
Travis Unified School District Technology Plan
Enhancing Education Through Technology Grant
Original Plan adopted by
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January 2003 – June 2006 *Revision*

Written and Developed by:
Lucy Salerno, Technology Coordinator

Dr. Jacki Cottingim, Superintendent
Sankaran Iyer, Director of Technology
Denise Boyles, School Board President

Travis Unified School District
2751 DeRonde Dr.
Fairfield, CA 945334
707-437-8228

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Travis Unified School District Technology Plan

January 2003 – June 2006

1. Plan Duration

The duration of this plan is three years. Goals and Implementation Timelines reflect a three-year strategy.

2. Stakeholders

The Technology Specialist, with regular meetings and feedback from the Director of Information Services and Technology, was the primary writer of this technology plan. At various times during the writing, we held meetings with different administrators for feedback and ideas regarding curriculum goals. The goals for the Curriculum and Professional Development Components were distributed to different teachers for their feedback and also sent to each site technology coordinator. A parent meeting consisting of approximately a dozen parents constituted the Parent Advisory Committee.

Stakeholders

Stakeholders in the Travis Unified School District plan include:

- Administrators,
- Site Technology Coordinators
- Teachers
- Various District Office Personnel
- District Technology Technician
- Parent Advisory Committee

Technology Team

The Technology Team will be comprised of the following members:

- Director of Information Services
- Technology Specialist
- Site Technology Coordinators
- Library Media Specialists
- One administrator
- Parents

Contacts:

Jacki Cottingim, Superintendent jcottingim@travisusd.k12.ca.us

Kathleen Bond, Assistant Superintendent of Education Services kbond@travisusd.k12.ca.us

Sankaran Iyer, Director of Information Services siyer@travisusd.k12.ca.us

Lucy Salerno, Technology Specialist lsalerno@travisusd.k12.ca.us

3. Curriculum Component

Abstract:

Travis Unified School district strives to integrate technology into the curriculum and use it as a means to an end not an end in itself. Aspects of technology have been included in the majority of K-6 priority standards and K-12 California Content Standards. We aim to use technology to help increase student achievement in Reading and Language Arts through cross-curricular Project Based Learning and activities to improve reading comprehension. Information Literacy skills will be taught to all staff and students.

Needs and Resource Assessment

3A: Description of teachers' and students' current access to technology tools both during the school day and outside of school hours.

Every classroom in Travis Unified School District has at least one networked computer for teacher and student use and all schools have at least 6 – 10 computers in the Library Media Center for teacher and student use. All students use computers in the Library Media Center and are able to locate books through an on-line library catalog. Availability during non-school hours is limited. In order to expand the number of computers in the classroom, one site is also using portable laptop labs. All school sites have access to digital cameras and scanners.

3B: Description of the school district's current use of hardware and software to support teaching and learning.

Hardware and software vary from site to site, as does its use. However, most teachers are using the district email on a daily basis for communication in the district and some teachers are using email for communication with parents and the community. Most teachers that have participated in the Technology Innovation Challenge Grant are using the network more fully and storing their files and student projects on the server. All staff in the district is using either Microsoft Office 2000 or Office for Mac and machines are generally running Windows 2000 or OS10.

All staff has been trained in the Web-based Integrated Data Management System by the Pulliam Group and are using the database on a monthly basis to make decisions about curriculum. Elementary Teachers are also using IDMS for electronic report cards, while the middle and high schools are using Aeries Student Data Management system. The middle and high schools are also using Aeries for online attendance. Two Elementary schools are piloting online attendance and the rest should be using the system within the next year.

Different software is used for multimedia projects, including: PowerPoint, Kidpix or Hyperstudio, Inspiration, Timeliner, Jump Start and others on a weekly. All Elementary schools are also using Reading Counts or Accelerated Reader, and Accelerated Math (1 school) on a daily basis. Other software such as Skills Connection, Essential Skills are linked to the California State Standards and are being used by several elementary schools. Students and teachers use this software weekly.

Administrators and campus monitors are using handheld technology for supervising students, parking, medical concerns, and emergencies. Middle School teachers are piloting Handheld Technology in the Middle School and will be venturing out with their students in the fall of 2003.

3C: Summary of the school district's curricular goals as presented in various district and site comprehensive planning documents.

Travis Unified School District Board goals focus upon maintaining instructional excellence in order to increase achievement for every student. The following curriculum goals, taken from the School Board goals, govern the implementation of all academic programs and purchases within the district and are revisited each year to assess growth and progress. These goals include:

- ❑ Support Implementation of electronic SBRC at all Elementary schools
- ❑ Prepare and implement training for Instructional Database Management System (IDMS)
- ❑ Support the RESULTS, Interim program
- ❑ Support development and implementation of Visual and Performing Arts Academy, Algebra Academy, and Aeronautical Academy
- ❑ Enhance and expand "Improving Student Performance Series" the district's professional development program based on teacher survey data, student performance data, and evaluation of sessions by teachers

- ❑ Implement the redesign of Reading Specialist Program and extended day schedules for elementary schools
- ❑ Facilitate work of all district curriculum committees

Curriculum Goals:

- Goal 1: Students will use technology to improve learning in Reading and Language Arts standards in grades K – 12. (EETT 3d)
- Goal 2: Students will use technology to improve student achievement through the use of Project Based Learning (PBL). (EETT 3d)
- Goal 3: Students will acquire Informational Literacy Skills: Task Definition, Information Seeking Strategies, Location and Access, Use of Information, Synthesis, and Evaluation, needed to succeed in the classroom and the workplace. (EETT 3e)
- Goal 4: Students will acquire the basic technology skills needed to succeed in the classroom and the workplace. (EETT 3e)
- Goal 5: Teachers will use programs and methods of utilizing technology that ensure appropriate access to all. (EETT 3f)
- Goal 6: Teachers will use Aeries Student Data System, to help meet the individual needs of all students. (EETT 3g)
- Goal 7: Teachers and students will implement Microsoft Class Server to enhance interim student assessment and increase the parent/school connection (EETT 3h)

Curriculum Component Goals

<i>3d Goal 1: Students will use technology to improve learning in Reading and Language Arts standards in grades K – 12.</i>		
Objectives:	Yearly Benchmarks/ Implementation:	
<ul style="list-style-type: none"> ❑ By June 2006, 60% of 5th, 7th, and 10th grades of students will utilize Internet resources to develop an integrated research project. ❑ By June 2006, 60% of 2nd through 6th grade students will use Reading Counts or Accelerated Reader to track their own growth and development 	<ul style="list-style-type: none"> ❑ Students will include Internet resources for enhanced student learning of Language Arts standards <ul style="list-style-type: none"> • By June 2004, 20% of 5th, 7th, and 10th grades of students will utilize Internet resources to develop an integrated research project. • By June 2005, 40% of 5th, 7th, and 10th grades of students will utilize Internet resources to develop an integrated research project. • By June 2006, 60% of 5th, 7th, and 10th grades of students will utilize Internet resources to develop an integrated research project. ❑ Students (with the help of their teachers) will use reports from Reading Counts (RC) and Accelerated Reader (AR) to locate strength and weaknesses in their academic development at the end of each trimester or semester during the plan years. <ul style="list-style-type: none"> • By June 2003, the Technology Team will determine which reports students will use to monitor progress and develop a system to collect the results. • By June 2004, 20% of 2nd through 6th grade students will use reports from Reading Counts or Accelerated Reader on a monthly basis to track their own growth and development • By June 2005, 40% of 2nd through 6th grade students will use reports from Reading Counts or Accelerated Reader on a monthly basis to track their own growth and development • By June 2006, 60% of 2nd through 6th grade students will use reports from Reading Counts or Accelerated Reader on a monthly basis to track their own growth and development 	
Evaluation and Assessment	Schedule for Evaluation	Persons Responsible
Beginning in 2004, principals will collect samples of student projects each school year. The projects will be sent to the Tech Team by June for review and analysis to determine progress toward benchmarks.	June of each plan year	Principals and Tech Team
Report protocol and collection system will be established.	June of 2003	Tech Team
Beginning in 2004, principals will collect the student report data at the end of each trimester and submit it to the tech team. Data will be analyzed to determine progress toward benchmarks.	End of each trimester June of each plan year for master compilation	Principals Tech Team Director of Information Services

3d Goal 2: Students will use technology to improve student achievement through the use of Project Based Learning (PBL).

Objectives	Benchmarks /Implementation
<ul style="list-style-type: none"> ❑ By August 2006, 60% of K-12 students will use technology to create cross-curricular products that demonstrate problem solving and critical thinking skills and meet the needs of diverse learners. ❑ By August 2006, 40% of students in grades 3 - 12 will participate in online collaborative projects through email or the Internet. 	<ul style="list-style-type: none"> ❑ Students will create cross-curricular projects that demonstrate critical thinking and problem solving and meet the needs of diverse learners. <ul style="list-style-type: none"> ○ By August 2003, the Tech Team will have created a rubric to evaluate critical thinking and problem solving. ○ By August 2004, 20% of students will use technology to create cross-curricular products that demonstrate problem solving and critical thinking skills. ○ By August 2005, 40% of students will use technology to create cross-curricular products that demonstrate problem solving and critical thinking skills ○ By August 2006, 60% of students will use technology to create cross-curricular products that demonstrate problem solving and critical thinking skills. ❑ Students will participate in online collaborative projects <ul style="list-style-type: none"> ○ By August 2005, 20% of students will participate in online collaborative projects. ○ By August 2006, 40% of students will participate in online collaborative projects.

Evaluation and Assessment	Schedule for Evaluation	Persons Responsible
By August of 2003, the tech team will have a completed rubric to analyze PBL.	August 2003	Tech Team, Technology specialist
In January and June of each year the principals will collect examples of Project Based Learning (PBL) that show critical thinking and problem solving. These projects will be given to the Tech Team to analyze for the appropriate skills and meeting the needs of diverse learners.	January and June of each year of the plan	Principals Tech Team
The Technology specialist will monitor student participation of PBL and Online collaborative projects throughout the year through observations, interviews, and printed results of the collaborative project. (Emails, graphs, notes, comments, pictures, web postings, etc.) The technology specialist will file a report in January and June of each year documenting results of student participation.	January and June of each year of the plan	Technology Specialist Director of Information Service

3e Goal 3: Students will acquire Information Literacy Skills: Task Definition, Information Seeking Strategies, Location and Access, Use of Information, Synthesis, and Evaluation, needed to succeed in the classroom and the workplace.

Objectives	Benchmarks /Implementation	
<p>❑ By August 2006, 60% of K -12 students will use 66% of the required grade level Information Literacy skills. By Using Big 6 organizers student research will reflect the following skills:</p> <ul style="list-style-type: none"> ○ <i>Task Definition,</i> ○ <i>Information Seeking Strategies,</i> ○ <i>Location and Access</i> ○ <i>Use of Information</i> ○ <i>Synthesis</i> ○ <i>Evaluation</i> 	<p>❑ Students will learn and use the Big 6 Information Literacy Skills as appropriate to each grade level</p> <ul style="list-style-type: none"> ○ By August 2003, the tech team will develop a K-12 Scope and Sequence. <p>By August 2004, 20% of students will use 66% of the required grade level Information Literacy skills.</p> <ul style="list-style-type: none"> ○ By August 2005, 40% of students will use 66% of the required grade level Information Literacy skills. ○ By August 2006, 60% of students will use 66% of the required grade level Information Literacy skills. 	
Evaluation and Assessment	Schedule for Evaluation	Persons Responsible
By August 2003, a K-12 Scope and Sequence will be developed.	August 2003	Tech Team Technology Specialist Director of Information Service
Throughout each plan year, the Tech Team will collect random samples of student research in order to assess the use of Information Literacy. Collection of samples will be completed by May of each year.	Third trimester or quarter of each plan year	Technology Specialist Site Administrators Tech Team
By third trimester or quarter of each year the Tech Team will evaluate the collected research based on the Information Literacy Scope and Sequence.	Third trimester or quarter of each plan year	Tech Team Technology Specialist Director of Information Services

3e Goal 4: Students will acquire the basic technology skills needed to succeed in the classroom and the workplace.

Objectives	Benchmarks /Implementation	
<ul style="list-style-type: none"> ❑ By August 2006, 60% of K – 12 students will achieve 66% of the ISTI technology standards for students. (See appendix D) ❑ By August 2006, 60% of K – 12 students will complete the online student self-assessment of technology skills. 	<ul style="list-style-type: none"> ❑ Students will acquire the basic technology skills needed to succeed in the classroom and the workplace. <i>See Appendix D</i> <ul style="list-style-type: none"> ○ By August 2004, 20% of students will achieve 50% of the ISTI technology standards for students ○ By August 2005, 40% of students will achieve 66% of the ISTI technology standards for students ○ By August 2006, 60% of students will achieve 66% of the ISTI technology standards for students ❑ Students will complete an on-line student self-assessment of ISTE related technology skills. <ul style="list-style-type: none"> ○ By August 2003, an online student self-assessment survey will be developed by the technology specialist. ○ By August 2004, 20% of students will complete the online student self-assessment of technology skills. ○ By August 2005, 40% of students will complete the online student self-assessment of technology skills. ○ By August 2006, 60% of students will complete the online student self-assessment of technology skills. 	
Evaluation and Assessment	Schedule for Evaluation	Persons Responsible
By August 2003, an on-line student self-assessment of technology skills will have been developed, posted, and tested.	August 2003	Technology Specialist Director of Information Services
By August of each year, the Tech Team will analyze the data of the online student self-assessment and prepare charts to represent the results.	Annually in September of each plan year	Administrators
Based on the results of data analyses, the tech team will make recommendations to the Director of Information Services and Technology for plan modification.	December of each plan year	Director of Information Services Technology Specialist

3f Goal 5: Teachers will develop and students will use programs and methods of utilizing technology that ensure appropriate access to all students (including Special Education, English Language Learners, and GATE.

Objectives		Benchmarks /Implementation	
<ul style="list-style-type: none"> ❑ By August 2006, K-12 students will have increased access to 25% of Library Media Centers during non-school hours (before/ after school, lunch, or intersession) to work on technology projects. ❑ By August 2006, K-12 students will have increased opportunities to participate in technology rich classes, held before/after school or intersession. Examples include: <i>Robotics, video, web page development, handheld computers, research projects, collaborative projects, etc.</i> 	<ul style="list-style-type: none"> ❑ Students will have access to Library Media Centers during non-school hours (before/ after school, lunch, or intersession) to work on technology projects. <ul style="list-style-type: none"> ○ By August 2004, 25% of the Library Media Centers will increase student access during non-school hours by 2 hours per week. (2 of 8 LMC's) ○ By August 2005, 50% of the Library Media Centers will increase student access during non-school hours by 2 hours per week. (4 of 8 LMC's) ○ By August 2004, 50% of the Library Media Centers will increase student access during non-school hours by 3 hours per week. (4 of 8 LMC's) ❑ Students will have opportunities to participate in before/after school technology rich classes, for example: robotics, video, web page development, handheld computers, research projects, collaborative projects, etc. <ul style="list-style-type: none"> ○ By August 2004, 2 Elementary and 2 secondary technology-rich classes will be developed that include Special Education, English Language Learners, and GATE. ○ By August 2005, 4 Elementary and 4 secondary technology-rich classes will be developed that include Special Education, English Language Learners, and GATE. ○ By August 2006, 6 Elementary and 6 secondary technology-rich classes will be developed that include Special Education, English Language Learners, and GATE. 		
Evaluation and Assessment		Schedule for Evaluation	Persons Responsible
By August of each year, principals will arrange schedules to include the non-school hours for student access.		August of each plan year	Site administrators
By December of each year, the hours from the LMC schedules will be calculated by the technology specialist		December of each year	Technology specialist
Technology-rich course syllabi are written, submitted, and approved by the Educational Services Department no later than May prior to the year of implementation.		May of each plan year	Site Administrators Educational Services Department Director of Information Services
The Technology Specialist or Director of Information Services will keep a record of the number and content of Technology-rich classes being taught.		August of each year	Director of Information Services Technology Specialist

3g Goal 6: Teachers will use Aeries Student Data System to help meet the individual needs of all students including Special Education, GATE, and English Language Learners.

Objectives	Benchmarks /Implementation	
<p>❑ By August 2006, students will benefit from 70% of teachers using 60% of available screens in Aeries for student data management. The available screens include:</p> <ul style="list-style-type: none"> • <i>Intervention strategies</i> • <i>Medical information</i> • <i>Testing</i> • <i>Attendance</i> • <i>Discipline</i> • <i>Language</i> • <i>Special Education</i> • <i>Contacts</i> • <i>Fees</i> • <i>Assessment</i> 	<p>❑ Teachers will use Aeries Student Data System to help meet the individual needs of all students:</p> <ul style="list-style-type: none"> ○ By August 2004, 40% of teachers will use 40% of the available screens in Aeries for student management to meet the needs of individual students. ○ By August 2005, 60% of teachers will 50% of the available screens in Aeries for student management to meet the needs of individual students. ○ By August 2006, 70% of teachers will 60% of available screens in Aeries for student management to meet the needs of individual students. 	
Evaluation and Assessment	Schedule for Evaluation	Persons Responsible
<p>Beginning in August 2004, administrators will monitor usage of Aeries report screens. They will submit usage results to the Tech Team by November of each year beginning in November 2004.</p>	<p>August and November of each year beginning in 2004</p>	<p>Site Administrators Director of Information Services</p>
<p>Beginning November 2004, the Tech Team will calculate district Aeries use percentages based on the results provided by site administration and submit a report to the Director of Information Service .</p>	<p>December each year beginning in 2004</p>	<p>Tech Team Technology specialist Director of Information Services</p>

3h Goal 7: Teachers and students will implement Microsoft Class Server to enhance interim student assessment and increase the parent/school connection.		
Objectives	Benchmarks /Implementation	
<p>❑ By August 2006, 60% of teachers will use Microsoft Class Server to improve the home/ school connection. Various applications of use could include:</p> <ul style="list-style-type: none"> • <i>Students using Microsoft Class Server as part of a class project</i> • <i>Students using teacher developed assessment tools within Microsoft Class Server</i> • <i>Students completing assignments that incorporate the use of Microsoft Class Server</i> • <p>❑ By August 2006, 75% of teachers, students, parents will complete a survey on the effectiveness of MClass Server.</p> <p><i>(Since MClass Server enables parents to view students' work and make comments, they can track their child's work, progress, and improvement, as well as view the teacher's comments.)</i></p>	<p>❑ Teachers and students will implement Microsoft Class Server to enhance interim student assessment and increase the parent/school connection.</p> <ul style="list-style-type: none"> • By August 2004, 20% of teachers will use Microsoft Class Server to improve the home/ school connection • By August 2005, 40% of teachers will use Microsoft Class Server to improve the home/ school connection • By August 2006, 60% of teachers will use Microsoft Class Server to improve the home/ school connection <p>❑ Teachers, students and parents will complete a survey on the effectiveness of Microsoft Class Server</p> <ul style="list-style-type: none"> • By May 2004, the Tech Team will have developed a survey to measure the use and effectiveness of MClass Server. • By August 2004, 40% of participants will complete a survey on the effectiveness of MClass Server. • By August 2005, 50% of participants will complete a survey on the effectiveness of M MClass Server. • By August 2006, 75 % of participants will complete a survey on the effectiveness of M MClass Server. 	
Evaluation and Assessment	Schedule for Evaluation	Persons Responsible
By May 2004, the Tech Team will have a completed survey to measure the use and effectiveness to the MClass Server and submitted it to the Director of Information Services for approval.	May 2004	Tech Team Technology Specialist Director of Information Services
Beginning in August of 2004, the MClass Server Administrator will monitor activity of teachers, students, and parents by tracking lessons, assessment tools, projects, and parent participation.	Beginning August 2004 and continuing throughout the plan.	MClass Server Administrator Director of Information Services Technology Specialists
By December of each year, the Tech Team will analyze the results of the survey, prepare a report, and submit it to the Director of Information Services.	December of each year	Tech Team Director of Information Services

4. Professional Development

Abstract:

Travis Unified School District will continue to provide, support, expand, and enhance the Professional Development program through the Education Services and Student Learning Department. The “Improving Student Performance” series incorporates workshops on all aspects of curriculum, technology, and professional growth based on teacher survey data, student performance data, and evaluation of sessions by teachers.

Needs and Resource Assessment

4A: Summary of Teachers’ and administrators’ current technology skills and needs for professional development.

Teachers at Travis Unified are motivated and enthusiastic and participate in a wide variety of technology related professional development workshops or classes. Over 75 teachers have participated in the Intel Teach to the Future Program using Microsoft Word, PowerPoint, and Publisher 2000 and 2002 and approximately 30 teachers have learned Microsoft Front Page 2000 and successfully built class web pages. All Administrators and 15 Middle school teachers have trained on the basics of Handheld computing in Education and are using them in the course of their jobs. Teachers and staff have participated in workshops on Basic Troubleshooting, Microsoft Outlook, Excel, Access, Microsoft Word, Inspiration, Hyperstudio, and Kidpix. Two elementary schools have participated in the Technology Innovation Challenge Grant and have expanded their skills in integrating technology into the curriculum.

Teachers and Administrators recognize the need to increase their skills in technology. Therefore, we need to develop a leveled program that is consistent with the skills on the CTAP2 teacher self-assessment. This program would offer sequential classes in all Office applications. We also need technology support and mentoring available for teachers when they need it at each campus. Training is needed in the area of Information Literacy. A system is also needed to properly identify the level of expertise of our staff. CTAP2 will be ideal to assess these skills.

Professional Development Goals:

- Goal 1: All teachers will integrate technology to stimulate problem solving and critical thinking. (C1, C2)
- Goal 2: All Staff will be trained in Information Literacy Skills: Task Definition, Information Seeking Strategies, Location and Access, Use of Information, Synthesis, and Evaluation (C3)
- Goal 3: All staff will improve technology skills in at least three of the nine components based on CTAP2 self-assessment of technology skills. (C4)
- Goal 4: All staff will be trained in the use of Microsoft class Server. (C7)

Professional Development Component Goals (4 b-d)

<i>Goal 1: All teachers will integrate technology to stimulate problem solving and critical thinking. (Supports 3d)</i>		
Objectives	Benchmarks /Implementation	
<ul style="list-style-type: none"> ❑ By August 2006, 60% of teachers will be trained how to create lessons that integrate critical thinking and problem solving activities with technology and Problem Based Learning ❑ By August 2006, 60% of teachers will be trained how to integrate technology into Language Arts and Writing Skills and become aware of standards based resources available for integrating technology into the classroom with a focus on CLRN (California Learning Resource Network). 	<ul style="list-style-type: none"> ❑ Teachers will be trained how to create lessons that integrate critical thinking and problem solving activities and technology and Problem Based Learning <ul style="list-style-type: none"> ○ By August 2003, the Tech Team will develop a rubric and baseline project guidelines. ○ By August 2004, 25% of teachers will be trained how to create lessons that integrate critical thinking and problem solving activities and technology and Problem Based Learning ○ By August 2005, 40% of teachers will be how to create lessons that integrate critical thinking and problem solving activities and technology and Problem Based Learning ○ By August 2006, 60% of teachers will be trained how to create lessons that integrate critical thinking and problem solving activities and technology and Problem Based Learning ❑ Teachers will learn how to integrate technology into Language Arts and Writing Skills and become aware of standards based resources available for integrating technology into the classroom. <ul style="list-style-type: none"> ○ By August 2004, 25% of teachers will be trained how to integrate technology into Language Arts using available web resources. ○ By August 2005, 40% of teachers will be trained how to integrate technology into Language Arts using available web resources ○ By August 2006, 60% of teachers will be trained how to integrate technology into Language Arts using available web resources 	
Evaluation and Assessment	Schedule for Evaluation	Persons Responsible
There is an established rubric with baseline project guidelines by August 2003.	August 2003	Director of Information Services Technology Specialists
Principals and Technology Specialist will keep records of teacher participation in training sessions.	October each plan year	Director of Information Services Technology Specialists/ Tech Team
By October of each year, the tech team will calculate percentage of district participation and make recommendations for improvement to the Director of Information Services.	December of each plan year	Director of Information Services Technology Specialists Tech Team

Goal 2: All Staff will be trained in Information Literacy Skills: Task Definition, Information Seeking Strategies, Location and Access, Use of Information, Synthesis, and Evaluation (Supports 3e)

Objectives	Benchmarks /Implementation	
<p>❑ By June 2006, 60% of teachers will be trained in using appropriate Big 6 Information Literacy skills for research or projects. These skills will include:</p> <ul style="list-style-type: none"> ○ <i>Task Definition,</i> ○ <i>Information Seeking Strategies,</i> ○ <i>Location and Access,</i> ○ <i>Use of Information,</i> ○ <i>Synthesis, and</i> ○ <i>Evaluation</i> 	<p>❑ Teachers will be trained in using age appropriate Big 6 Informational Literacy skills for research and projects.</p> <ul style="list-style-type: none"> • By June 2003, the Tech Team will have created a K-12 scope and sequence appropriate for each grade level. • By August 2003, the Tech Team will have organized Information Literacy Training. • By June 2004, 20% of teachers will be trained in using age appropriate Big 6 Informational Literacy skills • By June 2005, 40% of teachers will be trained in using age appropriate Big 6 Informational Literacy skills • By June 2006, 60% of teachers will be trained in using age appropriate Big 6 Informational Literacy skills 	
Evaluation and Assessment	Schedule for Evaluation	Persons Responsible
A K-12 Scope and Sequence of Information Literacy will have been developed by June 2003.	June 2003	Tech Team Director of Information Services
Workshop outlines and materials have been developed and approved by the necessary departments by August 2003.	August 2003	Tech Team Technology Specialist Director of Information Services
By August of each year, the CTAP2 district administrator will have tracked district growth.	August of each year	Technology Specialist Director of Information Services
Principals will monitor teacher use of Information Literacy during observations informally and submit results to the Director of Information Services by the end of each school year.	June of each year	Principals
By October of each year, the Tech Team will analyze the data and submit results and recommendations to the director of Information Services.	October of each plan year	Technology Specialist Director of Information Services Tech Team

Goal 3: All staff will improve technology skills in Instructional Technology and at least three of the nine components based on CTAP2 self-assessment of technology skills. (Supports 3f)

Objectives	Benchmarks /Implementation	
<p>❑ By August 2006, 75% of staff will improve technology skills in Instructional Technology and at least three areas of their choice. Areas of choice include the following nine components of CTAP2</p> <ul style="list-style-type: none"> ○ <i>Computer skills</i> ○ <i>General knowledge</i> ○ <i>Internet</i> ○ <i>Email</i> ○ <i>Word Processing</i> ○ <i>Desktop Publishing</i> ○ <i>Databases</i> ○ <i>Spreadsheets</i> ○ <i>Presentation software</i> ○ <i>Instructional Technology</i> <p>❑ By August of each year, 75% of staff will complete the CTAP² self-assessment.</p>	<p>❑ All staff will improve technology skills in Instructional Technology and at least three of the nine components based on CTAP2 self-assessment of technology skills.</p> <ul style="list-style-type: none"> ○ The Tech Team will develop CTAP2 leveled workshop outlines and submit for approval by August 2003. ○ By August 2004, 25% of staff will improve technology skills in at least three areas of their choice. ○ By August 2005, 50% of staff will improve technology skills in at least three areas of their choice. ○ By August 2006, 75% of staff will improve technology skills in at least three areas of their choice. <p>❑ By August of each year 75% staff will complete the CTAP² self-assessment.</p>	
Evaluation and Assessment	Schedule for Evaluation	Persons Responsible
<p>The Technology Specialist and Education Services department will track the numbers of teachers enrolled in workshops after each enrollment period of the Improving Student Performance Series for Professional Growth.</p>	<p>February, June, and September of each plan year</p>	<p>Technology Specialist Director of Information Services</p>
<p>CTAP2 District Administrator will track growth, Analyze data and submit reports to the Director of Information Services by December of each year.</p>	<p>December of each plan year</p>	<p>Director of Information Services Technology Specialist</p>
<p>Principals will track and encourage teacher completion of self-assessments by April of each year.</p>	<p>February, June, and September of each plan year</p>	<p>Technology Specialist</p>

Goal 4: All staff will be trained in the use of Microsoft Class Server to integrate technology into the curriculum and improve the home/school connection. (Supports 3h)

Objectives	Benchmarks /Implementation		
<p>❑ By August 2006, 40% of teachers will receive training in using Microsoft Class Server to integrate technology into the curriculum and improve home/ school communication. Integration options include:</p> <ul style="list-style-type: none"> ○ <i>Projects</i> ○ <i>Homework</i> ○ <i>Assessments</i> ○ <i>Lessons</i> ○ <i>Research</i> 	<p>❑ All staff will be trained in the use of Microsoft Class Server to integrate technology into the curriculum and improve the home/school connection.</p> <ul style="list-style-type: none"> ○ By August 2003, a group of teachers will be recruited to pilot MClass Server. ○ By August 2004, the pilot teachers will receive training in using Microsoft Class server to integrate technology into the curriculum and improve home/ school communication ○ By August 2005, 20% of teachers will receive training in using Microsoft Class server to integrate technology into the curriculum and improve home/ school communication ○ By August 2006, 40% of teachers will receive training in using Microsoft Class server to integrate technology into the curriculum and improve home/ school communication 		
Evaluation and Assessment	Schedule for Evaluation	Persons Responsible	
Pilot Teachers have been identified and trained by January 2004.	January 2004	Administrators Technology Specialist Director of Information Services	
By July 2004, the Technology Specialist and Director of Information Services will meet with the pilot teacher to assess the implementation of MClass Server and make recommendations for changes.	July 2004	Pilot Teachers and Administrators Technology Specialist Director of Information Services	
The Technology Specialist and Information Services Department will monitor teacher training of MClass Server by enrollment in workshops.	February, June and September of each year	Pilot Teachers and Administrators Technology Specialist Director of Information Services	

5. Infrastructure, Hardware, Technical support, and Software

Abstract:

Travis Unified School District has a LAN/WAN infrastructure connecting all schools to the district office through a T1 line. The district maintains its own servers and internal network infrastructure.

Needs and Resource Assessment

5A: List of each sites technology hardware electronic learning resources, networking, and telecommunication infrastructure, physical plant modifications, and technical support needed by teachers, students, and administrators to support the activities in the Curriculum and Professional Development components.

Hardware

All sites have sufficient hardware to begin the implementation of the Curriculum and Professional Development Components of this technology plan. Teachers will need at least three computers in order to reduce the student/computer ratio to 1 to 10 in classes with 30 students. Teachers will also need access to digital cameras, printers, scanners, and a means of presentation. Once an inventory is completed for each site, an addendum will be added to this plan with specific details as to needed equipment. See Appendixes C and D.

Electronic Resources

Electronic resources teachers will need to implement this plan are a Multimedia tool, Word Processing and Publishing tools, and software for graphing, charting, databases, and spreadsheets. These tools are generally available at each site. We have district licenses for Microsoft Class Server to install on all computers as necessary. We also have Microsoft Office Professional (or Office for Mac) on all computers giving teachers multimedia as well as publishing capabilities with PowerPoint and Microsoft Publisher. Most schools already own Hyperstudio and Kid Pix if these are chosen as project options.

A survey will be completed regularly on the availability and type of software at each site so that all teachers and students have the necessary software to implement the plan.

Networking and Telecommunications Infrastructure

Teachers will need network and Internet capabilities for streaming video and online collaborative projects. Since Travis Unified is fully networked through a LAN/ WAN with a fiber optic backbone and T1 connectivity to the district office our bandwidth is already sufficient to utilize video streaming and make optimum use of the Digital California Project when implemented.

Physical Plant

Teachers will need sufficient space and electrical for hardware. Tables, cables, and Internet access equipment are all in place. There are extra tables and cables in the district to set up additional hardware. Classrooms will be arranged for optimum use and student safety.

Technical Support

Consistent and reliable technical support will be needed to maintain the hardware and peripherals required for this plan. There will need to be support for teachers as they implement projects using cameras, scanners, or any other item until they become comfortable with their use and basic troubleshooting tips to fix things quickly.

5B: List of each site's existing hardware, Internet access, electronic learning resources, and technical support already in the district that could be used to support the Curriculum and Professional Development components.

Hardware

Hardware varies greatly from site to site and additional hardware may need to be purchased for some sites in order to implement this technology plan. Of the five elementary schools, two are Mac based and three are PC based and all teachers have Internet access. The majority of machines are running either Windows 2000 or Mac OS9/10. The Middle and High Schools are fully PC based. The Middle School is lacking in up-to-date equipment. Many teachers have only one computer for themselves and 30 students and were still running Windows 98 and 95. They recently received new 55 new computers that are now running Windows XP or 2000. However, many more machines are needed, especially when you consider the student to computer ratio of 30 to 1. Vanden High School is a digital high school and technology-wise is doing quite well. All machines are all running Windows 2000. All administrative and office staff are PC based and running Windows 2000 or XP.

Electronic Learning Resources

The electronic resources needed for implementing this plan are already owned by the sites or district and can be used to implement. Each site will need to inventory their electronic resources for each grade level that are currently available using a district inventory sheet should be created to collect uniform data. A central database should be established to these track resources as well as track the last time resource was used. See Appendix B.

Some resources may be outdated and will no longer work on newer operating systems- a system should be in place to decide what to do with such resources. Can patches be downloaded for newer systems or should they be removed from the Library? What should be done with them once they are removed? These are questions the Technology Team and the Director of Information Services and Technology will need to answer.

Networking and Telecommunications Infrastructure

Travis Unified is fully networked through a LAN/ WAN with a fiber optic backbone and T1 connectivity to the district office. Travis Unified School District's Network and telecommunications infrastructure is well thought out and will

fully support the Curriculum and Professional Development components in this technology. As the plan is implemented and student projects are numerous, we may need to consider purchasing additional servers to host student files and projects. Servers are protected with a firewall Proxy server and Iprism Internet filtering software is in place to protect the students. Elementary and middle school sites have at least one server while the high school has several to run the various subnets. The district computer technicians and the Director of Information Services and Technology maintain the district network.

Physical Plant

Site servers and network infrastructure reside in locked server cabinets either in the LMC, office, or Library Media Center's. The elementary schools servers and can be locked and secured by passwords. Switches are placed in different places at each site depending on the structure of the network and are kept locked and therefore relatively secure. Student safety has been considered and physical setups arranged to secure safety from a fire hazard. There is room for expansion in all physical plants throughout the district.

Technical Support

Technical support is well organized and effective. The site level technology coordinators provide basic technical support at the 5 elementary schools and one middle school. Major technical support is provided by district technicians with an average response time of approximately 2- 4 hours. An onsite technician provides tech support at the high school. The current technical support will enable us to implement the Curriculum and Professional Development Components in this technology plan.

District technical support needs are addressed through one of four ways: an electronic work order sent to the Director of Information Services, paging the district technicians, telephoning the Director of Information Services or by email. There are three district technical support personnel; one at the high school and two throughout the district.

5C, D: Infrastructure, Hardware, Technical Support, and Software Component Goal

Goal: Each site will have adequate infrastructure, hardware, technical support, and software to implement the Curriculum Components of the Technology plan.

Objectives		Benchmarks/Implementation	
<ul style="list-style-type: none"> <input type="checkbox"/> All Library Media Centers will have a minimum of 10 computers. <input type="checkbox"/> All staff will have at least two multimedia capable machines that are running Windows 2000 Mac OS 10. <input type="checkbox"/> All sites will complete the online CDE Ed tech survey <input type="checkbox"/> All sites will maintain current computer inventories. <input type="checkbox"/> All sites will maintain current software inventories. <input type="checkbox"/> All sites will disseminate information on software applications that include a summary of the application and minimum specifications to the staff. <input type="checkbox"/> All sites will keep a log of computer problems and submit it to the Director of Information Services. 		<ul style="list-style-type: none"> <input type="checkbox"/> All sites will complete the computer inventory chart included with the technology plan by May 2003. <input type="checkbox"/> Prioritize and plan purchases needed to implement the technology plan as evidenced by the computer inventory chart by June 2003. <input type="checkbox"/> Purchase equipment needed to implement the curriculum component in years one and two of plan. Equipment purchases will follow the prioritized purchase plan developed in step 2 of the implementation process. (Appendix C and D) <input type="checkbox"/> Develop a uniform district software inventory form through the website by April 2003. <input type="checkbox"/> CDE /Edtech survey will be updated annually for each year of the plan if needed to document additional inventory. 	
Evaluation and Assessment	Schedule for Evaluation	Persons Responsible	Program Analysis and Modification
Track equipment through the CDE website Ed tech surveys	August in each plan year	Director of Information Services	Based on the information gathered and available budget, modifications to this plan may be made.
Track repair and technical issues through a site work order log	Monthly each year	Director of Information Services District technicians	
Collect necessary software and computer inventories and analyze for adequate implementation of the plan.	August in each plan year	Site Technology Coordinators Director of Information Services	

6. Funding and Budget Component

6A: List of established and potential funding sources and cost savings, present and future.

Established Funding:

Established funding has been fairly consistent. For the 02/03 school year the General Funds budget for Technology is \$735,676. This figure includes salaries for certificated and classified, employee benefits, books and supplies, services and other operating expenditures, and capitol outlay. See exact breakdown on page 30.

Potential funding can come from a variety of different resources. The Technology Innovation Challenge Grant 2002-2005 has another year and we would like to apply for another similar to grant to continue the work begun in 2002. We have also requested and submitted an application for funds from the Labor, Health and Human Services Appropriations. Besides the current application to the Enhancing Education through Technology Grant we will continue research and applications for Grants through CDE and CTAP referred funding sources, funding opportunities from local businesses and Universities, and possible opportunities through Travis Air Force Base.

In order to obtain the best prices, the majority of expenditures are through Cal Save and other State Approved Funding Agencies (SETS). We would like to investigate the possibility of doing a beta-test e-book pilot program. This program will include one school or perhaps one track at an elementary school.

6B: Estimate implementation costs for the term of the plan.

Since several schools have a relatively high student/ computer ratio, additional equipment will be needed to fully implement the Curriculum and Professional Development component. We would like to continue the Handhelds in the Middle School program begun in August 2002. In order to do this on a very limited basis we will need a minimum of 33 handheld computers comprising only one class set at approximately \$5,000 (33 handhelds at \$150.00 each). We would like to have a class set for each of the 15 participating teachers totaling approximately \$700,000.

Desktop Computers are needed to decrease student/ computer ratio to 10 to 1. At the minimum we would need 27 at Center Elementary School and 55 at Golden West Middle School totaling approximately \$62,000 at \$1000 each. The licenses would be approximately \$2,200 - 62 licenses at \$35 each)

The district currently has one district technology specialist/ mentor through the Technology Innovation Challenge Grant. When that grant expires in 04-05 we will need to find the additional funds to maintain that position. We need two mentors to service six schools: five elementary schools and one middle school. The cost of two mentors would be approximately \$150,000 per year.

Training and Workshops are necessary to maintain skills and keep abreast of new technology. Approximately \$10,000 per year would be needed in order to provide the most current Professional Development possible. See complete estimated costs on pages 30-32 of this plan. (Budget Form: Object of Expenditure)

6C. Description of the level of ongoing technical support the district will provide.

Ongoing support through the current administration is high. The district supports three full time technology technicians and utilizes high school student technicians when available. The district currently has one full time technology specialist servicing the Elementary and Middle School levels. Teachers at various sites have been trained in basic computer skills through district and CTAP sponsored workshops. Some Teachers and site Technology Coordinators have received additional training beyond basic computer skills relating to an introductory level of networking and printing.

Currently one technician services the high school and two technicians service the 5 elementary schools, middle school and district office. With approximately 350 computers, the ratio is approximately 1 to 175. If we break it down by schools each technician services three schools. One additional technician would change the ratio to 2 schools each, and approximately 115 computers.

6D: Description of the district's replacement policy for obsolete equipment.

Most computers are generally used until they are no longer functional. Systems that are no longer functional are scheduled for disposal. A district technician must approve the request before the site completes a Request to Move Equipment Form. The form is signed by the site administrator and forwarded to District Office.

All computer/ technology orders are approved by the Director of Information Services and must meet the minimum specifications as set by the district. Currently the minimum specifications for replacement equipment are:

- ❑ 256 Mg of RAM
- ❑ Pentium IV/ AMD 1700

- ❑ CD/DVD Rom
- ❑ 1.44 FD (Floppy Drive)
- ❑ 80G Hard Drive (minimum)
- ❑ NIC (Network Interface Card)
- ❑ 32M Video Card

We recognize and have discussed the need for an equipment replacement cycle. However, given current budget resources, it has not been feasible or cost effective to implement such a proposal. If computers are still operable, we use them. When it is no longer cost efficient to repair or upgrade them, they are removed and replaced.

After the desired number of computers is reached – a minimum of 10 students to 1 computer, we would like to have a 5 year replacement cycle in place in order to keep equipment updated. A system will need to be developed as to what to do with working computers that are outdated. This will be worked on by the Technology Team and presented to the Director of Information Services.

6E: Description of the feedback loop used to monitor progress and update funding and budget decisions.

Most feedback from sites comes through the district technicians, technology specialist, and site technology coordinators to the Director of Information Services. The Director holds district technology committee meetings for all coordinators Library Media Specialists and other pertinent personnel as needed – generally several times a year. Communication is ongoing (weekly) with the Technology Specialist and the Director as is communication between the Director and the district technicians. Information Service and Technology Department meetings are held as needed to review, analyze, discuss, and implement various projects, as well as to discuss funding, and budget.

Goal: Research and Apply for additional funding sources for the implementation of this plan.

Benchmarks:	Implementation:	
<ul style="list-style-type: none"> <input type="checkbox"/> Apply for additional federal grants to supplement the district technology budget. <input type="checkbox"/> Explore community resources for potential funding sources. <input type="checkbox"/> Modify (if necessary) the district policy for obsolete equipment <input type="checkbox"/> Establish workable obsolete equipment and replacement procedures 	<ul style="list-style-type: none"> <input type="checkbox"/> Determine the funds needed for implementation of the plan based on the data obtained from the Infrastructure, Hardware, Technical support, Budget and Funding, and Software and Equipment to be Upgrade forms in this plan by May 2003 <input type="checkbox"/> Evaluate current budget for available funds to implement the plan July 2003 <input type="checkbox"/> Meet with Tech Team to discuss options and funding availability <input type="checkbox"/> Research and contact community organizations for potential funding in each plan year beginning in July 2004 <input type="checkbox"/> Research and apply for additional grants in each plan year. <input type="checkbox"/> Continue ongoing technical support of existing hardware <input type="checkbox"/> Begin research for community funding by July 2003. <input type="checkbox"/> Establish workable replacement procedures by August 2004 <input type="checkbox"/> Present items or policy change recommendations to the School Board for approval. 	
Evaluation and Assessment	Schedule for Evaluation	Persons Responsible
Determine funds needed for implementation by May of each plan year.	May of each plan year	Director of Information Services Technology Specialist
Evaluate current resources for use in implementation of the plan	August of each plan year	Director of Information Services Technology Specialist
Correlate needs results with current budge to determine expenditures and modify as necessary	May of each plan year	Director of Information Services Technology Specialist
Documents representing obsolete and replacement policies are completed and approved.	September 2004	Director of Information Services Technology Specialist
Monitor progress toward outside funding monthly	July of each year	Director of Information Services

**Equipment to Be Upgraded or Acquired According to the Plan
2002 - 2006**

	In classrooms	In Computer Labs	In shared areas (Modules or LMC)	In Administrative Offices
Desktop computers				
Use as				
Upgrade				
To be retired when new or upgrade equipment is available				
Number needed				
Laptops				
Use as is				
Upgrade				
To be retired when new or upgrade equipment is available				
Number needed				

7. Monitoring and Evaluation Component

7A: Description of how technology's impact on student learning and attainment of the district's curricular goals, as well as classroom and school management, will be evaluated.

The impact of technology on student learning and attainment of the district's curricular goals will be assessed by monitoring student projects, websites, and self-assessments. The Technology Team, consisting of the Director of Information Services (IS), Technology Specialist, Library Media Coordinators, Site Technology Coordinators, and an administrator, will design rubrics for exemplary projects and curriculum goals and distribute these throughout the district. The Team will evaluate projects based on these rubrics.

Data will be collected and analyzed by the Tech Team during each plan year. Collected data will include:

- Test scores
- Percentage of students attaining content standards
- Percentage of dropouts
- Attendance
- Parent involvement

Self-assessment tools created by the Bellingham Public Schools (<http://www.bham.wednet.edu/assessment/techself.htm>) will be modified as needed for to measure growth and skills in Travis Unified School District and posted on the District website.

The Technology Team and Director of Information Services and Technology will use the Comprehensive Implementation Timeline on pages 38 – 50 to keep track of implementation goals, objectives, benchmarks, and action steps. The Implementation Timeline will be used at each meeting to guide the team and items will be checked off and dated as completed.

7B: Schedule for evaluating the effect of plan implementation.

The Comprehensive Implementation Plan serves as the schedule for this plan. Data will be collected in the spring of each plan year and evaluated in fall of each plan year. Some flexibility with the collection dates will be needed to take into account our year-round schools. The district technology team will meet once in each trimester to evaluate growth of technology plan goals at individual school sites and district wide and present annual reports to the Director of Information Services and Technology.

CTAP² will be monitored for Staff growth and development of computer proficiency skills and classroom technology use and Microsoft Class Server will be monitored by the Technology Specialist, Administrators, and Director of IS in January and May of each year with date modifications for year round schools. A presentation focused on student and staff growth and achievement will be given to the Superintendent, school board, and stakeholders in the fall of each plan year.

7C: Description of how the information obtained through the monitoring and evaluation will be used.

The Technology Team will analyze rubrics and assessment results for growth toward plan goals of each component in the spring of each plan year. Areas of need will be addressed by the Tech Team and reported to the Director of Information Services for implementation in the next plan year. Exemplary projects will be posted on the district web site along with Success stories to help encourage others

Information, data results, and graphs could be included in the District Report Card published at the start of each school year. An alternate would be to publish the results in a separate document and distributed. This document could include curriculum project ideas, success stories, units of study, and other information as needed to help keep everyone involved and informed.

Goal: Effective use of technology by students and staff will be evaluated annually.

Objectives	Benchmarks/Implementation	Program Analysis and Modification
<ul style="list-style-type: none"> <input type="checkbox"/> District technology team will meet once in each trimester to evaluate growth of technology plan goals at individual school sites <input type="checkbox"/> Annual reports will be written stating growth toward plan goals. <input type="checkbox"/> CTAP2 will be monitored <input type="checkbox"/> Microsoft Class Server will be monitored 	<ul style="list-style-type: none"> <input type="checkbox"/> District technology team will meet once in each trimester to evaluate growth of technology goals at individual school sites and submit a report to the Director of Information Services by June 2004 <input type="checkbox"/> Team will devise rubrics as needed for goals listed in the curriculum component. <input type="checkbox"/> The Tech Team will use Online technology assessments to measure growth in technology skills by May of each plan year <input type="checkbox"/> Teachers will use CTAP2 annually to measure their growth by May of each plan year and the District CTAP2 administrator – currently the Technology Specialist - will monitor the results. <input type="checkbox"/> An MClass Server Administrator will monitor MClass Server in January and June of each plan year. 	<ul style="list-style-type: none"> <input type="checkbox"/> Results will be presented at district technology meetings. <input type="checkbox"/> Modifications and Recommendations will be made to the implementation time line based on the data collected.
Evaluation and Assessment	Schedule for Evaluation	Persons Responsible
CTAP2 and MClass Server will be monitored by the software administrators and reports submitted to the Director on Information Services	June of each year	Technology Specialist Director of IS
Tech Team will analyze rubrics and assessment results for growth toward plan goals of each component	May of each plan year	Director of IS Technology Specialist Tech Team
Areas of need will be addressed by the Tech Team and implemented in the next plan year.	May of each plan year	Director of IS Technology Specialist Tech Team

Comprehensive Implementation Plan

Start Date	Completion Date	Activity or Benchmark	Target Audience	Person Responsible	Component
Mar-03		Obtain material of Big 6 Information Literacy	Staff and Students	Technology Specialist	Curriculum
Apr-03		Develop a uniform district software inventory form - on line through the website	Staff	Director of IS/ Tech Specialist	Hardware, Technical, Infrastructure
May-03		All sites will complete the computer inventory chart included with the technology plan	Staff	Site Technology Coordinators, Technology Specialist, Director of IS	Hardware, Technical, Infrastructure
May-03		Determine the funds needed for implementation of the plan based on the data obtained from the Infrastructure, Hardware, Technical support, and Software component of this plan	Staff	Director of IS/ Tech Specialist	Budget
Jun-03		The Technology Team will determine which Reading reports students will use to monitor progress and develop a system to collect the results	Students	Tech Team	Curriculum

Start Date	Completion Date	Activity or Benchmark	Target Audience	Person Responsible	Component
Jun-03		The Tech Team will have created a K-12 Technology Skills scope and sequence appropriate for each grade level	Staff	Tech Team	Professional Development
Jun-03		Prioritize and plan purchases needed to implement the technology plan as evidenced by the computer inventory chart	Staff and Students	Director of IS/ Tech Specialist	Hardware, Technical, Infrastructure
Jun-03		District technology team will meet once in each trimester to evaluate growth of technology goals at individual school sites	Staff	Director of IS/ Tech Specialist	Evaluation and Implementation
Jul-03		Evaluate current budget for available funds to implement the plan	Staff	Director of IS/ Tech Specialist	Budget
Jul-03		Begin research for community funding	Staff	Director of IS/ Tech Specialist	Budget
Aug-03		Tech Team will have created a rubric to evaluate critical thinking, and problem solving	Students	Tech Team	Curriculum
Aug-03		Tech Team will develop a Information Literacy K-12 Scope and Sequence	Students	Tech Team	Curriculum
Aug-03		Tech Team will develop a rubric and baseline project guidelines for Information Literacy	Staff	Tech Team	Professional Development

Start Date	Completion Date	Activity or Benchmark	Target Audience	Person Responsible	Component
Aug-03		Tech Team will have organized Information Literacy Workshops and Training.	Staff	Tech Team	Professional Development
Aug-03		Tech Team will develop CTAP2 leveled workshop outlines and submit for approval	Staff	Tech Team	Professional Development
Aug-03		A group of teachers will be recruited to pilot MClass Server	Staff	Principals, Director of IS, Technology Specialist	Professional Development
Aug-03		Library Media Specialists and Tech Team will have developed Information Literacy curriculum	Staff and Students	Director of IS/ Tech Specialist	Curriculum
Aug-03		Develop a collection of websites for students and teachers to supplement learning in Language Arts	Staff	Tech Team	Curriculum
Aug-03		Develop a rubric and baseline benchmarks for successful integration of PBL	Staff	Tech Team	Curriculum
Aug-03		Develop a student matrix of technology skills	Students	Tech Specialist	Curriculum
Aug-03		Develop guidelines for technology rich classes	Students	Director of IS/ Tech Specialist	Curriculum/ Profession Development

Start Date	Completion Date	Activity or Benchmark	Target Audience	Person Responsible	Component
Aug-03		Develop guidelines for teachers to ensure all students meet appropriate grade level expectation for Information Literacy	Staff and Students	Director of IS/ Tech Specialist	Curriculum/ Professional Development
Aug-03		Develop Information Literacy benchmark products	Staff and Students	Tech Team	Curriculum/ Professional Development
Aug-03		Develop Training materials for MClass Server	Staff	Director of IS/ Tech Specialist	Curriculum/ Professional Development
Aug-03		Begin Training staff in Big 6 Information Literacy Skills	Staff	Tech Team	Professional Development
Aug-03		Develop workshops based on CTAP2 proficiencies	Staff	Tech Specialist	Professional Development
Aug-03		CDE /Edtech survey will be updated annually for each year of the plan if needed to document additional inventory	Staff	Director of IS/ Tech Specialist	Hardware, Technical, Infrastructure
Aug-03		CDE /Edtech survey will be updated annually for each year of the plan if needed to document additional inventory	Staff	Director of IS/ Tech Specialist	Hardware, Technical, Infrastructure
Aug-03		CDE /Edtech survey will be updated annually for each year of the plan if needed to document additional inventory	Staff	Director of IS/ Tech Specialist	Hardware, Technical, Infrastructure
Sep-03		Develop an online student technology skills self assessment	Students	Tech Specialist	Curriculum
Jan-04		Determine LMC schedules for before and after schools hours	Students	Site Administrators	Curriculum
May-04		Tech Team will have developed a survey to measure the use and effectiveness of MClass Server	Students	Tech Team	Curriculum

Start Date	Completion Date	Activity or Benchmark	Target Audience	Person Responsible	Component
May-04		Develop an Intranet to host student products and enhance communication between staff	Staff	Tech Team	Curriculum
Jun-04		20% of 5th, 7th, and 10th grade students will utilize Internet resources to develop an integrated research project	Students	Principals, Director of IS, Technology Specialist	Curriculum
Jun-04		20% of 2nd through 6th grade students will use reports from Reading Counts or Accelerated Reader on a monthly basis to track their own growth and development	Students	Principals, Director of IS, Technology Specialist	Curriculum
Jun-04		20% of teachers will be trained in using age appropriate Big 6 Information Literacy skills	Staff	Principals, Director of IS, Technology Specialist	Professional Development
Jun-04		Develop a rubric to assess the level of critical thinking and problem solving	Staff	Tech Team	Curriculum
Aug-04		20% of students will use technology to create cross-curricular products	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-04		20% of students will use 66% of the required grade level Information Literacy skills	Students	Principals, Director of IS, Technology Specialist	Curriculum

Start Date	Completion Date	Activity or Benchmark	Target Audience	Person Responsible	Component
Aug-04		20% of students will achieve 50% of the International Society for Technology in Education (ISTE) technology standards for student	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-04		20% of students will complete the online student self-assessment of technology skills	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-04		25% of the Library Media Centers (LMC) will increase student access during non-school hours by 2 hours per week. (2 of 8 LMC's)	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-04		2 Elementary and 2 secondary technology-rich classes will be developed that include Special Education, English Language Learners, and GATE	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-04		40% of teachers will use 40% of the available screens in Aeries for student management to meet the needs of individual students	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-04		20% of teachers will use Microsoft Class Server to improve the home/ school connection	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-04		40% of participants will complete a survey on the effectiveness of MClass Server	Students	Principals, Director of IS, Technology Specialist	Curriculum

Start Date	Completion Date	Activity or Benchmark	Target Audience	Person Responsible	Component
Aug-04		25% of teachers will be trained how to create lessons that integrate critical thinking and problem solving activities and technology and Problem Based Learning	Staff	Principals, Director of IS, Technology Specialist	Professional Development
Aug-04		25% of teachers will be trained how to integrate technology into Language Arts using available web resources	Staff	Principals, Director of IS, Technology Specialist	Professional Development
Aug-04		25% of staff will improve technology skills in at least three areas of their choice	Staff	Principals, Director of IS, Technology Specialist	Professional Development
Aug-04		Pilot teachers will receive training in using Microsoft Class server to integrate technology into the curriculum and improve home/ school communication	Staff	Principals, Director of IS, Technology Specialist	Professional Development
Sep-04		Reading Counts (RC) and Accelerated Reader (AR) books will be earmarked by easy identification	Staff	Tech Team	Curriculum
Dec-04		Design workshops to train staff in Project Based Learning (PBL)	Staff	Director of IS/ Tech Specialist	Curriculum
Dec-04		Modify PBL training as necessary	Staff	Tech Team	Professional Development
Jun-05		40% of 5th, 7th, and 10th grade students will utilize Internet resources to develop an integrated research project	Students	Principals, Director of IS, Technology Specialist	Curriculum

Start Date	Completion Date	Activity or Benchmark	Target Audience	Person Responsible	Component
Jun-05		40% of 2nd through 6th grade students will use reports from Reading Counts or Accelerated Reader on a monthly basis to track their own growth and development	Students	Principals, Director of IS, Technology Specialist	Curriculum
Jun-05		40% of teachers will be trained in using age appropriate Big 6 Informational Literacy skills	Staff	Principals, Director of IS, Technology Specialist	Professional Development
Aug-05		40% of students will use technology to create cross-curricular products that demonstrate problem solving and critical thinking skills	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-05		20% of students will participate in online collaborative projects	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-05		40% of students will use 66% of the required grade level Information Literacy skills	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-05		40% of students will achieve 66% of the ISTI technology standards for student	Students	Principals, Director of IS, Technology Specialist	Curriculum

Start Date	Completion Date	Activity or Benchmark	Target Audience	Person Responsible	Component
Aug-05		40% of students will complete the online student self-assessment of technology skills	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-05		50% of the Library Media Centers will increase student access during non-school hours by 2 hours per week. (4 of 8 LMC's)	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-05		4 Elementary and 4 secondary technology-rich classes will be developed that include Special Education, English Language Learners, and GATE	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-05		60% of teachers will use 50% of the available screens in Aeries for student management to meet the needs of individual students	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-05		40% of teachers will use Microsoft Class Server to improve the home/ school connection	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-05		50% of participants will complete a survey on the effectiveness of MClass Server	Students	Principals, Director of IS, Technology Specialist	Curriculum

Start Date	Completion Date	Activity or Benchmark	Target Audience	Person Responsible	Component
Aug-05		40% of teachers will be trained how to create lessons that integrate critical thinking and problem solving activities and technology and Problem Based Learning	Staff	Principals, Director of IS, Technology Specialist	Professional Development
Aug-05		40% of teachers will be trained how to integrate technology into Language Arts using available web resources	Staff	Principals, Director of IS, Technology Specialist	Professional Development
Aug-05		50% of staff will improve technology skills in at least three areas of their choice	Staff	Principals, Director of IS, Technology Specialist	Professional Development
Aug-05		20% of teachers will receive training in using Microsoft Class server to integrate technology into the curriculum and improve home/ school communication	Staff	Principals, Director of IS, Technology Specialist	Professional Development
Aug-05		Purchase equipment needed to implement the curriculum component in years one and two of plan. Equipment purchases will follow the prioritized purchase plan developed in step 2 of the implementation process.	Staff and Students	Director of IS/ Tech Specialist	Hardware, Technical, Infrastructure
Jun-06		60% of 5th, 7th, and 10th grade students will utilize Internet resources to develop an integrated research project	Students	Principals, Director of IS, Technology Specialist	Curriculum

Start Date	Completion Date	Activity or Benchmark	Target Audience	Person Responsible	Component
Dec-05		Collect and assess samples of PBL that show critical thinking	Staff	Tech Team	Professional Development
Jun-06		60% of 2nd through 6th grade students will use reports from Reading Counts or Accelerated	Students	Principals, Director of IS, Technology Specialist	Curriculum
Jun-06		60% of teachers will be trained in using age appropriate Big 6 Information Literacy skills	Staff	Principals, Director of IS, Technology Specialist	Professional Development
Aug-06		60% of students will use technology to create cross-curricular products that demonstrate problem solving and critical thinking	Students	Tech Team	Curriculum
Aug-06		40% of students will participate in online collaborative project	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-06		60% of students will use 66% of the required grade level Information Literacy skills	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-06		60% of students will achieve 66% of the ISTE technology standards for student	Students	Principals, Director of IS, Technology Specialist	Curriculum

Start Date	Completion Date	Activity or Benchmark	Target Audience	Person Responsible	Component
Aug-06		60% of students will complete the online student self-assessment of technology skills	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-06		6 Elementary and 6 secondary technology-rich classes will be developed that include Special Education, English Language Learners, and GATE.	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-06		70% of teachers will 60% of available screens in Aeries for student management to meet the needs of individual students	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-06		60% of teachers will use Microsoft Class Server to improve the home/ school connection	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-06		75% of participants will complete a survey on the effectiveness of MClass Server	Students	Principals, Director of IS, Technology Specialist	Curriculum
Aug-06		60% of teachers will be trained how to create lessons that integrate critical thinking and problem solving activities and technology and Problem Based Learning	Staff	Principals, Director of IS, Technology Specialist	Professional Development
Aug-06		60% of teachers will be trained how to integrate technology into Language Arts using available web resources	Staff	Principals, Director of IS, Technology Specialist	Professional Development

Start Date	Completion Date	Activity or Benchmark	Target Audience	Person Responsible	Component
Aug-06		75% of staff will improve technology skills in at least three areas of their choice	Staff	Principals, Director of IS, Technology Specialist	Professional Development
Aug-06		40% of teachers will receive training in using Microsoft Class server to integrate technology into the curriculum and improve home/ school communication	Staff	Principals, Director of IS, Technology Specialist	Professional Development
May/ Annually		Use Online technology assessments to measure student growth in technology skills by May of each plan year	Staff	Director of IS/ Tech Specialist	Evaluation and Implementation
May/ Annually		Teachers will use CTAP2 annually to measure their growth by August of each plan year	Staff	Director of IS/ Tech Specialist	Evaluation and Implementation
May/ Annually		Meet with Tech Team to discuss options and funding availability	Staff	Director of IS/ Tech Specialist	Budget
May/ Annually		Research and apply for additional grants in each plan year.	Staff	Director of IS/ Tech Specialist	Budget

Monitoring and Evaluation Management Chart Technology Plan 2002 – 2005

Individual(s) Responsible Person or Job Title	Responsibilities
Director of Information Services	Provide Overall management and coordination
Director of Information Services Technology Specialist Education Services Department	Manage and Coordinate staff development
Director of Information Services	Manage and Coordinate hardware acquisition and installation
Director of Information Services Technology Specialist	Coordinate ongoing partner involvement
Tech Team	Collect data regarding students' computer skills
Tech Team	Collect data regarding students' academic achievement
Technology Specialist Director of Information Services and Technology Site Administrators	Collect staff development data on technology proficiencies
Tech Team	Collect data on Parent Involvement
Tech Team	Collect Data on percentages of absences and dropouts
Technology Specialist Director of Information Services and Technology	Collect data regarding staff development focused on integration of technology into the curriculum to improve academic achievement
Director of Information Services Technology Specialist	Use collected data to monitor and evaluate progress toward benchmarks and the timeline and to plan and make modifications
Site Technology coordinators Director of Information Services	Complete online CDE Ed tech survey - sites
Director of Information Services	Complete district level CDE Ed tech survey
Director of Information Services Technology Specialist	Re-evaluate Technology plan annually

8. Effective Collaborative Strategies with Adult Literacy Providers to Maximize the Use of Technology

8A: If the district has identified adult literacy providers, there is a description of how the program will be developed in collaboration with those providers.

Travis Unified School District has had an adult school in the past. Currently, the adult school has only a few Community Based English Tutoring (CBET) classes being offered at one of the elementary sites. It has been identified as an area that needs to be reworked to offer the parents and surrounding community adequate classes that integrate technology. We are collaborating with the Adult School to institute a program that includes the MOUS Certification (Microsoft Office User Specialist Certification Classes).

An educational program similar in nature to the High School's that includes adult technology skills will be implemented with appropriate funding for materials and teaching personnel. Connections through Microsoft Education for certification or local Universities for possible university credit for these classes will be researched and implemented when possible.

A "Travis Technology Academy" will be developed (using the above MOUS classes) through the Adult School and would help to bridge the educational gap between parents and their children. When children see their parents going to school, it helps to instill life-long learning skills in their children as well as helping to develop skills in the parents.

Classes will be held at Travis Education Center, or Library Media Centers in the Elementary Schools on Travis Air Force Base thus using available resources and maximizing the use of technology within the district.

9. Effective Researched Based Methods and Strategies.

9A: Description of how education technology strategies and proven methods for student learning, teaching, and technology management are based on relevant research and effective practices.

Curriculum goals were based on research from numerous websites on Technology and Education. Research from the following websites constituted the primary sources of information for curriculum goals, objectives, and assessment strategies:

- George Lucas Educational Foundation <http://www.glef.org>
- From Now On <http://www.fno.org>
- Kathy Schrock's Guide for Educators <http://school.discovery.com/schrockguide/>
- Technology and Learning <http://www.techlearning.com/>
- California Technology Assistance Program (CTAP) <http://www.ctap.org>
- Global Schoolhouse <http://www.gsn.org>
- CUE (California Using Educators) <http://www.cue.org>
- ISTE (International Society for Technology in Education) <http://www.iste.org>
- Microsoft in Education <http://www.microsoft.com/education>
- Palm in Education <http://www.palm.com/education/palmED/>
- K12 Handhelds <http://www.k12handhelds.com/index>
- Intel Teach to the Future <http://www97.intel.com/education/index.asp>
- Big 6 Literacy (<http://www.big6.com>)
- Bellingham Public Schools <http://www.bham.wednet.edu/assessment/techself.htm>
- No Child Left Behind (<http://www.nochildleftbehind.gov>)

It has been established that project based learning improves student achievement. Project based learning, along with online collaborative projects and multimedia help the students work together to achieve lifelong skills needed to be successful. Based on research from among the above websites, this plan focuses on using these proven strategies to increase student achievement, meet the content standards, develop lifelong learning skills, develop team effort, and teach self-assessment strategies. Therefore the goals listed in this plan are designed to implement different aspects of technology with the overall goal of developing all children to their fullest potential.

Project Based Learning

Project Based Learning (PBL) has been proven to show increased student interest and achievement by using real-life applications. Travis Unified School District is committed to supporting PBL in the classroom. The following research supports the district's belief that PBL will enhance student achievement and learning (Curriculum Goal 2).

1. *Improved Student Engagement, Collaboration and Achievement*

A five-year study by Stanford Research Institute (SRI) found that students engaged in Project Based Learning Activities outperformed their non- technology based counterparts in communication, teamwork and problem solving. In the Center for Learning in Technology, Bill Penuel found that participation in technology projects increased student engagement, produced greater personal responsibility for learning, increased peer collaboration, and produced greater student achievement gains by students that had been labeled as low-achievers.

Source: SRI International Evaluation of Challenge 2000 Multimedia Project (2000). Center for Technology in Learning, <http://www.pblmm.k12.ca.us/sri/SRIEvaluation.htm>

2. *Higher Mathematics Achievement in the Middle Grades*

“Educational Testing Service” researcher, Harold Wenglinsky, analyzed data from the mathematics portion of the 1996 National Assessment of Educational Progress given to 6,227 fourth graders and 7,146 eighth graders. He found that a combination of project based learning and technology resulted in achievement gains and that the effectiveness of computers in the classroom depended on how they were used.” (*Edutopia 2002*) He also found that using technology for drill and practice had a negative impact on achievement while using technology for Project-based real-life/ applications had a positive impact on achievement.

Source: Does It Compute: The Relations Between Educational Technology and Student Achievement (1995) <http://www.ets.org/research/pic/pir.html>

Laptops in Education

“Laptops in Education” is an effective way to get computers into every student’s hand to increase student achievement. As evidenced by the research, Travis Unified plans to use this pilot program to Reading and Language Arts (Curriculum Goal 1). Laptops in Education will also aid the implementation of PBL in the district (Curriculum Goal 2). Increased access to the laptops will also help improve student technology skills (Curriculum Goal 4).

3. *Improved Writing, Collaboration, and Active Teaching*

In a three-year Anytime Anywhere Learning Project by Microsoft, researchers found that using Laptop Computers in the Classroom had positive effects on student writing, collaboration and a deeper involvement in schoolwork. Data was collected from over 500 teachers and students who use laptops, and was matched and compared with groups of students and teachers who did not use laptops.

Students using laptops were more willing to edit and improve their writing; were more involved in their schoolwork, and explored more topics on their own than their non-laptop classmates. 80% of laptop students versus 46% of non-laptop students revised their work more often; 80% of laptop students versus 38% of non-laptop students were more willing to work on longer-term projects. Teachers using laptops also used more of a constructivist approach to teaching. They lectured less often and 90% of these educators stated that students taught each other more often rather than relying on the teacher for directions.

Source: www.microsoft.com/education/aal/research.asp

4. *Improvement in Student Attitude, Motivation and Behavior*

An Independent research group, Rockman et al, undertook a study to explore the experiences of the schools during the pilot year. Using surveys, interviews, and site visit observations, Rockman et al, sought to document the range of school models for the program, explore the schools' implementation processes, and investigate any impacts on teaching and learning. More than 400 teachers participated in the evaluation process.

Changes in student attitude, motivation, and behavior are seen within a very short time for those students participating in the program. Teachers identify an array of benefits to student learning strategies and to learning outcomes. Among the benefits widely perceived are increased collaboration, movement towards independent learning, greater enthusiasm for schooling, and more engagement in problem solving.

Teachers point out ways in which the availability of laptops and software tools can help individualize instruction for students with a range of needs - from special education to advanced students, from satisfying different learning styles to holding the attention of hard to reach students.

Source: <http://rockman.com/projects/laptop/laptopexec.htm>

Curriculum Integration

Travis Unified believes the integration of technology into the curriculum better supports the student's potential for learning. This belief is evidenced in Curriculum Goals 1, 2 and 3 and is supported by the following research.

5. *Increased Potential for Learning*

ACOT's (Apple Classrooms of Tomorrow) research demonstrated that the introduction of technology into classrooms can significantly increase the potential for learning, especially when it is used to support collaboration, information access, and the expression and representation of students' thoughts and ideas.

Source: <http://www.apple.com/education/k12/leadership/acot/history.html>

6. *Big6: An Essential Component for Problem Solving*

Information problem-solving approaches such as The Big6 are an essential component of information literacy, as they give individuals the skills they need to find and use information, as well as to filter out information they don't need. This is an essential skill in our modern age that is awash with information.

Source: *Research Foundations of The Big6™ Skills* By: Carrie Lowe <http://www.big6.com/showarticle.php?id=145>

Handheld Computers (Supports Goals 2 and 5)

Handheld Computers is another way to put technology into the hands of every student and is highly supportive of collaborative learning. Collaborative learning will help increase student achievement and PBL (Curriculum Goal 2) as well as providing a means to ensure appropriate access to every student (Curriculum Goal 5). The following research supports this belief.

7. *Handheld Computers Can Increase Learning in K-12 Classrooms*

The two-year study conducted by Independent research institute SRI (Stanford Research Institute) show results of the first objective, large-scale study of the use of handheld computers in more than 100 elementary and secondary classrooms across the United States.

Dr. Means, an SRI researched, found that "Twenty-five years of research on desktop computers has shown that, when used appropriately, technology can have a beneficial impact on teaching and learning." "The PEP (Palm Education Pioneer) evaluation study found that handheld computers can offer unique benefits to students and teachers. Students can have a personal, portable device ready-at-hand for individual or collaborative learning activities, wherever they go. Students can use handheld computers to collect data in the field, to learn vocabulary words while waiting to be picked up after soccer practice, or to self-quiz during a long car ride."

Teachers participating in the study reported a very high acceptance of handhelds in their classrooms and enthusiasm for the many enhancements they can bring to the learning process. Key findings include:

- 89% said they found the handhelds to be an effective instructional tool for teachers.
- 93% said they believe that handhelds can have a positive impact on students' learning.
- 95% said their students were "very" (66%) or "fairly" (29%) comfortable using the handhelds.
- 90% plan to continue using handhelds in the classroom post-study.
- 72% said handhelds are more easily used in the "flow of classroom activity" than desktop computers.

Source: <http://www.sri.com/news/releases/11-11-02.html>

8. *Handheld Computers Help Students with Special Needs*

For some special needs students, a seemingly simple writing assignment can be exasperating. Learning disabilities, dyslexia, or grapho-motor problems can cause students to struggle to write legibly on paper. Through the PEP program, a teacher at a New York middle school investigated how his special needs students could be helped with writing tasks through the use of handhelds with attached keyboards. This teacher reported that there was a significant decrease in student frustration with writing, and students became significantly more efficient at their daily work. With handheld computers, these students enjoyed and even looked forward to their writing tasks, he said.

Source: <http://www.sri.com/news/releases/11-11-02.html>

Complete copy of the report is available at <http://www.palmgrants.sri.com>

9. *Positive Impact of Handheld Computers in Classrooms*

"SRI's (Stanford Research Institute) findings are based on the work of real teachers, in actual classroom activities, not in the lab. SRI researchers collected data from teachers around the country who integrated handhelds in all kinds of classrooms, with all kinds of students."

The key findings of this report:

- 96 percent of respondents agreed or strongly agreed that handheld computers "are an effective instructional tool for teachers."
- 93 percent of respondents agreed or strongly agreed that "having a classroom set of handheld devices will have a positive effect on my teaching practice."
- 73 percent of respondents agreed or strongly agreed that handheld computers "are more easily used in the flow of classroom activity than desktop computers."

Teachers found that handheld computers helped transform "inquiry" learning activities into a more sophisticated experience by better supporting students in data collection and data interpretation. Teachers also found that handheld computers benefited their classrooms in numerous areas, including facilitating outdoor inquiry learning activities, classroom management, promoting student collaboration and interaction, and improving students' organizational skills.

Source: <http://www.palmgrants.sri.com>

Student Achievement

Travis Unified School District's belief that technology will support student achievement is illustrated throughout the technology plan. Specifically, growth in Reading and Language Arts, mathematics, and other areas are bolstered by the use of technology (Curriculum Goals 1, 2, 3, and 4). The following research corroborates these beliefs.

10. Technology Provides a Learning Advantage In Language Arts

In studies focusing on reading and language arts, technology has been shown to provide a learning advantage in the areas of phonological awareness (awareness of the structure of sounds in a language), vocabulary development, reading comprehension and spelling. Furthermore, there is evidence that students who use word processing software in combination with carefully sequenced instruction in the writing process or writing tools with built-in guidance in the writing process improve their writing significantly more than students without access to such tools, as do students who write to a real audience via the Internet or e-mail.

Source: 2000 Research Report on the Effectiveness of Technology in Schools: Executive Summary Software Industry Information Association SIIA <http://www.siiia.net/sharedcontent/store/e-edtech-sum00.pdf>

11. Technology Support Mathematic Achievement

Technology has been used effectively to support mathematics curricula that focus on problem solving and hands-on, constructivist, and experiential activities. Students participating in such technology-supported learning experiences have demonstrated superior conceptual understanding of targeted math topics than students receiving traditional instruction.

Source: 2000 Research Report on the Effectiveness of Technology in Schools: Executive Summary Software Industry Information Association SIIA <http://www.siiia.net/sharedcontent/store/e-edtech-sum00.pdf>

12. Kindergartners Improve with Technology

Kindergartners who have used technology have benefited in areas such as improved conceptual knowledge, reading vocabulary, reading comprehension, and creativity.

Source: 2000 Research Report on the Effectiveness of Technology in Schools: Executive Summary Software Industry Information Association SIIA <http://www.siiia.net/sharedcontent/store/e-edtech-sum00.pdf>

13. *Online Communication*

Use of online telecommunication for collaboration across classrooms in different geographic locations can improve academic skills.

Source: 2000 Research Report on the Effectiveness of Technology in Schools: Executive Summary Software Industry Information Association SIIA <http://www.siiia.net/sharedcontent/store/e-edtech-sum00.pdf>

14. *Collaborative Learning Raises Student Achievement Levels*

Students trained in collaborative learning on computer in small groups had higher student achievement, higher self-esteem and better attitudes toward learning than students working individually. The positive effects of collaborative learning were especially pronounced for low ability students and for female students.

Source: 2000 Research Report on the Effectiveness of Technology in Schools: Executive Summary Software Industry Information Association SIIA <http://www.siiia.net/sharedcontent/store/e-edtech-sum00.pdf>

15. *Gains In Standardized Test Scores Found With Technology*

Large-scale, statewide implementations of educational technology have been correlated to gains in standardized test scores.

Source: 2000 Research Report on the Effectiveness of Technology in Schools: Executive Summary Software Industry Information Association SIIA <http://www.siiia.net/sharedcontent/store/e-edtech-sum00.pdf>

Professional Development Research

Travis Unified School District believes that technology will improve teaching and student learning. Teacher development and support is critical to effective implementation. Our Professional Development Series incorporates many different methods of training. Taken as a whole, this program develops the whole teacher and accommodates different adult learning styles. The following research supports this philosophy.

16. Technology can improve teaching and learning

Technology can improve teaching and learning, but just having technology doesn't automatically translate to better instructional outcomes. Whether a given school experiences the potential benefits of technology depends on the software it chooses, what students actually do with the software and computer hardware, how educators structure and support technology-based learning and whether there is sufficient access to the technology.

Source: <http://www.siiia.net/sharedcontent/store/e-edtech-sum00.pdf>

17. Teacher Development and Support Is Essential

If we want students to engage in appropriate technology-based learning experiences and if we want educators to successfully structure and support these experiences, then teacher professional development and support is essential.

Source: <http://www.siiia.net/sharedcontent/store/e-edtech-sum00.pdf>

18. The Amount of Training is Significant

Students of teachers with more than 10 hours of training significantly outperformed students of teachers with 5 or fewer training hours. Educators are more effective after receiving extensive training in the integration of technology with the curriculum.

Source: <http://www.siiia.net/sharedcontent/store/e-edtech-sum00.pdf>

19. Teacher Decisions and Training

Teacher professional development and decisions about how computers are to be used in instruction may matter more than how often technology is used.

Source: <http://www.siiia.net/sharedcontent/store/e-edtech-sum00.pdf>

20. *Leadership is a Key Factor*

District-level involvement and the leadership of a school-level computer coordinator are key factors in developing a school environment conducive to effective use of technology.

Source: <http://www.sija.net/sharedcontent/store/e-edtech-sum00.pdf>

21. *Barriers to Computer Use in the Classroom*

The barriers to the use of computers and the Internet for instruction most frequently reported by public school teachers were not enough computers (78 percent), lack of release time for teachers to learn how to use computers or the Internet (82 percent), and lack of time in the schedule for students to use computers in class (80 percent).

Source: "Teachers' Tools for the 21st Century: A Report on Teachers' Use of Technology," National Center for Education Statistics. http://www.teacheruniverse.com/news/research/teachers_tools_0309.html

22. *Sustained Professional Development*

The most effective professional development activities are sustained over a long period of time and carefully planned to provide teachers with early and ongoing feedback.

Source: "An Ambitious Vision of Professional Development for Teachers," Tom Ganser, Director of Field Experience, University of Wisconsin. http://www.teacheruniverse.com/news/research/ambitious_vision.htm

23. *Technology support programs are more effective when directed by well-trained technology coordinators*

Technology support programs are more effective when directed by well-trained technology coordinators who are trained to bridge technical ability with classroom teaching experience; who are equipped with leadership and administrative capacities; and who have developed aptitude for instructional design.

Source: *Technology support programs are more effective when directed by well-trained technology coordinators* <http://www.teacheruniverse.com/news/research/crito.html>

24. *Successful Integration of Technology requires technical support.*

Findings confirm that successful integration of technology into the classroom requires the availability of quality multifaceted technical support comprising elements as general as routine maintenance and as specific as individualized training.

Source: Technology support programs are more effective when directed by well-trained technology coordinators
<http://www.teacheruniverse.com/news/research/crito.html>

9B: Description of thorough and thoughtful examination of externally or locally developed education technology models and strategies.

1. Participants learn by doing.

For part of the time, participants assume the role of students to examine a technology-rich activity — learning technology skills in the context of doing a relevant task. ACOT research has found that technology is best learned when it is applied to the solution of real problems.

2. Activities are relevant to participants' educational roles.

All workshop participants plan projects that they will implement when they return to their schools. To accelerate this process, participants bring their own lesson plans to work on. ACOT research has shown that applying new ideas to familiar curriculum facilitates the transfer of new ideas into teachers' own classrooms.

3. Leaders model appropriate instructional strategies.

To reinforce the participants' experience, workshop leaders model the role of “teacher as facilitator.” They also create working groups in which participants at different skill levels learn from one another.

4. Reflection and collaboration are part of learning.

Each workshop provides time for participants to discuss what they're learning and to reflect on its impact. ACOT research has shown that professional growth is accelerated when teachers have time to reflect and to integrate new ideas with their own beliefs about teaching and learning. Workshop leaders also encourage collaboration among participants during the sessions, and the two-person-team recommendation (see the next principle) helps sustain collaboration after the conclusion of the sessions.

5. Leaders and other participants provide ongoing support.

Participants should attend workshops as a two-person team and participate in collaborative learning activities that provide team-building experiences. ACOT research found that continued growth occurs when teachers develop support teams with whom they discuss and critique practice on a regular basis.

6. **Individually Guided Development:**

The teacher designs his or her learning activities. An assumption of this model is that being able to select their own learning goals and means for accomplishing those goals motivates individuals. A belief that underlies this model is that self-directed development empowers teachers to address their own problems and by so doing, creates a sense of professionalism.

Source: <http://www.ncrel.org/sdrs/areas/issues/educatrs/profdevl/pd2fimo.htm> (Items 1 - 6)

7. **Ongoing Sustainable Support for Effective Professional Development**

Effective support that focuses on curriculum and technology integration at the school site can be provided by a trainer, a mentor, or with the support of a coach. Support can be one-on-one, in small groups, by grade-level, by department, or by skill level

What is a Trainer?

A Trainer...

- Has expertise on specific software applications or technology.
- May or may not understand the use of technology as part of the curriculum.
- Creates or has reference materials that support the workshop.
- May or may not be a teacher.
- May be a teacher at the site, a teacher on special assignment, a technology coordinator or an outside independent contractor.
- Spends at least one hour of planning for every hour of the workshop.
- Shares some examples of projects that may or may not be their own.
- Has a dynamic personality with a good sense of humor and innovative ways of grabbing attention.
- Receives a stipend, salary, or paid as a consultant to present the workshop.
- May provide workshops before, during, or after school plus evenings or weekends.

What is a mentor?

A technology mentor...

- May be a full- or part-time teacher.
- Creates projects to use with students, model, and demonstrate to colleagues.
- May receive release time or stipends to develop a model project and prepare materials.
- May receive a stipend for advanced workshops.

- Attends conferences and brings back information to share with colleagues.
- Assists trainer during workshops.
- Provides support for colleagues during the school day.
- Answers questions and helps teachers develop technology projects.

What is a Coach?

A coach...

- Has curriculum background and understands content and technology standards.
- Has mastered personal and instructional use of technology.
- Has developed a rich library of curriculum-driven support materials and technology enhanced resources for grade levels and subject areas for teachers involved with coaching.
- Is a good listener, asks open-ended questions and uses pauses effectively.
- Observes classroom situations objectively.
- Is a good note-taker, researcher and team player.
- Models lessons and strategies.
- Prepares new support materials customized to the teacher's curriculum.
- Provides feedback and new ideas for different situations.
- Can be available for support either on-site or on-line.

Source: <http://www.compstrategies.com/home.html>

9C: Description of development and utilization of innovative strategies for using technology to deliver rigorous academic courses and curricula, including distance-learning technologies (particularly in areas that would not otherwise have access to such courses or curricula due to geographical distances or insufficient resources.)

Travis Unified School District has always been on the cutting edge of technology and interested in pursuing innovative strategies to help increase student achievement

Cyber High

Cyber High is a High School program designed to help the students meet academic standards at the Continuation School. Cyber High is a comprehensive electronic high school that is available to any student with Internet access (All students have Internet access while at school). The Cyber High curriculum is aligned with the Content Standards and Frameworks of California. The goal of Cyber High is to integrate educational curriculum and technology in using the power of the World Wide Web to break down barriers imposed by classroom walls and provide students with experiences and resources not possible in the traditional educational setting.

Handhelds in the Middle School

The “Handhelds in the Middle School “pilot program started in August 2002. Fifteen teachers and District Administrators have been trained in using handheld computers and curriculum applications. Handheld computers and software will need to be purchased as the program progresses. Teacher Training in handheld use and curriculum integration is ongoing in 2003 and will expand to the students in 2004.

Technology Innovation Challenge Grant

The TICG began last year and will continue through the 2003-2004 school year. A technology specialist was hired to implement the grant and work on designing a Staff Development Model for effective technology integration. The technology specialist works directly with teachers and is based at the school site providing real time support and guidance. Teachers decide what type of project and the curriculum content area. Various models of training encompassing all seven of the areas listed in section 9b are used in order to effectively reach a wide variety of teaching styles and methodologies. Numerous multimedia projects have been created and have been posted on the district website.

http://www.travisusd.k12.ca.us/travisusd/tusd/administration/departments/information_services/technology_titans/index.htm

The Robotics Club

Led by Vanden High School Physics and Woodshop/Drafting Instructors, the program challenges high school students to build a robot according to specifics and enter competitions. The purpose of the FIRST Robotics competition is to excite more young people about the fun, accessibility, and importance of science and engineering. The program teaches students in the most concrete possible way, what engineering is, and what they themselves can create and achieve through engineering. The experience and knowledge gained from this competition is priceless.

Video Streaming

Video Streaming Projects that deliver instructional video via the World Wide Web have been considered. Two teachers, working as a team with the Teacher Leadership Academy (TLA) and funded by the California Technology Assistance Program (CTAP) are creating a multi-discipline project incorporating Video on Demand (VOD). The Project will be implemented by two or three teachers in May of 2003 and will provide students will real time learning as they attempt to pass a bill through a mock Congress comprised of the three classrooms. *(At this time, we are using Video on Demand on a 3-month introductory pilot with Napa Solano County. With sufficient interest, VOD can be purchased for all students in the district.)*

An Innovative Strategies being considered in Travis Unified School District is the E-Book Laptop Learning Program

The E-Book Laptop Learning Program will provide every child in a pilot school with a laptop and e-books instead on printed textbooks. E-Books are digital versions of printed books, which are displayed on specialized reading devices or on PCs and laptops. A few copies of the printed books would still be available for use when needed.

Appendix A: Criteria of Review

This worksheet has been established by the *Commission on Technology in Learning* to assist in assessing technology plans. The criteria should be applied to plans seeking to be certified by the state.

1. PLAN DURATION	Page in District Plan	Adequately Addressed	Not Adequately Addressed
a. The plan should guide the district's use of education technology for the next 3-5 years.	5	The benchmarks and timelines in the plan outline activities and strategies for the next 3-5 years.	The benchmarks are not associated with any particular timeline or the timeline is less than 3 years or more than 5 years in length.

2. STAKEHOLDERS	Page in District Plan	Adequately Addressed	Not Adequately Addressed
a. Description of how a variety of stakeholders from within the school district and the community-at-large participated in the planning process.	5	The planning team consisted of representatives who will implement the plan, including district curriculum and information technology staff, site administrators, teachers, students, parents, community non-profits and businesses. If a variety of stakeholders did not assist with the development of the plan, a description of why they were not involved is included.	Little evidence is included that shows that the district actively sought participation from a variety of stakeholders.

3. CURRICULUM COMPONENT	Page in District Plan	Adequately Addressed	Not Adequately Addressed
a. Description of teachers' and students' current access to technology tools both during the school day and outside of school hours.	6	The plan describes the technology access available in the classrooms, library/media centers, or labs for all students, including special education, GATE, English Language Learners, etc., both during and after school hours.	The plan explains technology access in terms of a student-to-computer ratio, but does not explain if computers are in the classrooms, library/media centers, or labs, who has access, and when various students and teachers can use the technology.
b. Description of the district's current use of hardware and software to support teaching and learning.	6	The plan describes the typical frequency and type of use (technology skills/information literacy/integrated into the curriculum) generally by type of school and/or academic subject.	The plan recites district policy regarding use of technology, but provides no information about its actual use.
c. Summary of the district's curricular goals and academic content standards as spelled out in various district and site comprehensive planning documents.	7	The plan references other <u>district</u> documents that guide the curriculum and/or establish goals and standards.	The plan does not reference district curriculum goals.
d. List of clear goals and a specific implementation plan for using technology to <u>improve teaching and learning</u> by supporting the district curricular goals and academic content standards.	9, 10	The plan clearly identifies grade levels, subjects, or student populations that will be the focus for the term of the plan. The plan delineates clear, specific and realistic goals for using technology to support the district's curriculum goals and academic content standards to improve learning. The implementation plan clearly supports accomplishing the goals.	The plan suggests how technology will be used, but is not specific enough to know what action needs to be taken to accomplish the goals.

<p>e. List of clear goals and a specific implementation plan as to how and when students will <u>acquire technology and information literacy skills</u> needed to succeed in the classroom and the workplace.</p>	<p>11, 12</p>	<p>For the focus areas, the plan delineates clear, specific and realistic goals for using technology to help students acquire technology and information literacy skills. The implementation plan clearly supports accomplishing the goals.</p>	<p>The plan suggests how technology will be used, but is not specific enough to determine what action needs to be taken to accomplish the goals.</p>
<p>f. List of clear goals and a specific implementation plan for programs and methods of utilizing technology that <u>ensure appropriate access to all students</u>.</p>	<p>13</p>	<p>For the focus areas, the plan delineates clear, specific and realistic goals for using technology to support the progress of all students, including special education, GATE, English Language Learners, etc. The implementation plan clearly supports accomplishing the goals.</p>	<p>The plan suggests how technology will be used, but is not specific enough to know what action needs to be taken to accomplish the goals.</p>
<p>g. List of clear goals and a specific implementation plan to utilize technology to <u>make student record keeping and assessment more efficient and supportive of teachers' efforts to meet individual student academic needs</u>.</p>	<p>14</p>	<p>The plan delineates clear, specific and realistic goals for using technology to support the district's student record-keeping and assessment efforts. The implementation plan clearly supports accomplishing the goals.</p>	<p>The plan suggests how technology will be used, but is not specific enough to know what action needs to be taken to accomplish the goals.</p>
<p>h. List of clear goals and a specific implementation plan to utilize technology to <u>make teachers and administrators more accessible to parents</u>.</p>	<p>15</p>	<p>The plan delineates clear, specific and realistic goals for using technology to facilitate improved two-way communication between home and school. The implementation plan clearly supports accomplishing the goals.</p>	<p>The plan suggests how technology will be used, but is not specific enough to know what action needs to be taken to accomplish the goals.</p>
<p>i. List of benchmarks and a timeline for implementing planned strategies and activities.</p>	<p>9 -15</p>	<p>The benchmarks and timeline are specific and realistic. Teachers, administrators and students implementing the plan can easily discern what steps will be taken, by whom, and when.</p>	<p>The benchmarks and timeline are either absent or so vague that it would be difficult to determine what should occur at any particular time.</p>
<p>j. Description of the process that will be used to monitor whether the strategies and methodologies utilizing technology are being implemented according to the benchmarks and timeline.</p>	<p>9 - 15</p>	<p>The monitoring process is described in sufficient detail so that who is responsible, and what is expected is clear.</p>	<p>The monitoring process is either absent, or lacks detail regarding who is responsible and what is expected.</p>

4. PROFESSIONAL DEVELOPMENT COMPONENT	Page in District Plan	Adequately Addressed	Not Adequately Addressed
a. Summary of the teachers' and administrators' current technology skills and needs for professional development.	16	The plan provides a clear summary of the teachers' and administrators' current technology skills and needs for professional development. The findings are summarized in the plan by discrete skills in order to facilitate providing professional development that meets the identified needs and plan goals.	Description of current level of staff expertise is too general or relates only to a limited segment of the district's teachers and administrators in the focus areas or does not relate to the focus areas, i.e. only the fourth grade teachers when grades 4-8 are the focus grade levels.
b. List of clear goals and a specific implementation plan for providing professional development opportunities based on the needs assessment and the Curriculum Component goals, benchmarks, and timeline.	17-21	The plan delineates clear, specific and realistic goals for providing teachers and administrators with sustained, ongoing professional development necessary to implement the Curriculum Component of the plan. The implementation plan clearly supports accomplishing the goals.	The plan speaks only generally of professional development and is not specific enough to ensure that teachers and administrators will have the necessary training to implement the Curriculum Component.
c. List of benchmarks and a timeline for implementing planned strategies and activities.	17-21	The benchmarks and timeline are specific and realistic. Teachers and administrators implementing the plan can easily discern what steps will be taken, by whom, and when.	The benchmarks and timeline are either absent or so vague that it would be difficult to determine what steps will be taken, by whom, and when.
d. Description of the process that will be used to monitor whether the professional development goals are being met and whether the planned professional development activities are being implemented in accordance with the benchmarks and timeline.	17-21	The monitoring process is described in sufficient detail so that who is responsible and what is expected is clear.	The monitoring process is either absent, or lacks detail regarding who is responsible and what is expected.

5. INFRASTRUCTURE, HARDWARE, TECHNICAL SUPPORT, AND SOFTWARE COMPONENT	Page in District Plan	Adequately Addressed	Not Adequately Addressed
a. List of each site’s technology hardware, electronic learning resources, networking and telecommunication infrastructure, physical plant modifications, and technical support needed by teachers, students, and administrators to support the activities in the Curriculum and Professional Development Components of the plan.	22 -24	The plan clearly summarizes the technology hardware, electronic learning resources, networking and telecommunication infrastructure, physical plant modifications, and technical support proposed for each site to support the implementation of the Curriculum and Professional Development Components.. The plan also includes the list of items to be acquired which may be included as an appendix.	The plan includes a description or list of hardware, infrastructure and other technology necessary to implement the plan, but there doesn’t seem to be any real relationship between the activities in the Curriculum and Professional Development Components and the listed equipment. Future technical support needs have not been addressed or do not relate to the needs of the Curriculum and Professional Development Components.
b. List of each site’s existing hardware, Internet access, electronic learning resources, and technical support already in the district that could be used to support the Curriculum and Professional Development Components of the plan.	24 -25	The plan clearly summarizes the existing technology hardware, electronic learning resources, networking and telecommunication infrastructure, and technical support for each site to support the implementation of the Curriculum and Professional Development Components. The plan includes an up-to-date inventory of each site’s technology resources. This may be included as an appendix. The current level of technical support is clearly explained.	The inventory of equipment is not by site or is so general that it is difficult to determine what must be acquired to implement the Curriculum and Professional Development Components. The summary of current technical support is missing or lacks sufficient detail.
c. List of clear benchmarks and a timeline for obtaining the hardware, infrastructure, learning resources and technical support required to support the other components of the plan.	26	The benchmarks and timeline are specific and realistic. Teachers and administrators implementing the plan can easily discern what needs to be acquired or repurposed, by whom, and when.	The benchmarks and timeline are either absent or so vague that it would be difficult to determine what needs to be acquired or repurposed, by whom, and when.
d. Description of the process that will be used to monitor whether the goals and benchmarks are being reached within the specified time frame.	26	The monitoring process is described in sufficient detail so that who is responsible and what is expected is clear.	The monitoring process is either absent, or lacks detail regarding who is responsible and what is expected.

6. FUNDING AND BUDGET COMPONENT	Page in District Plan	Adequately Addressed	Not Adequately Addressed
a. List of established and potential funding sources and cost savings, present and future.	27	The plan clearly describes resources* that are available or could be obtained to implement the plan. The process for identifying future funding sources is described.	Resources to implement the plan are not identified or are so general as to be useless.
b. Estimate implementation costs for the term of the plan (3-5 years).	27 & 30 - 32	Cost estimates are reasonable and address the total cost of ownership.	Cost estimates are unrealistic, lacking, or are not sufficiently detailed to determine if the total cost of ownership is addressed.
c. Description of the level of ongoing technical support the district will provide.	28	The plan describes the level of technical support that will be provided for implementation given current resources and describes goals for additional technical support should new resources become available. The level of technical support is based on some logical unit of measure, such as number of computers.	The description of the ongoing level of technical support is either vague or not included; is so inadequate that successful implementation of the plan is unlikely, or is so unrealistic as to raise questions of the viability of sustaining that level of support.
d. Description of the district's replacement policy for obsolete equipment.	28	Plan recognizes that equipment will need to be replaced and outlines a realistic replacement plan that will support the Curriculum and Professional Development Components	Replacement policy is either missing or vague. It is not clear that the replacement policy could be implemented.
e. Description of the feedback loop used to monitor progress and update funding and budget decisions.	29	The monitoring process is described in sufficient detail so that who is responsible, and what is expected is clear.	The monitoring process is either absent, or lacks detail regarding who is responsible and what is expected.

* In this document, the term “resources” means funding, in-kind services, donations, or other items of value.

7. MONITORING AND EVALUATION COMPONENT	Page in District Plan	Adequately Addressed	Not Adequately Addressed
a. Description of how technology’s impact on student learning and attainment of the district’s curricular goals, as well as classroom and school management, will be evaluated.	35	The plan describes the process for evaluation utilizing the goals and benchmarks of each component as the indicators of success.	No provision for an evaluation is included in the plan. How success is determined is not defined. The evaluation is defined, but the process to conduct the evaluation is missing.
b. Schedule for evaluating the effect of plan implementation.	36, 38-50	Evaluation timeline is realistic .	The evaluation timeline is not included or indicates an expectation of unrealistic results that does not support the continued implementation of the plan.
c. Description of how the information obtained through the monitoring and evaluation will be used.	36	The plan describes a process to report the monitoring and evaluation results to persons responsible for implementing and modifying the plan, as well as the plan stakeholders.	The plan does not provide a process for using the monitoring and evaluation results to improve the plan and/or disseminate the findings.

8. EFFECTIVE COLLABORATIVE STRATEGIES WITH ADULT LITERACY PROVIDERS TO MAXIMIZE THE USE OF TECHNOLOGY Corresponding EETT Requirement(s): 11	Page in District Plan	Adequately Addressed	Not Adequately Addressed
a. If the district has identified adult literacy providers, there is a description of how the program will be developed in collaboration with those providers.	52	The plan explains how the program will be developed in collaboration with adult literacy providers. Planning included or will include consideration of collaborative strategies and other funding resources to maximize the use of technology.	There is no evidence that the plan has been, or will be developed in collaboration with adult literacy service providers, to maximize the use of technology.

9. EFFECTIVE, RESEARCHED-BASED METHODS AND STRATEGIES: Corresponding EETT Requirement(s): 4 & 9	Page in District Plan	Adequately Addressed	Not Adequately Addressed
a Description of how education technology strategies and proven methods for student learning, teaching, and technology management are based on relevant research and effective practices.	53 – 63	The plan describes the relevant research behind the plan’s design for strategies and/or methods selected.	The description of the research behind the plan’s design for strategies and/or methods selected is unclear, unreliable, or missing.
b. Description of thorough and thoughtful examination of externally or locally developed education technology models and strategies.	64 - 66	The plan describes references to research literature that supports why or how the model improves student achievement.	No research is cited.
c. Description of development and utilization of innovative strategies for using technology to deliver rigorous academic courses and curricula, including distance learning technologies (particularly in areas that would not otherwise have access to such courses or curricula due to geographical distances or insufficient resources).	67 - 68	The plan describes the process for development and utilization of strategies to use technology to deliver specialized or rigorous academic courses and curricula, including distance learning.	There is no plan to utilize technology to extend or supplement the district’s curriculum offerings

Appendix B: Site Software Resources Inventory

Name of Software	Edition	Publisher	Number of Licenses	Category

Categories include: Multimedia, Publishing, Specific Skills, Collaboration

Appendix C: Chart of Equipment Needed

Site	Computers	Printers	Peripherals
Cambridge			
Center			
Foxboro			
Scandia			
Travis			
Golden West			
Vanden			
Travis Education Center			

Appendix D: School Site Inventory of Peripherals

Peripherals	Number on Hand	Number Needed
Digital Cameras		
Scanners/ digitizers		
Assistive/ adaptive devices		
Printers		
VCR unit		
Video Camera		
TV monitor		
Computer Screen Projector (LCD)		
Handheld Computers		
Alpha Smarts		
Other (list)		

Appendix E: Technology Foundation Standards for Students

(Taken from International Society for Technology for Education ISTE)

1. Basic operations and concepts

- *Students demonstrate a sound understanding of the nature and operation of technology systems.*
- *Students are proficient in the use of technology.*

2. Social, ethical, and human issues

- *Students understand the ethical, cultural, and societal issues related to technology.*
- *Students practice responsible use of technology systems, information, and software.*
- *Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.*

3. Technology productivity tools

- *Students use technology tools to enhance learning, increase productivity, and promote creativity.*
- *Students use productivity tools to collaborate in constructing technology-enhanced models, preparing publications, and producing other creative works.*

4. Technology communications tools

- *Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.*
- *Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.*

5. Technology research tools

- *Students use technology to locate, evaluate, and collect information from a variety of sources.*
- *Students use technology tools to process data and report results.*
- *Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.*

6. Technology problem-solving and decision-making tools

- *Students use technology resources for solving problems and making informed decisions.*
- *Students employ technology in the development of strategies for solving problems in the real world.*

Prior to completion of Grade 2 students will:

- 1. Use input devices (e.g., mouse, keyboard, remote control) and output devices (e.g. monitor, printer) to successfully operate computers. (1)*
- 2. Use a variety of media and technology resources for directed and independent learning activities. (1, 3)*
- 3. Communicate about technology using developmentally appropriate and accurate terminology. (1)*
- 4. Use developmentally appropriate multimedia resources (e.g., interactive e-books, educational software, elementary multimedia encyclopedias) to support learning. (1)*
- 5. Work cooperatively and collaboratively with peers, family members, and others when using technology in the classroom. (2)*
- 6. Demonstrate positive social and ethical behaviors when using technology. (2)*
- 7. Practice responsible use of technology systems and software. (2)*
- 8. Create developmentally appropriate multimedia products with support from teachers, family members, or student partners. (3)*
- 9. Use technology resources (e.g., puzzles, logical thinking programs, writing tools, digital cameras, and drawing tools) for problem solving, communication, and illustration of thoughts, ideas, and stories. (3, 4, 5, 6)*
- 10. Gather information and communicate with others using telecommunications, with support from teachers, family members, or student partners. (4)*

Prior to Completion of Grade Five Students will:

- 1. Use keyboards and other common input and output devices (including adaptive devices when necessary) efficiently and effectively. (1)*
- 2. Discuss common uses of technology in daily life and advantages and disadvantages those uses provide. (1, 2)*
- 3. Discuss basic issues related to responsible use of technology and information; and describe personal consequences of inappropriate use. (2)*
- 4. Use general-purpose productivity tools and peripherals to support personal productivity, to remediate skill deficits, and to facilitate learning throughout the curriculum. (3)*
- 5. Use technology tools (e.g., multimedia authoring, presentation, web tools, digital cameras, and scanners) for individual and collaborative writing, communication, and publishing activities to create knowledge products for audiences inside and outside the classroom. (3, 4)*
- 6. Use telecommunications efficiently and effectively to access remote information and communicate with others in support of direct and independent learning and for pursuit of personal interests. (4)*
- 7. Use telecommunications and on-line resources (e.g., email, online discussions, web environments) to participate in collaborative problem solving activities to develop solutions or products for audiences inside and outside the classroom. (4, 5)*
- 8. Use technology resources (e.g., calculators, data collection probes, videos, educational software) for problem-solving, self-directed learning, and extended learning activities. (5, 6)*
- 9. Determine when technology is useful and select the appropriate tool(s) and technology resources to address a variety of tasks and problems. (5, 6)*
- 10. Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources. (6)*

Prior to completion of Grade 8 students will:

- 1. Apply strategies for identifying and solving routine hardware and software problems that occur during everyday use. (1)*
- 2. Demonstrate knowledge of current changes in information technologies and the effect those changes have on the workplace and society. (2)*
- 3. Exhibit legal and ethical behaviors when using information and technology, and discuss consequences of misuse. (2)*
- 4. Use content-specific tools, software and simulations (e.g., environmental probes, graphing calculators, exploratory environments, and Web tools) to support learning and research. (3, 5)*
- 5. Apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum. (3, 6)*
- 6. Design, develop, publish and present products (e.g., Web pages, video tapes) using technology resources that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom. (4,5, 6)*
- 7. Collaborate with peers, experts, and others using telecommunications and collaborative tools to investigate curriculum-related problems, issues, and information, and to develop solutions or products for audiences inside and outside the classroom. (4, 5)*
- 8. Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems. (5, 6)*
- 9. Demonstrate an understanding of concepts underlying hardware, software, and connectivity, and practical applications to learning and problem solving. (1, 6)*
- 10. Research and evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources concerning real-world problems. (2, 5, 6)*

Prior to completion of Grade 12 students will:

- 1. Identify capabilities and limitations of contemporary and emerging technology resources and assess the potential of these systems and services to address personal, lifelong learning, and workplace needs. (2)*
- 2. Make informed choices among technology systems, resources, and services. (1, 2)*
- 3. Analyze advantages and disadvantages of widespread use and reliance on technology in the workplace and in society as a whole. (2)*
- 4. Demonstrate and advocate legal and ethical behaviors among peers, family, and community regarding the use of technology and information. (2)*
- 5. Use technology tools and resources for managing and communicating personal/professional information (e.g., finances, schedules, addresses, purchases, and correspondence). (3, 4)*
- 6. Evaluate technology-based options, including distance and distributed education, for lifelong learning. (5)*
- 7. Routinely and efficiently use on-line information resources to meet needs for collaboration, research, publications, communications, and productivity. (4, 5, 6)*
- 8. Select and apply technology tools for research, information analysis, problem solving, and decision-making in content learning. (4, 5)*
- 9. Investigate and apply expert systems, intelligent agents, and simulations in real-world situations. (3, 5, 6)*
- 10. Collaborate with peers, experts, and others to contribute to a content related knowledge base by using technology to compile, synthesize, produce, and disseminate information, models, and other creative works. (4, 5, 6)*

Appendix E: Standards Correlations and Curriculum Goals

Language Arts and Writing Standards

Sixth Grade

Writing

Research and Technology

1.4 Use organizational features of electronic text (e.g., bulletin boards, databases, keyword searches, e-mail addresses) to locate information.

1.5 Compose documents with appropriate formatting by using word-processing skills and principles of design (e.g., margins, tabs, spacing, columns, page orientation).

Writing Applications

(Genres and Their Characteristics)

2.3b Support the main idea or ideas with facts, details, examples, and explanations from multiple authoritative sources (e.g., speakers, periodicals, online information searches).

2.3c Include a bibliography.

Listening and Speaking

Organization and Delivery of Oral Communication

1.6 Support opinions with detailed evidence and with visual or media displays that use appropriate technology.

1.7 Use effective rate, volume, pitch, and tone and align nonverbal elements to sustain audience interest and attention.

Speaking Applications

(Genres and Their Characteristics)

2.2b Develop the topic with facts, details, examples, and explanations from multiple authoritative sources (e.g., speakers, periodicals, online information)

Eighth Grade

Writing

Research and Technology

1.4 Plan and conduct multiple-step information searches by using computer networks and modems.

1.5 Achieve an effective balance between researched information and original ideas.

Writing Applications (Genres and Their Characteristics)

2.3b Record important ideas, concepts, and direct quotations from significant information sources and paraphrase and summarize all perspectives on the topic, as appropriate.

Listening and Speaking

Speaking Applications (Genres and Their Characteristics)

2.3d Organize and record information on charts, maps, and graphs.

2.6 Demonstrate use of sophisticated learning tools by following technical directions (e.g., those found with graphic calculators and specialized software programs and in access guides to World Wide Web sites on the Internet).

Eleventh and Twelfth Grade

Writing

Research and Technology

1.6 Develop presentations by using clear research questions and creative and critical research strategies (e.g., field studies, oral histories, interviews, experiments, electronic sources).

1.8 Integrate databases, graphics, and spreadsheets into work-processed documents.

Writing Application (Genres and Their Characteristics)

2.6a Combine text, images, and sound and draw information from many sources (e.g., television broadcasts, videos, films, newspapers, magazines, CD-ROMs, the Internet, electronic media-generated images).

2.6b Select an appropriate medium skillfully, editing appropriately and monitoring for quality.

Listening and Speaking Comprehension

1.1 Recognize strategies used by the media to inform, persuade, entertain, and transmit culture (e.g., advertisements; perpetuation of stereotypes; use of visual representations, special effects, language)

1.2 Analyze the impact of the media on the democratic process (e.g., exerting influence on elections, creating images of leaders, shaping attitudes) at the local, state, and national levels.

1.3 Interpret and evaluate the various ways in which events are presented and information is communicated by visual image makers (e.g., graphic artists, documentary filmmakers, illustrators, news photographers).

Speaking Applications (Genres and Their Characteristics)

2.4a Combine text, images, and sound by incorporating information from a wide range of media, including films, newspapers, magazines, CD-ROMs, online information, television, videos, and electronic media-generated images.

2.4b Select an appropriate medium for each element of the presentation.

2.4c Use selected media skillfully, editing appropriately and monitoring for quality.

Appendix F: Information Literacy Standards Applications

Grade Level	Standard	Strand
Kindergarten – 5th Grade	English Language Arts/ Reading	<i>2.1 Structural Features of Informational Materials</i>
Grades 2 – 3	English Language Arts / Writing	<i>Research 1.3 Understand the structure and organization of various reference materials (e.g., dictionary, thesaurus, atlas, encyclopedia).</i>
Grades 4 – 5	English Language Arts/ Writing	<i>Research and Technology 1.5, 1.6, 1.7, and 2.3</i>
Grade K – 5	History-Social Science	<i>Research, Evidence, and Point of View Standards 1 – 3</i>
Grade K – 5	Science	<i>Investigation and Experimentation</i>
Grades 6 – 8	English Language Arts/ Writing	<i>1. 4 Research and Technology 2.3 Write research reports</i>
Grades 6 – 8	History – Social Science	<i>Historical and Social Sciences Analysis Skills Research, Evidence, and point of View 1 – 4</i>
Grade 6 – 7	Science	<i>Investigation and Experimentation 7a, b</i>
Grade 8	Science	<i>Investigation and Experimentation 8</i>
Grade 9 -10	English Language Arts/ Reading	<i>Structural Features of Informational Materials 2.1 – 2.6</i>
Grade 9 – 10	English Language Arts/ Writing	<i>Research and Technology 1.6</i>
Grades 9 – 12	History-Social Science	<i>Historical Research, Evidence, and Point of View Standard 4</i>
Grade 9 – 12	Science	<i>Investigation and Experimentation Standards 1a, 1l, and 1m</i>