
The teacher serves as facilitator, mentor, and co-learner; students have on-demand access to all appropriate technologies to complete activities that have been seamlessly integrated into all core content areas; all Tech Apps TEKS are met K-8; high school campuses offer all Tech Apps courses and teach at least 4 courses.

2004-2005 and 2005-2006 Teaching and Learning Campus STaR Chart Data



The graph above represents the Campus data in the Teaching and Learning key area of the Campus STaR Chart for years 2004-2005 and 2005-2006. This graph shows that more Campuses reported Early Tech and Developing Tech in the teaching and learning areas of the Campus STaR Chart in 2004-2005. The campuses reported a larger number of Advanced Tech in the Teaching and Learning area in 2005-2006 which indicates a growth in Teaching and Learning from 2004-2005 to 2005-2006.

State of the State

Texas schools have made progress in meeting the recommendations in the Teaching and Learning area of the *Long-Range Plan for Technology, 1996-2010.* To assist schools in documenting their progress, two planning tools, the Texas Campus School Technology and Readiness (STaR) Chart and the Teacher STaR Chart were developed. These tools also give the state a snapshot of where schools are in meeting the goals of the Long-Range Plan for Technology.

In addition to the wide use of the Campus and Teacher STaR Charts to help measure progress in the use of technology in Texas schools, a federal effort through No Child Left Behind (NCLB), Title II, Part D has impacted how schools implement educational technology. There are technology literacy and integration requirements for all students and educators.

History of Technology Literacy

The importance of technology literacy is quite evident. The Texas legislature directed the State Board of Education (SBOE) to develop a long-range plan for fostering computer literacy among public school students so that by the year 2000 each high school graduate in this state has computer-related skills that meet standards adopted by the board. In 1984, the Advanced High School Program had a one-credit computer science requirement (19 TAC §75.152). In 1985 the SBOE established essential elements for Computer Literacy and Computer Science (19 TAC Chapter 75). Technology Applications was designated as a required enrichment curriculum (TEC, §28.002) in 1995. The computer science/computing proficiency requirement was included in the Recommended and Distinguished Achievement high school graduation plans. In 1996, the SBOE adopted 19 TAC Chapter 74, Subchapter A, Required Curriculum, that included the Technology Applications curriculum. Subchapter B, Graduation Requirements, included a Technology Applications credit for all graduation plans. Texas Essential Knowledge and Skills (TEKS) for Technology Applications, Grades K-12 (19 TAC Chapter 126) were adopted in 1997 and became effective September 1, 1998. The SBOE adopted amendments to 19 TAC Chapter 74, Curriculum Requirements, to include all the newly adopted Technology Applications courses developed with the TEKS for graduation credit for all plans beginning the 1997-1998 school year. In addition, several courses in Career and Technology Education satisfy the credit.

Technology Applications TEKS

The Technology Applications TEKS focus on the teaching, learning, and integration of digital technology knowledge and skills across the curriculum, especially in the core curriculum areas, to support learning and promote student achievement. Digital technology refers to the use of computers and related technologies, such as handheld digital devices, digital cameras and recorders, and probes. The Technology Applications TEKS provide a vertical look at the student expectations from kindergarten through grade twelve. Changes in state legislation and State Board of Education rules have escalated the importance of the teaching and learning of Technology Applications TEKS. The TEKS are "required" rather than "guidelines" as in the past.

In addition to the Technology Applications TEKS, there are technology-related student expectations in the TEKS for each subject area. There are also pre-Kindergarten guidelines for Technology Applications.

Federal Requirements in Alignment with Long-Range Plan

Current federal legislation supports the need for technology literacy and is in alignment with the vision and recommendations in the Long-Range Plan for Technology. The requirement for being technology literate by the end of eighth grade is now a federal requirement in No Child Left Behind, Title II, Part D.

Technology literacy is defined as the ability to responsibly use appropriate technology to communicate, solve problems, and access, manage, integrate, evaluate, and create information to improve learning in all subject areas and to acquire lifelong knowledge and skills in the 21st Century. The Technology Applications TEKS for grades 6-8 are used to specify expectations for the technology literate student. It is important to have a strong progression of technology knowledge and skills beginning in pre-kindergarten to build to this eighth grade benchmark. Students should demonstrate proficiency with the Technology Applications TEKS before they exit the benchmark grades of 2, 5, and 8. These proficiencies are applied across the curriculum in grades 9-12.

DESCRIPTIONS OF TECHNOLOGY APPLICATIONS STRANDS FOR GRADES K-12

I. TECHNOLOGY FOUNDATIONS:
Through the study of technology applications foundations, including technology-related terms, concepts, and data input strategies, students learn to make informed decisions about technologies and their applications.

II. INFORMATION ACQUISITION:
The efficient acquisition of information includes the identification of task requirements; the planning for the use of search strategies; and the use of technology to access, analyze, and evaluate the acquired information.

III. WORK IN SOLVING PROBLEMS:
By using technology as a tool that supports the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create a solution, and evaluate the results.

IV. COMMUNICATION:

Students communicate information in different formats and to diverse audiences. A variety of technologies will be used. Students will analyze and evaluate the results.

No Child Left Behind
Title II, Part D

Goal: Technology Literacy

To assist every student in crossing the digital divide by ensuring that every student is technology literate by the time the student finishes the eighth grade, regardless of the student's race, ethnicity, gender, family income, geographic location, or disability.

Goal: Curriculum Integration

…ensure ongoing integration of technology into school curricula and instructional strategies in all schools in the State, so that technology will be fully integrated into the curricula and instruction of the schools by December 31, 2006.

Another requirement in NCLB, in alignment with the state's Long-Range Plan, focuses on fully integrating technology into the curricula and instruction of schools by December 31, 2006. This requirement is important to Texas schools because it sets a target for schools and assigns a date for full integration. While schools have worked to meet recommendations in the Long-Range Plan for many years, this date provides a target for schools to evaluate and document their progress. In addition to the references to the use of digital technology in all required curriculum in Texas, the Technology Applications TEKS are used to identify expectations for students at grades K-12.

The high school courses offer opportunities for in-depth study of technology and prepare students for higher education. Chapter 74, Curriculum Requirements specify that districts must offer at least four of the Technology Applications courses.

Connecting High School Technology Applications Courses and Foundation Curriculum Courses

Students can learn advanced Technology Applications knowledge and skills in the context of the academic curriculum areas. For example, students learn:

- Desktop Publishing knowledge and skills in the context of English language arts as they develop a school newspaper or yearbook;
- Digital Graphics/Animation knowledge and skills as they bring physics and other scientific concepts and principles to life;
- Multimedia or Web Mastering knowledge and skills through the context of world geography, where students use the technology to examine people, places, and environments at local, regional, national, and international levels; and
- Video Technology knowledge and skills in the context of mathematics as they develop video lessons teaching mathematics concepts to classmates and/or students in younger grades.

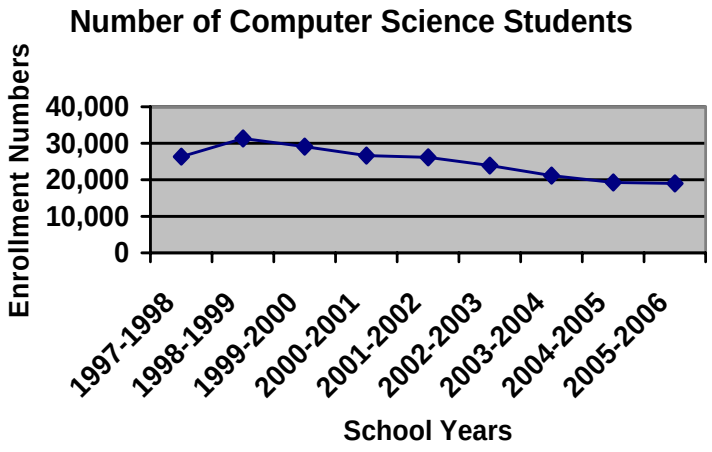
Many Technology Applications teachers are certified in the curriculum areas of mathematics, science, social studies, and English language arts as well as in fine arts.

The chart on the right provides data on the progress schools are making in implementing the Technology Applications curriculum for grades K-12. While the majority of schools are at the Developing Tech level during the 2005-2006 school year, they continue to focus on fully implementing the curriculum, including offering a variety of Technology Applications courses at the high school level.

For the 2004-2005 and 2005-2006 school years, enrollment has been highest in the Web Mastering course, followed by Computer Science I and II, Desktop Publishing, Digital Graphics/Animation, Multimedia, Video Technology, and Independent Study in Technology Applications.

In many schools, the Web Mastering course has become an avenue for development and maintenance of district and/or campus websites and has given students opportunities to work with classroom teachers to develop content-rich websites that can be used to support teaching and learning in the core curriculum areas.

While Computer Science courses have a large number of students, their enrollment has continued to decrease each year. When Computer Science peaked in 1998-1999, the course enrollment was 31,320 students. During the 2005-2006 school year, the enrollment was 18,994. There are several reasons for this drop, including the addition of Technology Applications courses that gave students new course options, fewer teachers pursuing the Computer Science area, and fewer schools offering the Computer Science course due to limited funding.



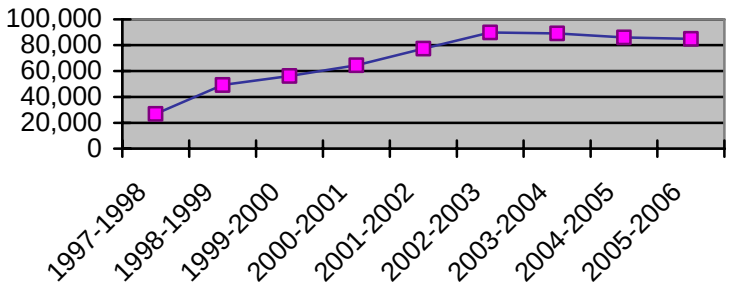
NOTE: Computer Science includes: Computer Science I, AP Computer Science I, IB Computer Science I, Computer Science II, AP Computer Science II, and IB Computer Science II.

Texas Campus STaR Chart Data for Column E, Technology Applications TEKS Assessment 2005-2006	
Early Tech *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.	773
Developing Tech *Campuses that serve grades K-8*: Within each grade level cluster, **most** Technology Applications TEKS are met. *High School Campuses*: At least 4 Technology Applications courses offered and at least 2 are taught.	5,181
Advanced Tech *Campuses that serve grades K-8*: Within each grade level cluster, **all** Technology Applications TEKS are met. *High School Campuses*: At least 4 Technology Applications courses offered and at least 4 are taught.	1,447
Target Tech *Campuses that serve grades K-8*: Within each grade level cluster, **all** Technology Applications TEKS are met and grade-level benchmarks are established. *High School Campuses*: At least 4 Technology Applications courses offered and at least 4 are taught or included as new courses developed as local elective or included as independent study course.	201

High school video technology student showcasing her skills at the 2005 Capitol Schoolhouse

There are multiple avenues for providing instruction in the Technology Applications courses including distance learning and dual credit/concurrent enrollment. All high school graduates are required to have one Technology Applications graduation credit under all graduation plans. Providing instruction in these courses is important in making connections with foundation content and bringing to life academic concepts through advanced technology applications. For the 2005-2006 school year, there were 84,898 students enrolled.

Number of Students Enrolled in Technology Applications High School Courses



Source: PEIMS Data

Feedback from schools indicates that the decrease in number of students over the past few years is due to the reduction in state and federal funding supporting the courses including the Telecommunications Infrastructure Fund (TIF). Non-competitive TIF grants funded the infrastructure needed to provide instruction in the Technology Applications courses for many districts across the state.

These courses are important for students to take so that they can be prepared for higher education or the workplace. The connections with these courses and the core curriculum areas support academic achievement in all areas. In addition, many schools share that due to these courses, students come early to school, do not want to leave to go home, and have an added purpose for attending school.

Technology Applications Teacher Network

Since 2002, TEA has funded the Technology Applications Teacher Network through NCLB, Title II, Part D. This web-based project provides resources for implementing the Technology Applications TEKS and for addressing the technology literacy and integration requirements for students and teachers outlined in NCLB. Web resources including lessons from annual best practices events as well as professional development opportunities through ESCs are posted at the website: www.techappsnetwork.org.

"The adoption and implementation of the Technology Applications instructional materials have allowed my district to modernize our K-8 instruction. Today I can guarantee every student at every grade can master the Tech Apps TEKS for their grade level."
Technology Director

Adopted Technology Applications Instructional Materials

To assist students and teachers in becoming technology literate and integrating technology into the curriculum, new subscription-based instructional materials in Technology Applications were made available to all Texas students at grades K-8 and students enrolled in high school courses. These materials focus on helping students and teachers use digital technology to access, analyze, and evaluate information; work to solve problems; and communicate in the 21st Century—ultimately leading to improved learning in English language arts and reading, mathematics, science, and social studies. The materials are intended to be used in each classroom for grades K-8 as well as in specialized Technology Applications classes at grades K-8. In addition, there are instructional materials for the Technology Applications courses at the high school level. The adopted materials for Technology Applications are organized by grade clusters: K-2, 3-5, 6-8, and 9-12. They are available in a variety of formats (online, CD-ROM, print, and a combination of these).

History of Digital Content and Electronic Instructional Materials

Digital content has been in the spotlight for years and Texas schools have been bringing more and more digital content to the classroom. The state textbook adoption process has been changed to encourage the submission of electronic instructional materials beginning in 1987 when the definition of a textbook was amended to include computer software. Texas led the nation in 1990 when the SBOE adopted the first Electronic Instructional Media System (EIMS) with "Windows On Science", a video-based elementary science program from Optical Data. Here is a brief timeline regarding those activities:

"Windows on Science", first-ever EIMS adopted in 1990

1987–The Texas Legislature amended the definition of a textbook to include "computer software"

1988–The SBOE adopted the *Long Range Plan for Technology, 1988-2000*, which encouraged modification to textbook laws, processes and procedures to support the adoption and electronic delivery of an Electronic Instructional Media System (EIMS).

1990–The SBOE adopted the first-ever EIMS with "Windows on Science", a videodisc-based elementary science program from Optical Data.

1991–Texas became the first state in the nation to require that textbook publishers provide state-adopted textbook content in standardized computer files for automated conversion into Braille textbooks required by students who are Braille readers.

1992–The SBOE adopted EIMS for computer literacy as well as seventh grade science and chemistry; additional changes were made to textbook rules and procedures to encourage EIMS.

1995–The Texas Legislature expanded the 1991 statute on publisher textbook computer files for automated Braille production to include other versions of textbooks to be used by students with disabilities.

2001–Texas issued a proclamation for instructional materials for K-12 Technology Applications with an emphasis on electronic delivery. The SBOE created a subscription-based pricing model to encourage submission of online content.

2002–The SBOE adopted instructional materials that included CD-ROM and web-based versions in content areas such as language arts and social studies.

2002–For the first time, the SBOE included voluntary accessibility standards for electronic textbooks in a textbook Proclamation 2002 so that students with visual impairments and other disabilities would be able to fully access these materials.

2004–The SBOE adopted instructional materials for Technology Applications that included many online and computer-based products and used the subscription-based pricing model for the first time.

2006–Materials submitted for secondary mathematics under Proclamation 2004 included many online and electronic materials for students and teachers. The SBOE revised Chapter 66 rules regarding instructional materials to facilitate the revision, update and substitution of materials to ensure currency of information and encourage technology components.

Electronic Components

Of the more than 2,100 instructional materials that are currently adopted, 541 contain at least one electronic component. Of these, 109 are online instructional materials.

Subscription-based instructional materials for Technology Applications are available for all students at grades K-8 and for students enrolled in Technology Applications courses per 19 TAC Chapter 126 at the high school level. Subscription-based instructional materials are those materials adopted in November 2004 under Technology Applications for which the state is paying publishers a yearly subscription. These materials first became available to schools for the 2005-2006 school year.

School Library Programs Supporting Technology Literacy and Integration

School Library Services

With the focus on ensuring that 21st Century students and educators have 21st Century resources and information, the library continues to play a critical role in Texas public schools. Public school library programs build the capacity of Texas schools and support learning, especially in the core curriculum areas, enabling 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. Library media specialists collaborate with teachers and work with students to develop information literacy and digital technology literacy (Technology Applications) knowledge and skills. These knowledge and skills strengthen student achievement in English language arts and reading, mathematics, social studies, and science. The role of the library media specialist has expanded to include utilization of the following resources: library books, reference resources, online databases, Internet connectivity for computers, multimedia, and information in all formats, electronic as well as print.

Librarians and libraries play a critical role in helping students gain information literacy skills.

Library Skills

- collecting and retrieving information through a variety of search strategies;
- interpreting, summarizing, comparing, and contrasting information;
- making judgments about the quality, relevance, usefulness, or efficiency of the information; and
- adapting, applying, designing, inventing, and authoring new information.

The Six Major Components of School Library Standards

STANDARD I: Learner-centered teaching and learning

STANDARD II: Learner-centered program leadership and management

STANDARD III: Learner-centered technology and information access

STANDARD IV: Learner-centered library environment

STANDARD V: Learner-centered connections to the community

STANDARD VI: Learner-centered information science and librarianship

Library programs across the state have assisted students in the acquisition of foundation curriculum area TEKS. They have been instrumental in supporting the acquisition of information literacy and Technology Applications standards. Library media personnel have taken the lead in assisting educators and students in meeting targets for technology literacy and integration. In this information age, they have helped students and educators gain critical skills such as those listed in the column on the previous page.

These are all critical skills for students and educators. With the requirements and focus on technology literacy and integration of technology across the curriculum, school library programs have been instrumental in assisting schools in making progress and impacting teaching and learning. The TEA Division of Curriculum and Division of Instructional Materials and Educational Technology support the efforts of school libraries and library media specialists as they facilitate the integration of all curriculum TEKS, including the Technology Applications TEKS, into collaborative teaching and learning opportunities for Texas students and teachers.

School Library Programs: Standards and Guidelines for Texas

A major accomplishment during the reporting period of this progress report was the adoption of the *School Library Programs: Standards and Guidelines for Texas*. The guidelines were adopted on May 16, 2005, by the Texas State Library and Archives Commission in consultation with the SBOE. They provide direction for Texas public and charter schools' library programs. A school district shall consider the standards in developing, implementing, or expanding library services. It is highly recommended that schools use these standards in building strong, efficient library programs that will meet the needs of Texas students and educators. For additional information, visit: www.tsl.state.tx.us/ld/schoollibs/sls/index.html

Library Resources

From 1995 through 2003, the Texas Library Connection (TLC), administered by TEA, provided students, educators, and parents access to online full-text databases at no charge to schools. The TLC databases included electronic magazines, reference materials, newspapers, maps, encyclopedias, and a catalog of over 5,000 school library holdings including over 50 million items. These databases were accessible twenty-four hours a day, seven days a week no matter the size of the school, geographic location, or economic status. The databases were accessible from the classroom, the school library, and from the students and educators' homes. Students learned how to access and use these online databases as needed for classroom research projects and were provided instructions including identification and passwords to access the resources from their homes. Parents could utilize the resources for their own information needs.

TLC was a statewide educational technology initiative developed in support of the *Long-Range Plan for Technology, 1996-2010.* This initiative was authorized by Senate Bill 5, Rider 61, 73rd Legislature. Due to budget shortfalls in the 78th Legislative Session, TLC was not funded. After August 31, 2003, the full-text TLC databases (magazines, reference materials, newspapers, maps, and encyclopedias) were no longer provided to Texas schools by the state. Schools could purchase resources through various options including several ESC purchase programs and K-12 TexShare.

Because TEA owns the data in the TLC Union Catalog (catalog of over 5,000 school library holdings) and because of its use in public school libraries across the state, TEA authorized a license agreement to make the data available through a cost-recovery model to Texas public and charter schools. Auto-Graphics began offering the catalog through cost recovery in February 2004. The TLC Union Catalog allows students and educators access to over 50 million items including books, software, and videos. As part of this agreement, Auto-Graphics announced the availability of Texas SchoolCAT, a special subscription package that specifically addresses the needs of those schools that are looking for a "cataloging only" software package.

The Texas Library Connection provided access to over 50 million items, including books, periodicals, software, and videos.

As of February 2003, TLC served:

- 4,101,278 students, teachers and librarians at 5,944 campuses; and
- 1,052 Texas Independent School Districts and Charter Schools.

The SchoolCAT initiative is the largest K-12 physical union database in North America. It has grown over time and is currently composed of some 4 million bibliographic titles representing over 62 million unique pieces of material from over 5 thousand K-12 schools throughout Texas. The system provides K-12 librarians with the ability to locate quality bibliographic cataloging and download "copy catalog" material for use within their local library automation systems with a few simple steps. This allows the librarian to minimize time updating automation systems and expand the time with students using the school library. Further, it allows the user to compare material from other schools and districts with their own collection, which provides the school librarian with an immediate method to develop their collection.

While SchoolCAT provides a member with a library cataloging tool, since the program was moved from a TEA funded project to a fee-based model, many thousands of schools throughout the state lack access to this resource. Additionally, the ability to conduct research via the statewide portal, AGent Search, was also discontinued due to price point issues with the fee-based model. The "library with no walls' concept adopted in 1995 via the resource-sharing module also has been discontinued which limits a school to only its local collection—not 62 million items stored across the state.

Distance learning addresses equitable access to courses and teacher shortages.

Distance Learning

Distance learning is a powerful tool in the array of effective strategies for helping the state's public education system meet its core mission*: "…to ensure that all Texas children have access to a quality education that enables them to achieve their potential and fully participate now and in the future in the social, economic, and educational opportunities of our state and nation…"*

Distance learning is also an effective strategy to ensure that all students have access to the courses they need and to address critical public education challenges such as the need to increase the graduation rate and student readiness for success in college and other post-secondary pursuits, high school redesign, and critical teacher shortages. Accessible to Texas students through satellite, two-way interactive videoconferencing, the Internet, and through a blending of multiple technologies, distance learning helps students across the state have equitable access to quality education and instruction regardless of the district's wealth or geographic location.

Distance learning enables schools of all sizes and of all economic means and from all corners of the state to overcome the potential limitations of their local resources.

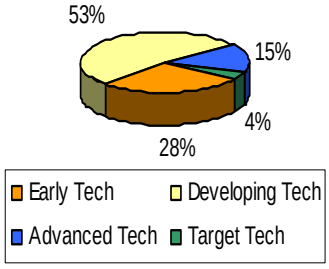
Distance learning can, most simply, be defined as an educational process in which the teacher and student are in different locations. Correspondence courses, which are still in use, are the most basic example of distance learning and served as the predecessor to what we currently refer to as distance learning courses. Emerging new technologies, which have been embraced by the public education system, have made this evolution from correspondence courses to distance learning possible. The defining difference between correspondence courses and distance learning courses, as well as between computer-aided instruction and distance learning, is the ongoing interaction that is possible between student and teacher. Technology enables the robust interaction that characterizes effective distance learning. It is the power of this interaction between student and teacher and among students, made possible through the use of technology, which makes distance learning so effective.

A Department of Education study released in 2005 shows that approximately 36% of school districts, nationally, have students enrolled in distance learning. Of those, 55%—made up mostly of small districts—use videoconferencing. Mid-size (60%) and larger districts (72%) are primarily delivering distance learning through online courses. As a result, nationally, the majority of students taking distance-learning courses are receiving instruction through online courses (Watson, *Keeping Pace with K-12 Online Learning*, 2005). Within the state of Texas and nationally, distance learning continues to grow as a way to provide expanded course options and additional scheduling flexibility. The Department of Education study also indicates that, of the districts that currently offer distance courses, about 72% plan to expand their course offerings (Selected Findings, National Center for Education Statistics, 2002-2003).

Online Learning

Although school districts use a variety of methods to deliver distance instruction, across the country distance learning is increasingly becoming synonymous with the delivery of instruction through online courses. The ready accessibility of computers and the Internet has dramatically increased the ability of Texas schools to leverage this particular tool to make electronic courses a widely available option for students.

Campus STaR Chart
2005-2006
Infrastructure-Distance Learning



The chart above shows that most schools are at the Developing Tech level for having the infrastructure to provide distance learning. At this level, schools say they do not have two-way interactive video distance learning capabilities at the campus but they do have it available in the district.

"Online learning is opening access and opportunity for all students by providing high quality courses and highly qualified teachers over the Internet-- regardless of their neighborhood or geography."
Susan Patrick, President and CEO of NACOL (Patrick is the former director of the Office of Educational Technology at the U.S. Department of Education, where in 2005 she published the visionary National Education Technology Plan.)

Online learning—instruction and content delivered primarily over the Internet—continues to expand exponentially in the United States for all levels of education. At the higher education level, the online enrollment growth rate of 18.2% is more than ten times that projected by the National Center for Education Statistics for the entire postsecondary student population (Allen, *Growing by Degrees: Online Education in the United States*, 2005). While K-12 online learning programs may not yet be as ubiquitous as they are at the postsecondary level, middle and high school programs are growing just as exponentially.

Recognizing the growing use of online learning to deliver instruction to Texas school students, the 78th Legislature passed Senate Bill 1108 which calls for the Commissioner of Education *"…to establish a program under which a school district may offer electronic courses to students enrolled in the district or to students enrolled in another district, as provided by an agreement between the districts." An electronic course means "…an educational program or course: that includes use of the Internet or other electronic media; and in which a student and a teacher are in different locations for a majority of the student's instructional period."* This led to the Electronic Course Pilot which is now underway. For more information about the pilot, see the *Interim Report on the Electronic Course Pilot* on page 3 of this report.

For all of the growth in online learning programs, it is important to recognize issues and challenges that exist for Texas schools and districts. Currently, equity does not exist across Texas in terms of students' access to highly qualified teachers and to rigorous online courses. Additionally, the quality of online courses and online instruction offered across the state varies widely with no assurance of alignment with state curriculum standards and other quality assurance guidelines. It is critical for students, districts and the state to have assurance that courses and instruction offered online are of high quality and meet state standards. Equity must be ensured to reach students of different needs, of different socio-economic backgrounds, from different geographic regions, and of different learning abilities. TEA staff has extensively researched statewide virtual schools that have been implemented in twenty-four other state and has implemented three pilot programs to identify and explore opportunities, challenges and issues involved with online learning programs. The department has also participated in a wide variety of multi-state efforts to investigate effective online learning programs and policies.

Distance Learning Through Interactive Videoconferencing (IVC) and Satellite

While online learning is expanding at a phenomenal rate, districts are also using other valuable methods of distance learning. Nationally, interactive two-way videoconferencing is used by 55% of all school districts offering distance learning and is the primary means of delivering distance education to students. One-way video via satellite is used by 16% of all districts that offer distance learning, and videoconferencing is most often used by small districts (60%) and rural districts (64%).

Currently, the ESCs provide Interactive Videoconferencing (IVC) across the state or within their region to meet the needs of their students and districts. The IVC program supported by the ESCs has had a significant impact on delivering content to students.

The figures to the right reflect an increase in numbers of students taking courses in 2005-2006. As the distance learning delivery of courses grows more streamlined and effective, the needs of students for core classes are being met, and the courses offered are those that address teacher shortages and specific content areas. Texas Connects provides videoconference events for Texas students planned and sponsored by the Texas Education Telecommunications Network (TETN), and the regional networks of the twenty ESCs in Texas. They are designed to give students an opportunity to learn about various subjects. Past events have included Pearl Harbor Remembered (high school history); Nature Speaks (middle school science); Sun, Moon, Earth (elementary science); and Edison Day (math and science).

Multi-Regional Distance Learning Events

	Schools	Students
Texas Connects		
Pearl Harbor, December 2004	90	2,600
Nature Speaks in Texas, May 2005	75	3,200
Sun, Moon, Earth, December 2005	95	3,400
Edison Day, May 2006	55	2,500
Multi Regional Events Hosted by ESCs		
Astronomy Day, May 2006	190	7,000
Surviving Dachau, March 2006	92	4,582

Interactive Videoconferencing (IVC) Through ESCs

Number of separate Dual-enrollment course subject titles offered via IVC 226

Total number of Dual-enrollment courses delivered via IVC (Eng IV sections delivered to districts 3 times count as 3) 611

Number of per course student enrollment in Dual course instruction (a student enrolled in 2 courses via IVC. 7,586

Number of campuses receiving Dual enrollment instruction via IVC 330

Number of campuses receiving electronic field trips via IVC 890

Number of electronic field trips offered via IVC 1,493

Number of High School credit unique course titles offered via IVC 64

Number of High School credit courses delivered via IVC (Alg I delivered to districts 3 times counts as 3) 107

Number of campuses receiving High School credit course instruction via IVC 86

Number of per course student enrollment in High School credit course instruction via IVC (a student enrolled in 2 courses counts as 2) 2,734

The millennial student may think of distance learning as only online courses. However, live satellite courses, correspondence courses, courses through televised or streaming video, and especially interactive videoconferencing continue to contribute toward expanded learning opportunities for Texas students.

Distance learning gives schools the power to expand and enrich their curriculum offerings to students of all ages and to provide middle and high school students with courses that would not be available to them otherwise. Through distance learning, educators are able to receive professional development in their home town—at school or at home—rather than by leaving their classrooms and administrative offices to travel to a distant location.

Most importantly, distance learning helps provide schools with the resources to offer each student the educational opportunities which that student needs—from rigorous, high-level courses, including Advanced Placement and dual-credit, to credit recovery opportunities, to critically needed courses required for the Recommended and Distinguished Achievement High School Graduation Plans. Distance learning delivered online via the Internet, through videoconferencing, digital content services, and other distance learning technologies holds great promise and potential for students in all reaches of the state.