

**BERKELEY UNIFIED
SCHOOL DISTRICT**

**INSTRUCTIONAL
TECHNOLOGY PLAN
2003-2006**

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INTRODUCTION

This technology plan was written for the Berkeley Unified School District using the Educational Technology Planning Guidelines provided by the State Department of Education and the National Educational Technology Standards (NETS) published by the International Society for Technology in Education (ISTE). This plan includes our vision statement, our goals for Preschool-Adult educational technology integration and a timeline for achieving these goals. It describes our effort to make technology accessible to every student and to help every teacher find appropriate uses for the powerful tools to enhance the curriculum and boost student engagement. It is intended to serve as both a guide for decision-making and an instrument to monitor and evaluate progress toward identified goals and objectives.

The plan was written with input from many stakeholders. A series of focus groups were held to solicit input from principals, parents, teachers, community members, and administrators. Additionally, we solicited electronic input from parents and the community via the District website and the PTA website. Our top priority has been to consider what critical elements are needed to create an optimal learning environment for all of our students and to build a more collaborative community for all of our stakeholders.

The State Department of Education requires a certified technology plan in order to receive any funding for technology. The required plan is for *instructional technology*. This plan, therefore, is intended for the instructional uses of technology in the schools. It does not address administrative/management information systems technology in the Berkeley Unified School District. This plan has been developed to meet the requirements and guidelines for technology planning, outlined by the California State Department of Education and E - rate and therefore is organized into two sections. The first section, *Plan Foundations*, describes the BUSD vision for technology, connections to district goals and ongoing improvement efforts, plan development processes, and an overview of current status and identified technology needs. The second section contains the five required implementation plan components.

- Curriculum and Instruction
- Professional Development
- Infrastructure, Hardware, Technical Support, and Software
- Funding and Budget
- Monitoring and Evaluation

DISTRICT TECHNOLOGY PLANNING COMMITTEE

In addition to the stakeholders who gave input, the following people contributed to the actual writing of this plan:

Christine Lim	Associate Superintendent of Educational Services
Carolyn Gery	Technology Coordinator, 9 –12
Susie Goodin	Library Volunteer and Parent
Janet Levenson	Technology Coordinator, PK – 8
Donna Van Noord	Literacy Coordinator, K-5

Technology planning is effective to the degree that the plan is implemented. To that end, this plan is intended to be a dynamic, living document with ongoing processes for measuring progress toward identified goals and objectives. Plan components include processes needed to provide for ongoing monitoring and evaluation of progress toward meeting each objective, including plans to:

- Provide school sites with easy access to plan components and resources through web access.
- Clearly identified goals and objectives for the next 3 years.
- Measurable objectives, action plans and evaluation plans for each strategic goal.
- Biannual meetings of the Strategic Plan Committee to review progress.
- Ongoing content discussions to identify and compile *Best Practice* examples for technology integration that support standards in all content areas and grade levels.
- Monitoring of school technology profiles to support site planning.
- Development of a technology brochure, summarizing ongoing projects, current technology status and strategic plans.

HISTORY

A committee created the original technology plan in 1993 to establish technology goals and objectives for the Berkeley Unified School District. Many of those goals have since been realized.

Preschool-8th grade

In 1996 the District received a 5-year, \$6.5 million Technology Innovation Challenge Grant from the federal government. The Teacher Led Technology Challenge Project (TLTC) purchased a minimum of two multimedia computers for every regular education PK-8th grade classroom. In addition, each teacher received a classroom printer and each school received digital cameras, scanners, other peripherals, and an extensive software library. Each site had an on-site Instructional Technologist who maintained the equipment as well as assisted teachers in planning and delivering technology-infused lessons. The two district-wide professional development coordinators worked to help teachers learn to integrate technology into their curriculum and to become proficient users of technology themselves. Lead Teachers were chosen at each site to receive extra

equipment and training in exchange for being exemplars and leaders. TLTC ended on September 30, 2002.

High School

The Digital High School grant has provided Berkeley High School and Berkeley Alternative with the wiring infrastructure to support new instructional networks at each site. Every instructional space currently has a networked multi-media workstation with access to the District Wide Area Network. Current funding provides a per student allocation designated for the on-going maintenance of the instructional network, staff support and technology personnel salaries. AB2882 funding received in the Spring of 2002 enabled the sites to purchase 5 wireless mobile labs. Each content area has a dedicated technology mentor that is the point person for that department as well as the provider for subject specific technology integration information. Digital High School funding will continue until further notice.

PART I: PLAN FOUNDATIONS

BERKELEY SCHOOL DISTRICT'S STRATEGIC VISION

Mission Statement

The mission of the Berkeley Unified School District, as the beacon for a diverse community united in commitment to public education, is to ensure that all of students discover and develop their special talents, achieve their educational and career goals, and succeed in a rapidly changing, multicultural society by empowering the students, parents, community, and staff; providing a strong core curriculum; and offering special programs and alternative learning experiences in a racially integrated, pluralistic environment.

Philosophy of Educational Technology

The Berkeley Unified School District is committed to utilizing the resources made available by modern technology to enhance and enrich learning opportunities for students, and to increase the effectiveness of its educators and support staff. These resources will be used to enhance the delivery of instruction, to support all areas of the curriculum, and to support the educational needs of students, staff, and community.

Communication must extend beyond the walls of the traditional classroom to ensure the instructional program prepares students to become skilled in the use of technological resources and are prepared for continued higher education or for entering the work force in the 21st century.

District Strategic Goals

Objective 1: To have 100% of our students graduate

Objective 2: To have all graduates of the Berkeley Unified School District be prepared for either post-secondary education or employment of their choice.

Objective 3: To have all students achieve their own individual educational goals.

Two focal areas for current district efforts are literacy and math.

TECHNOLOGY STRATEGIC PLANNING OVERVIEW

OUR BELIEFS

- Technology is a powerful tool for engaging students, especially those who are disengaged from more traditional instructional methods.
- Access to technology must be equitable for all students and staff.
- The key to successful technology integration is a strong professional development program.
- Effective use of technology in the classroom must support integrated teaching and learning by utilizing the technological tools available to access, analyze, synthesize, and present information.
- A teacher using technology successfully and enthusiastically models effective technology use, utilizes ongoing training and support, provides opportunities for technology use within the curriculum, and facilitates student experimentation and self-learning.
- A student using technology successfully is able to utilize a variety of resources to independently access, analyze, synthesize, and present information.
- Electronic information increases the volume and variety of information available to students. It allows for global interactions, but to be truly beneficial the user must scrutinize the information for validity, accuracy, appropriateness, and relevance.
- New technologies should be evaluated for their effective impact on student learning, and incorporated into the plan where appropriate.

TECHNOLOGY STRATEGIC VISION

The technology vision will be realized through fulfillment of the following goals:

Commitment: Technology is accepted as a priority of the district and is supported with human and financial resources.

Teaching and Learning: Technology increases the resources applied directly to teaching and learning by reducing time that teachers spend performing non-instructional duties and by improving the scope and efficiency of support services. Technology provides teachers, parents and students with a wide array of interactive tools that are suitable to a

variety of learning environments and conditions. The tools are used to improve instructional practices in order to attain world class levels of student achievement. Students are trained to develop technology skills that will improve their ability to achieve success in the workplace of the future.

Communication: Technology enhances communication within the district, between the district and the community, and especially among teachers, parents and students.

Accessibility: Technology promotes sharing of information. Technology allows equitable access to information at any time, from anywhere, and by all users, including parents, teachers, students, staff and the community, according to their needs and expectations.

Information, Assessment and Accountability: Technology improves the accumulation, management and presentation of data and information. Both are used interactively by parents, teachers, staff and community members to assess conditions and to stimulate actions that improve student achievement, instructional practices and business operations.

Productivity: Technology enables students and staff to use time and other resources more productively. Leaders use technology to analyze and improve systems and practices in order to achieve and sustain high levels of performance and services.

Professional Development: Technology improves the district's delivery of high-quality, relevant professional development and training experiences. The experiences empower and motivate staff to improve student achievement and the efficiency of the district. Professional development includes thorough training about relevant and appropriate uses of technology.

Technology Systems Standards: Technology is based on high standards for the performance and compatibility of systems, applications, infrastructure and equipment. Standards are regularly evaluated and revised through a formal process of research and development that capitalizes on the expertise of users, district leaders and support staff, and the appropriate support of the technology industry and community. Conforming to standards enables the district to make the most effective use of technology and other resources.

Resources/Support: Human and financial resources are dedicated to acquiring, maintaining, securing and regularly upgrading hardware, software, communications infrastructure and applications. Technology support is proactive, timely, high quality and delivered equitably, on-site, according to planned schedules, and is responsive to user needs.

2001-2004 STRATEGIC GOALS

Overall Goal: BUSD will continue to make technology integral to teaching, learning, assessing, and managing.

1. Improve student learning and performance
2. Increase effectiveness and efficiency of instruction
3. Increase parent and community awareness and involvement in educational literacy skills embedded in the curriculum.

CURRICULUM

Teaching and Learning:

All teachers and students will use technology to improve the delivery of instruction and to assist students in meeting all academic content standards, with special attention to the District focus areas of literacy and math.

Technology and Information Literacy Skills

Students will acquire and use information literacy skills and become proficient in the use of multimedia computers and internet technologies in order to be successful navigators, communicators, information processors and producers of knowledge.

Appropriate Access for All Students

All students including special education, GATE, ELL, and underachieving students will have access to technology including assistive devices on a daily basis.

Record-Keeping and Assessment

Administrators and teachers will use technology as a tool for student assessment and pupil record keeping in order to make data-driven decisions and improve school management.

Community Involvement

Utilize telecommunications and technology applications to improve parent and community involvement.

Promote and strengthen partnerships with local Berkeley community agencies and educational institutions.

CURRENT TECHNOLOGY STATUS

A review of current and completed projects has revealed that BUSD has made progress toward meeting a number of goals and objectives outlined in previous plans. Current technology projects, which support those goals and objectives, have been outlined in this section. These projects generally fall into three categories: information and resources; professional development; and facilities and infrastructure.

A. Summary of School Technology (Based on 2002 California Technology Survey)

	Elementary	Middle	High
Total # of Computers	668	528	672
Student to Computer Ratio	6:1	4:1	5:1
% of Computers <1 year old	8%	15%	9%
% of Computers 1-2 years old	12%	14%	66%
% of Computers 2-3 years old	22%	84%	24%
% of Computers 3-4 years old	24%	26%	1%
% of Computers >4 years old	34%	36%	<1%
% of Computers in Library/Media Centers	6%	8%	5%
% of Schools with Computer Labs	55%	100%	100%
% of Classrooms with Internet Connection	78%	100%	100%

B. Current Technology Use by Students (Based on 2002 California Technology Survey)

Elementary Schools					
Use technology for:	None of students	>0 but < 25%	25% to <50%	50% to <75%	75% to 100%
Word Processing	0%	0%	27%	46%	27%
Addressing Content-Specific Software or Web-based Resources	9%	9%	55%	18%	9%
Research-Internet or CD-Roms	0%	9%	73%	18%	0%
Creating Reports or Projects	0%	0%	55%	27%	18%
Demonstrations/Simulations	0%	82%	8%	0%	0%
Corresponding with Experts, Students via Email and /or Internet	36%	64%	0%	0%	0%
Solving Problems and /or Analyzing Data	0%	64%	36%	0%	0%

Graphically Presenting Materials	0%	36%	55%	0%	9%
Middle Schools					
Use technology for:	None of students	>0 but < 25%	25% to <50%	50% to <75%	75% to 100%
Word Processing	0%	0%	0%	34%	66%
Addressing Content-Specific Software or Web-based Resources	0%	0%	34%	33%	33%
Research-Internet or CD-Roms	0%	0%	34%	0%	66%
Creating Reports or Projects	0%	0%	33%	33%	34%
Demonstrations/Simulations	0%	0%	33%	34%	33%
Corresponding with Experts, Students via Email and /or Internet	33%	67%	0%	0%	0%
Solving Problems and /or Analyzing Data	0%	66%	0%	0%	34%
Graphically Presenting Materials	67%	0%	0%	0%	33%
High School					
Use technology for:	None of students	>0 but < 25%	25% to <50%	50% to <75%	75% to 100%
Word Processing	0%	0%	0%	0%	100%
Addressing Content-Specific Software or Web-based Resources	0%	0%	0%	100%	0%
Research-Internet or CD-roms	0%	0%	0%	100%	0%
Creating Reports or Projects	0%	0%	0%	100%	0%
Demonstrations/Simulations	0%	0%	0%	100%	0%
Corresponding with Experts, Students via Email and /or Internet	0%	0%	0%	100%	0%
Solving Problems and /or Analyzing Data	0%	0%	0%	0%	100%
Graphically Presenting Materials	0%	0%	0%	100%	0%

C. Status of Instructional Media

Each site has a large content software library with a vast assortment of titles. There has been some effort made for consistency from site to site. All of the elementary sites have KidPix, the Tenth Planet Literacy series, Tenth Planet Math series, Inspiration, Math Arena, Numbers Undercover, the Edmark House series, and a few others that were deemed “standards”. The middle school sites have Inspiration, the Talking Walls, Math Arena, Reading Galaxy, GradeBook and other math and literacy titles that were decided

by the Technology Committee to be part of a basic collection.

Berkeley High School maintains site licenses for Windows 2000 Workstation and Office Suite and Mac OS 9 with 2001 Mac Microsoft Office Suite. In addition all teachers have home and school licenses for Grade Machine. Inspiration is part of the computer lab profile and the Math department utilizes MathType and Geometer Sketchpad.

Due to the large numbers of the computers in the District that were purchased over a span of several years, there is a wide range of operating system software installed. New Apple computers are shipping with OSX, but we have not yet trained teachers how to use it so we are booting to OS9. New PC's are using Windows 2000. AppleWorks 6 and Microsoft Office 98 are being used in different schools throughout the District. We are looking to buy a District license for Microsoft Office 2000 to set a productivity software standard.

D. Status of Infrastructure including the WAN

Kind of Wiring

New and renovated facilities will be equipped with Category 5 Unshielded Twisted Pair or subsequent high-speed wire standard certified to 622 Megabits per second. Every classroom and administrative workspace may be provided with at least one outlet box per permanent structural wall. This would depend upon the use of the room, for example a computer lab would have to accommodate the number of planned workstations. Each outlet box will accommodate four ports. Fiber drops are preferred for data, voice and video services where high bandwidth applications are used. Our goal is to provide fiber riser and backbone connections to telecommunication closets to replace copper backbone connections and enhance bandwidth. Fiber ring or star topology is the target architecture connecting remote buildings to the District for voice, data, and video digital communications.

Network Standard

ATM, FIDDI, GigaBit Ethernet or subsequent standards will be applied in the design of WAN or LAN backbone connections. The objective system will require minimum 100 Megabit per second connections to all nodes using either copper or fiber. The network infrastructure will naturally evolve to higher bandwidth standards as media and supporting equipment become proven and economically feasible. Ultimately, there will be a single, composite signal path for voice, data and video into and terminal equipment.

LAN Protocols

The District will adopt ATP, IP/IPV6, ISDN, ADSL and/or other high-bandwidth, quality of service protocols as evolving standards certify them for use and common acceptance drives their price into affordable ranges.

District Area Network

The planning goal for the District Wide Area Network is to replace the current T-1 lines with fiber, high-speed FIDDI ring, or ATM connectivity to all schools.

OVERVIEW OF IDENTIFIED NEEDS

While specific needs are delineated and addressed within each of the five components of the implementation plan, several themes have emerged from the examination of the various data mentioned above, which have provided a basis for identifying these priority needs.

Connect Technology to Improved Student Learning

- Instructional content must drive all technology integration and instructional use
- Technology implementation models that support diverse student needs
- Identify and teach needed technology skills
- Best Practices for technology integration identified and modeled
- Develop implementation models/baseline standards for technology use
- Universal access for all students throughout the district
- Data available to inform instruction, management and decision-making

Support for Technology

- Funding plans for implementation, upgrades and replacement
- Standardization/support for purchasing
- Adequate, on-site and centralized technical support
- Current information, ongoing communication between schools and district departments
- Commitment to total cost of ownership
- Organizational support
- Coordinated plan based on needs

Secure, Timely, Accurate Information Flow

- Between district, community and home
- Ease of access for all stakeholders
- Within schools
- Within the district
- Between districts, within the state and globally
- Focused on improved student learning

Coordinated, Sustained, Professional Development

- Focused on standards and improved student learning and performance
- Interwoven with curriculum and instructional best practices in each discipline
- Increased teacher and student skills and proficiencies (connected to state identified proficiencies)
- Coordinated plan with differentiation for individual needs
- Multiple methods of delivery; online, distance, onsite, mentoring, coaching

- Inclusion of all stakeholders including: teachers, administrators, support staff, and parents

PART II: PLAN COMPONENTS

CURRICULUM: Overview and Current Status

Overview

It is important that technology use becomes a routine part of the curriculum at all grade levels. Teachers and administrators will be able to use technology for research and curriculum development. The adopted benchmarks for technology use within the district are the ISTE Benchmarks.

Current Status:

Curriculum Integration: It is necessary for representatives from all subjects, grade levels and sites to collaborate in the articulation of technology integration strategies and needs. There are pockets of strong planning and implementation at different sites and their successful strategies can serve as models for the District. These site representatives are technology leaders, strengthening the articulation across the district.

High School

The high school uses the technology mentor program to disseminate information and to provide additional training opportunities. Each mentor is provided with a mobile laptop loaded with site applications. These stations are taken to the classrooms to facilitate one-on-one training opportunities.

Middle Schools

The Willard technology team meets regularly and is currently working on an articulated curriculum with their library media technician. After officially ending with the TLTC project, Willard has continued to choose a Lead Teacher each year to provide leadership around technology integration. There are TLTC Lead teachers at King as well. The computer lab teacher has taken on the leadership role and is working collaboratively with the TLTC staff to develop curriculum integration strategies and materials.

Elementary Schools

There are TLTC Lead Teachers at every site. These Lead Teachers have been asked to serve on the District's Instructional Technology Committee.

Preschools

The former Lead Teachers from the preschools have been included in the Instructional Technology Committee.

Site Administrators

All principals have been invited to join the District's Instructional Technology Committee.

Assistive Technology:

Elementary/Middle Schools

AlphaSmarts, Write Out Loud, IntelliTools and other hardware and software have been provided to all sites, as well as on an as-needed basis according to student IEP's.

High School

Every classroom, including SDC and all special education classes, are equipped with a networked computer through the Digital High School grant. Funding was designated to provide an assistive technology center, and is currently in the process of being established. Printers were purchased for every classroom.

Community and Parent Access to Technology

District

The TLTC computers go home with "TechnoKid" families for the long weekends, winter and spring breaks, and summer vacations. TLTC contracted with Berkeley Neighborhood Computers to provide 50 upgraded Macintosh computers to families of former TechnoKids. Not a single computer had to be replaced due to theft or damage in the five years that the computers went home with families.

Berkeley High School

Access is available until 4:30 P.M. every school day in the Student Learning Center. The library is also open until 4:30 P.M. daily for students to access both print and electronic resources.

Middle Schools

Access to technology after school is limited. Some technology was incorporated into the Family Writing Nights at King. Longfellow has access for some students after school.

Elementary Schools

There is very limited access to equipment and software in after-school programs. The software is barcoded and housed in most of the school libraries and is inaccessible when the Library Media Technician is not on site. There is no coordinated plan to incorporate technology into the after-school program nor into future after-school program grants.

Preschools

Each EDC classroom received a new computer, printer and software last year. TLTC provided professional development to accompany the new equipment.

CURRICULUM: Goals, Objectives and Benchmarks

OVERALL GOAL: The vision for Curriculum and Instruction is that technology would be available to all students, teachers, staff and parents, to promote and extend learning, and to enhance teaching.

Berkeley Unified is now in its fifth implementation year of its Early Literacy Plan. The success of BUSD's Early Literacy Plan has been a model for creating a middle school literacy plan beginning in the 2002-2003 school year. The Early Literacy Plan aims to increase the :

- Use of best practices in the classrooms
- Quality of assessment data
- Coverage (Reading Recovery and Early Literacy Groups) for lowest achievers

Additionally, this year the focus is to strengthen processes existing at each site to:

- Regularly evaluate, learn, plan and act to increase student achievement
- Build on and sustain a consistent, effective process to continually increase student achievement

Currently, the District's Teacher on Special Assignment for Math/Science is working with teacher leaders to create a strategic plan for math modeled after the work done in the area of literacy. The plan will focus on student achievement, academic content standards, best practices and reliable assessment methods.

Berkeley High School has created a focus on literacy as the central theme for all staff development activities. Partnerships with U.C. Berkeley have been created linking key researchers with the staff development activities. A key component of the program is information literacy.

STRATEGIC GOAL I

Improve student learning and performance through effective use of technology

OBJECTIVE 1: For each grade level and each content area, technology best practices will be aligned with district content standards to support student learning. Grade level and content appropriate electronic resources and online learning opportunities will be identified and made available to all teachers to support content standards and individual student needs.

BENCHMARKS:

<p>End of year 1: Language Arts, English Language Development, and Math Standards for each grade level will be examined and aligned with technology best practices and appropriate electronic resources to support student learning</p>
<p>End of year 2: Science and Social Studies Standards for each grade level will be examined and aligned with technology best practices and appropriate electronic resources to support student learning.</p>
<p>End of year 3: Content standards for all remaining areas will be examined and aligned with technology best practices and appropriate electronic resources to support student learning.</p>

IMPLEMENTATION PLAN

District Technology Committee consisting of content and technology coordinators will meet by to examine existing standards, and state and national resources by grade level and identify and align best practices for technology with grade level standards. English Language Learner and Adaptive Technology specialists will be involved as part of this process to provide for the specialized and adaptive technology needs of students.

This process will include the integration of information literacy skills into each content area and grade level.

Identified resources and alignment will be available through the district web site.

EVALUATION

Annual examination of the standards with integrated suggested resources will provide way for monitoring progress toward this goal. Each year suggested activities will be piloted and teachers will be given an opportunity for feedback through content coordinators. Revisions and additions will be made on an ongoing basis by content coordinators based on feedback.

OBJECTIVE 2: Every student at every grade level will have opportunities to develop and use identified technology skills and tools, including ELL, GATE, Special Ed., and all other learners.

BENCHMARKS:

End of year 1: District student technology standards will be developed, adopted and implemented by grade level and will incorporate the ISTE benchmarks.
End of year 2: 70 % of district classrooms will integrate at least three of the identified skills and/or strategies for their grade level.
End of year 3: 70% of all district classrooms will integrate at least six identified skills and/or strategies for their grade level.

IMPLEMENTATION PLAN

The District Technology Committee will meet to examine examples of student standards for Technology proficiency in alignment with ISTE standards along with input collected from community and business partners. Using these resources, grade level technology standards will be defined and disseminated for a broad based input and adoption process.

Site and district planning will include the integration of these skills in grade level professional development activities.

EVALUATION

2002 State Educational Technology Survey results, site plan review and professional development evaluation records will be used to monitor and evaluate progress.

STRATEGIC GOAL II:

Increased effectiveness and efficiency of instruction.

OBJECTIVE 1: A student information system will provide real-time access to student information including attendance and grades.

BENCHMARKS

End of year 1: A pilot school will be selected to implement the web-based versions of SASI to provide real time access to attendance and grades.

End of year 2: One third of district sites will be utilizing the attendance, and grade features of SASI and additional data features will be explored for future incorporation, i.e. health information and CAHSEE exam information.

End of year 3: All district teachers will have grades, attendance and standards online through SASI and a parent training program will be implemented to provide access for approved information through the system.

IMPLEMENTATION PLAN

The selected pilot site will receive further training to support full implementation. New sites will be selected to implement the web-based version of the software on a pilot basis. Once pilot schools have completed training and successful implementation, additional schools will be selected for implementation based on technology readiness and identified needs.

EVALUATION

District technology staff will continue to work with technical support to add data elements. Records of school implementation, training records and issues logs will be examined quarterly to assess progress, evaluate needs and revise plans as required. Updates will be provided for the Superintendent, and Board of Education on a quarterly basis.

STRATEGIC GOAL III:

Increase parent and community awareness and involvement in educational processes.

OBJECTIVE 1:

Information will flow seamlessly through a coordinated communication system.

BENCHMARKS

End of year 1: Complete implementation of a district-wide email system and coordinated district web site to increase home -school communication.

End of year 2: Develop and pilot a browser-based instructional management interface for teachers, staff, student and parents.
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End of year 3: Refine and begin implementation of the instructional management interface for all groups at selected sites.

IMPLEMENTATION PLAN

Instructional Technology staff will continue to provide support and training for the district email “BeMail” system.

A web-based interface will be developed to allow users the ability to customize their resources and links. This one-stop page will link to all information authorized for that user.

EVALUATION

Installation records will provide progress information for implementation of the web-based component. Various user groups will be given an opportunity to evaluate and provide feedback as the user interface page is being developed.

OBJECTIVE 2:

Extend access to electronic resources to all areas of the community through community resource centers, business access points, extended school hours, and community partnerships to bring low/no cost access to all stakeholders.

BENCHMARKS

End of year 1: Evaluate current resources and access points to guide planning and maximize potential.
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End of year 2: Provide extended and community access to 10% of the BUSD community through the development of community and business access points, extended school access and low cost connection opportunities.

End of year 3: Provide extended and community access to an additional 10% of the

BUSD community through the development of community and business access points, extended school access and low cost connection opportunities.

IMPLEMENTATION PLAN

During year one, efforts will focus on collecting information from existing community resource sites, planning for needed access and development of funding options including grant writing and partnership development.

EVALUATION

Data collection and monitoring of technology use at existing sites and parent surveys will provide feedback on use and effectiveness.

The Director of Curriculum , Instruction and Staff Development will be responsible for monitoring and advising the work of the Instructional Technology Committee through quarterly meetings.

PROFESSIONAL DEVELOPMENT: Overview and Current Status

Overview

William Knoke, in his book Bold New World (1996), warned that technology that is not used and implemented quickly is worthless: "Cutting-edge technology is as perishable as a truckload of ripe bananas: it's worth a fortune today, but if not used quickly, it becomes worthless". Thus, a major goal of technology training should be to help teachers to bring technology-mediated instruction to the classroom in a time- and cost-efficient manner. The technology training should focus on good teaching. All in-service workshops should integrate technology into the instruction rather than keep it as a separate subject.

All training at the District level will assist teachers in developing skills aligned to the standards for "Effective Use of Computer-Based Technology in the Classroom for Preliminary Multiple and Single Subject Teaching Credentials" adopted by the California Commission on Teacher Credentialing (1999). With SB 2042 taking effect soon, there must be a comprehensive program for technology staff development district-wide that tracks and documents the progress of each new teacher in relation to the technology standards.

Recent history indicates that information technology planning must include

comprehensive and continuous professional development in order to be successful. Schools' efforts to integrate information technology in recent years have been less than effective due to inadequate planning for professional development, as well as limited access to information technology for teachers and students. Teachers must be comfortable using information technology if it is to be integrated effectively into the classroom. Providing access to resources along with time and support to develop teacher competency represents the most logical means by which to ensure effective curriculum integration. Any technology integration requires that teachers engage in rethinking, reshifting and reshaping their curriculum. This shift will require extensive staff development support.

Teachers need support in the form of incentives to use technology, encouragement to change, and the ability to take risks. Until that happens, they won't be willing to move from the front of the room. And we know they really want to. Access to hardware, software, and telecommunications without adequate staff development and follow-up technical assistance almost always results in little or no use of technology as an effective instructional resource (Roberts, 1994).

Current Status

District:

In-service for 9-12 grades staff occurs in several of the school site lab environments which are equipped with wireless or hard-wired workstations and site applications. LCD projectors are utilized in the instructional process in combination with TV-to-computer configurations. Video-specific training is housed in the school's video computer lab. The in-service for the Preschool-8th grade teachers takes place in a professional development center equipped with a wireless iBook lab, 3 desktop Mac's, 15 AlphaSmart portable word processors, scanners, digital cameras, printers, video cameras, TV's hooked to scan converters, a large screen display monitor, an LCD projector and an extensive software library.

High School:

The site utilized the Digital High School grant as the site technology plan; the staff development component operates as the site staff development plan. A technology newsletter and content area technology mentors facilitate the dissemination of integration information and strategies.

Middle Schools:

Each site has a staff development plan as part of their AB1339 (Knox) application. The plans are being implemented, but not as part of a comprehensive staff development plan.

Elementary Schools:

Most sites have a plan that was written as part of the AB1339 (Knox) application, but they are not part of a comprehensive staff development plan. The sites are relying on the Teacher Led Technology Challenge (TLTC) workshops for their technology staff development needs. At some sites the TLTC Lead Teachers are continuing to coordinate and deliver staff development to their colleagues.

Preschools:

The former TLTC Lead Teachers are continuing to provide staff development at their monthly staff meetings. There is no comprehensive plan for staff development.

Libraries:

There has been a very limited amount of technology in-service incorporated into the monthly library staff meetings. The in-services have included Alexandria (automated library circulation software) training, printer trouble-shooting, Mac trouble-shooting and Internet search techniques.

We do not have up-to-date information on the current technology skills of all administrators and teachers. However, we are systematically having each site complete the CTAP² assessment to give us current data. We are hoping to have 60% of the teachers' skills assessments completed by June 2003. We have used informal assessment tools in the past, but we did not have a district-wide assessment. CTAP2 will provide that for us.

Activities:

Several approaches to establishing effective professional development practices must be explored. The staff development plan must be visionary in planning quality professional growth experiences. In turn, educators must be simultaneously challenged, engaged and supported in order to develop expertise with new innovation in information technology. The plan shall incorporate the following strategies that promote effective staff development in information technology:

- Conduct staff development in school settings that support creative and multiple scheduling options (e.g., after-school workshops, weekends, release time, in-service days, summer institutes, evenings, independent study).
- Link activities and programs with other district-wide efforts by encouraging teachers and administrators to plan together.
- Emphasize self-instruction with differentiated opportunities.
- Make available an assortment of information technology-based in-service

- opportunities (awareness, demonstration, practice, feedback, and coaching activities).
- Facilitate concrete, hands-on, and sustained professional development with opportunities for follow-up support.
 - Monthly classes scheduled during the school day and other appropriate times shall be offered to District staff in curricular areas that supports Berkeley Unified Standards.
 - There will continue to be regularly scheduled district-wide grade level meetings where ways to integrate technology into the curriculum is taught as a part of a curriculum sharing session.
 - Recognize and plan for stratification of teacher skills and competencies; provide diverse technology offerings.
 - Allocate time to develop and refine newly acquired skills with ample access to appropriate hardware and software.
 - Include an annual allocation for information technology training as part of the professional development budget.
 - Design individualized training plans for teachers to use in collaboration with their colleagues and principals.

Additional Strategies:

- Provide principals and site committees with a detailed outline of District and state funding available to sites for professional development.
- Coordinate training resources available within the District.
- Create opportunities for educators to share effective technology-infused integration practices with their colleagues.
- Utilize telecommunications networks to develop communities of teachers who can collaborate on applications of technology and telecommunications to support teaching and learning which emphasizes higher order thinking skills and lifelong learning.
- Involve professional education organizations including teachers associations,

administrators associations, and other organizations representing educators involved in telecommunications, instructional computing, and public television to provide professional development through conferences, newsletters, on-line resources, and teacher-to-teacher networking.

- Consult with the California Technology Assistance Project (CTAP) for information related to staff development for technology applications, research on the benefits of technology in education, model programs and practices, educational technology plans and legislation, federal initiatives related to technology, and other resources.

PROFESSIONAL DEVELOPMENT: Goals, Objectives and Benchmarks

OVERALL GOAL: BUSD will provide ongoing, site-specific technology staff development to all staff members as needed.

OBJECTIVE 1: Increase Technology Proficiencies by Movement of all teachers, (including library media teachers), administration, and support staff along the continuum toward professional technology proficiency as measured by the CTAP2 assessment.

OBJECTIVE 2: Increase the effective integration of technology by developing technology mentors/leaders at all district sites.

OBJECTIVE 3: Technology specialists will provide site based technology training and coaching to all sites based on identified needs and integrated with other content-based professional development activities.

OBJECTIVE 4: Expand the training options available for increasing technology

BENCHMARKS

End of year 1: Utilize the CTAP² instrument to assess the proficiency levels of faculty at all BUSD sites, utilize the information to develop site specific training to meet the needs of the faculty.

End of year 2: Continue to assess and provide site specific training.

End of year 3:

- 80% of district teachers will have reached the Personal Proficiency level;

- 40% will have reached the Professional Proficiency level; and,
- 20% will have reached the Mentor Proficiency Level as measured by the CTAP2 Teacher

IMPLEMENTATION PLAN

Proficiency assessments will be integrated into whole staff development days as well as training for new teachers.

EVALUATION

Technology Proficiency progress will be monitored by data provided by the CTAP² online assessment. This data will be evaluated quarterly to guide planning for future training options. Biannual review of progress toward goals and objectives, will allow the Technology staff and the Instructional Technology Committee the opportunity to monitor and adjust implementation plans.

Finally, to measure the impact of professional development on teacher attitudes and classroom practice, the 2002 Educational Technology Survey data will be evaluated along with the results of a sample teacher attitudinal survey.

INFRASTRUCTURE, HARDWARE, TECHNICAL SUPPORT and SOFTWARE:

Overview and Current Status

Overview

It is important that District and site resources are coordinated to ensure that all students at all sites have equity of access to District / site technology resources. This effort will address the inequity that exists for many BUSD students who have very limited access to technology resources at home. The following excerpt details the “Digital Divide” and the effect that this condition can have on student achievement.

“A 1998, U.S. Department of Commerce report, *Falling through the Net II: New Data on the Digital Divide*, showed that although more Americans now own computers, certain groups are still far less likely to have computers or online access. Lack of such access affects the ability of children to improve their learning with educational software, adults to learn valuable technology skills, and families to benefit from online connections to

important health and civic information. A follow-up study, released by President Clinton in July 1999, documents that the "digital divide" continues to grow. Similar data gathered by the U.S. Department of Education highlights a "digital divide" in our nation's schools, with children attending high poverty schools less likely to have access to computers, the Internet, or high quality educational technology programs."

"U.S. Department of Education programs provide substantial funding to help American schools and communities bridge the "digital divide," reducing inequities in access to information technology and the Internet." U.S. Department of Education e-learning: Putting a World Class Education at the Fingertips of all Children.

It is imperative that all Berkeley Unified students have equal access in their classrooms to the best information technology that is available. A minimum requirement of this objective is to ensure that every classroom, library or other instructional space has access to the District's wide area network.

Current Status

Berkeley High School

The high school is completely wired, every instructional space contains a networked, multi-media workstation. The library is connected and has three connected search stations and a networked computer lab. Every department has a workstation networked to the administrative student data system.

Berkeley Alternative High School/Independent Studies

100% of the instructional areas are connected.

Middle Schools

Aside from a few isolated cases (e.g., the science building at King), instructional spaces at all three middle schools are connected to the Wide Area Network.

Elementary Schools

A few of the classrooms are not connected to the Wide Area Network. Many, but not all, of these classrooms are in bungalows.

Preschools

The preschools are connected to the Wide Area Network.

Libraries

All BUSD libraries are automated with the library circulation system software (Alexandria) providing access to the library collections and Central Media Library video & DVD collection. All of the District's school libraries are connect to the Wide Area Network.

Activities:

- Conduct an assessment of SDC and resource teachers to determine their needs in terms of hardware, software, support and professional development.
- Site assistive technology plans that meet the access requirements and standards of the state.
 - ⇒ Standards specifically identified to ensure that female, minority and students with special needs and otherwise disadvantaged students have equitable access to technology resources.
 - ⇒ Support and training for teachers in the assessment, acquisition and use of assistive technology.
 - ⇒ Identification of specific alternative and augmentative devices and services (such as alternative keyboards or voice recognition software)
 - ⇒ Identification of technology-based resources that address the needs of limited English proficient students.
 - ⇒ Establish a Special Education technology section on the BUSD website which will include up-to-date information about assistive technology.
- Form a subcommittee of the Instructional Technology Committee to work on the District's assistive technology plan.

**INFRASTRUCTURE, HARDWARE, TECHNICAL SUPPORT and SOFTWARE:
Goals, Objectives and Benchmarks**

<p>OVERALL GOAL: Ensure that all students have access to the appropriate resources to enhance their learning.</p>
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INFRASTRUCTURE:

As a result of E-Rate funding, each school site has a fully operational Ethernet local area network operating that supports data transmission rates of 10Mb/s, 100 Mb/s, and 1 Gb/s (1000 Mb/s). Each school site has received a Local Area Network with all related network devices such as switches, routers, servers, Category 5 and Fiber Optic cabling that is connected to the district's wide area network.

Each school's local area network configuration consists of connecting every classroom, computer lab, library, and administrative office by Category 5 data cabling to the building's Intermediate Distribution Frame (IDF) via a fiber backbone. Each IDF provides an individual port on a high capacity network switch to each Category 5 data drop. A fiber optic backbone connects outlying IDF locations to the Main Distribution Frame (MDF) that provide the interface to the district's wide area network via T-1 (1.54 Mb/s) and DS-3 (45 Mb/s) connections.

Implementing these local area network designs has been accomplished utilizing district funds, Bond funds, and E-Rate funding. The target bandwidth on each school site's local area network to classrooms and library/media centers has been 10/100 Mb/s to the desktop with a 1 G/bs fiber optic backbone.

The district's wide area network consists of a full ATM network (from a commercially contracted Internet Service Provider).

Security to protect confidential data to maintain the integrity of the system is being accomplished by the Technology Services staff. In addition, a firewall has been implemented to provide a barrier that monitors and controls the flow of Internet traffic.

Appropriate filtering software is in place and will continue to be used to prevent district staff and students access to inappropriate Internet content. Review and certification of filtering software will take place on an ongoing basis to ensure that all requirements of the *Children's Internet Protection Act*, enacted by Congress, will be met.

OBJECTIVE 1:

Implement an ongoing plan to upgrade Local Area Networks beginning with selected school sites with older technology.

OBJECTIVE 2:

Continue the process of assessing and upgrading Wide Area and Local Area Networks to meet increasing instructional and professional development needs for video and audio.

OBJECTIVE 3:

Develop wireless networks at selected sites.

HARDWARE:

School Technology Profiles: A district inventory system is in place and is updated annually. Site inventories of computers, personal digital assistants, televisions, digital and video cameras, scanners, and printers will be compared to target school profiles developed for each level to provide a broad view of hardware needs and site –based planning information.

All electrical equipment such as computers, printer, and faxes are picked up on the 2nd Wednesday of each month by the Maintenance Department or BVCS, a recycling company. To have equipment picked up from a site, the secretary or site technology coordinator fills out a Technology Discard Request (to ensure that all equipment with BUSD inventory numbers is properly removed from the database), and a TMA Work Order (to alert the Maintenance Department of the need for a pick up).

Replacement of computers that are four years or older will happen through local and outside funding sources, including SRTG funds. Each site will develop a 3-year replacement policy as part of their required BSEP Plan which must be approved by the Associate Superintendent before funds are released.

Access to this level of information regarding alignment with target technology profiles will be used to determine timelines for purchase, replacement, professional development and integration plans. This information will also assist in assessing options for re –purposing existing hardware and development of grant proposals.

All district sites have received adaptive technologies to support the identified needs of students, including computers for all Special Education classes, a minimum of 5 *AlphaSmart* keyboards for each elementary and 10 for every secondary site.

Accessibility to parents and students outside of school hours is being provided through expanded school site operations at selected sties, and through school parent resource centers. Further access is needed and planned through partnerships with community and the business community.

This plan ensures that technology is accessible to teachers, library media teachers, and administrators by providing access to hardware, software, video, and voice communication systems in every district classroom.

OBJECTIVE 1: Every learning environment will have at least one Internet-connected multimedia computer by July 1, 2003.

OBJECTIVE 2: By 2004, 80% of district schools will have met 60% of their target technology profiles.

OBJECTIVE 3: By 2004, an annual equipment replacement plan will provide for the upgrading of administrative and teacher workstations on a four year rotating basis.

TECHNICAL SUPPORT:

The rapid growth in technology requires adequate technical support staff. To meet those needs there are currently five Microcomputer Technicians assigned to the schools to provide support. Some software and hardware trouble shooting is handled by the Technology Services “Help Desk” personnel. Microcomputer Technicians, assigned to each district zone (4-5 sites) provide the majority of support. They currently support approximately 500 computers each. The ultimate target for technology support is the industry standard of 1 technology support person for each 100 computers.

Expert advice is sought regularly. State and regional support is provided for technology and e –rate plan development. The county office provides leadership in this area and meetings are attended regularly to ensure a good flow of information between BUSD and these outside guiding agencies. Other districts and nearby industry organizations have been contacted regarding their hardware, software, or networking standards and that information has contributed to the development of this plan.

OBJECTIVE 1:

Implement network management software tools across the district including at all schools and provide training for site based network managers by July 1, 2003.

OBJECTIVE 2:

Increase site based support to keep pace with increasing numbers of computers with the goal of reducing the ratio of computers to support personnel at least 30% by July 2004.

SOFTWARE:

Electronic Learning resources will be evaluated as part of the work to be completed by the content-based technology integration committees. Tools and evaluation rubrics available through CTAP and the new CLRN site will assist in ensuring that all resources meet minimum standards are grade level appropriate and support the academic content

standards. Consideration will also be given to ensure that these tools promote accessibility and individual learning needs. Coordination with the Special Education Program Supervisors will prevent duplication of efforts and purchases as each Special Education teacher receives identified adaptive software tools.

Software evaluation and selection in the area of literacy will be consistent with research from the Early Reading First initiative, which has identified five components essential to a child's learning to read: phonemic awareness, phonics, vocabulary, fluency, and comprehension. All software will be evaluated for its ability to support the five key literacy components, and will follow the "assess, align, instruct, and evaluate" model to target instructional activities based on students' needs.

Electronic learning resources are for the most part housed and managed by individual sites, most often by the library media teachers or technicians, however many of the resources that can be provided through the Internet will be linked to the district site as part of this plan.

Further assessment of current use of electronic resources at each site will be done as a part of the content specific curriculum planning.

OBJECTIVE 1: Update current software database to comply with CLRN standards and make this information accessible to teachers via the District web site.

OBJECTIVE 2: Update district web sites to include grade level and content specific links to standards-based lesson plans and identified grade level appropriate electronic resources as those resources are identified by the content coordinators and curriculum committees.

BENCHMARKS/TIMELINE

End of year 1:

- Implement an ongoing plan to upgrade Local Area Networks beginning with selected school sites with older technology.
- Every learning environment will have at least one Internet-connected multimedia computer by July 1, 2003.
- Implement network management software tools across the district including at all schools and provide training for site based network managers by July 1, 2003.
- Update current software database to comply with CLRN standards and make this information accessible to teachers via the District web site.

End of year 2:

- Continue the process of assessing and upgrading Wide Area and Local Area

<p>Networks to meet increasing instructional and professional development needs for video and audio.</p> <ul style="list-style-type: none"> • By 2004, 80% of district schools will have met 60% of their target technology profiles. • By 2004, an annual equipment replacement plan will provide for the upgrading of administrative and teacher workstations on a four year rotating basis. • Increase site based support to keep pace with increasing numbers of computers with the goal of reducing the ratio of computers to support personnel at least 30% by July 2004. • Update district web sites to include grade level and content specific links to standards-based lesson plans and identified grade level appropriate electronic resources as those resources are identified by the content coordinators and curriculum committees.
<p>End of year 3:</p> <ul style="list-style-type: none"> • Develop wireless networks at selected sites.

EVALUATION

While monitoring of most of these objectives is built into other plan components, the ongoing monitoring of infrastructure, bandwidth, and networking needs is accomplished through the utilization of network management software and weekly department meetings. Technology support needs are monitored and evaluated through work order tracking and department review.

**FUNDING AND BUDGET ALLOCATIONS:
Overview and Current Status**

The following considerations have served as a foundation in developing and prioritizing the funding and budget components of this plan.

- Instructional impact
- Coordination of implementation timelines to maximize impact, (i.e. needed hardware and software will be in place prior to professional development)
- “Total Cost of Ownership” and replacement considerations
- Distinctions between ongoing and one time costs
- Identification of multiple funding sources at district and site levels.

NEEDS AND RESOURCE ASSESSMENT

Funding for implementation of district and site technology initiatives has been available through numerous sources, including:

- Digital High School funding
- Federal Innovation Challenge Grant
- BSEP Parcel Tax
- E-rate
- State Technology funding
- SB 1339 4-8 Staff Development for Technology Grants
- Block Grants
- Title One funding
- EAST Grant

To ensure adequate funding to implement and maintain existing and new district technology initiatives, all potential funding sources will be evaluated and coordinated. We will pursue all grant opportunities including EETT, SRTG, and other state and private funding sources.

Furthermore, during this current budget development process significant budget constraints have necessitated a close examination of one time or new costs versus the essential recurring costs of maintaining district services and infrastructure.

In the current year, technology funding from a variety of local, state and categorical sources have been allocated to personnel, materials and equipment, and telecommunications services.

Funding and budget planning will take place on an ongoing basis guided by the goals and objectives of this plan. It will be the responsibility of the Instructional Technology Committee to monitor the budget and funding priorities and make recommendations to the Superintendent and School Board.

FUNDING PRIORITIES

In addition to maintaining existing mainframe, district-wide hardware and software, and ongoing network and telecommunications costs, the following priorities have been identified through this plan development process. As funding sources are identified these priorities will guide allocations.

Increase school-based technology

- Increase/upgrade classroom hardware and electronic resources
- Develop and support site-based lead-teachers/mentors
- Provide technology specialists to work with multiple sites with technology planning and integration
- Increase site-based technology support

Infrastructure Upgrades

- Upgrade school networks at sites with oldest technology
- Site electrical upgrades

School and Division Operations

- Hardware, software, and training to support current Student Information System
- Implementation of network and desktop management software
- Implementation of a web-based work order system

CURRICULUM AND INSTRUCTION

STRATEGIC GOAL I:

Improve student learning and performance through effective use of technology.

OBJECTIVE 1: For each grade level and each content area, technology best practices will be aligned with district content standards to support student learning. Grade level and content appropriate electronic resources and online learning opportunities will be identified and made available to all teachers to support content standards and individual student needs.

OBJECTIVE 2: Every student at every grade level will have opportunities to develop and use identified technology skills and tools.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
Coordination Time Operating Budget	\$50,000.00	State funding and Local District Sources	Funding of these objectives is contingent on budget allocations.

OBJECTIVE 3: Distance learning and online courses will be made available for intervention and support of individual student learning needs.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
Ongoing software costs	\$120,000	Individual site categorical budgets and private grant resources.	Existing Technology Services staff will make those resources available over the Internet from home and off-site locations.

OBJECTIVE 4: By 2004, all district schools will meet at least 80% of the target school profile for technology, with first priority given to providing a computer in every learning environment which meets minimum district hardware and software standards for student and teacher use.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
By 2004, all district schools will meet at least 80% of the target school profile for technology, with first priority given to providing a computer in every learning environment which meets minimum district hardware and software standards for student and teacher use.	Multimedia computers in approximately 200 Classrooms at a cost of approximately \$400,000.	Site Budgets BSEP Funds Hardware Funding for 4-8 Digital High School Ed Tech Grants, including SRTG and EETT	This may take several years to accomplish, depending of available funding. DHS and Ed Tech Grants have helped with meeting this goal at the high school. Federal Technology Challenge Grant has assisted with middle, elementary and pre-schools.

STRATEGIC GOAL II:

Increase effectiveness and efficiency of instruction

OBJECTIVE 1: A student information system will provide real time access to attendance and grades.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
Trainers	\$60,000 for TSA and \$25/hr for teachers ~\$64,000	AB 1339	TSA, Technology and Site Leaders

STRATEGIC GOAL III:

Increase parent and community awareness and involvement in educational processes

OBJECTIVE 1: Provide a district-wide email system and coordinated district web site to increase home-school communication.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
District Webmaster	\$50,000.00	BSEP Funding	Webmaster is working collaboratively with the Public Information Officer.

OBJECTIVE 2: Extend access to electronic resources to all areas of the community through family resource centers, extended school hours, and community partnerships to bring low/no cost access to all stakeholders. Existing personnel time to research existing status, develop partnerships and develop grant proposals.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
Existing personnel time to research existing status, develop partnerships and develop grant proposals	No direct costs at this time	State grants will be pursued	Partnership development began with the Federal Innovation Challenge Grant and will continue.

PROFESSIONAL DEVELOPMENT

OBJECTIVE 1: Increase Technology Proficiencies

OBJECTIVE 2: Increase the effective integration of technology by developing technology mentors/leaders at all district sites.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
<ul style="list-style-type: none"> - Site based technology training - Identify and train site technology mentors - Stipends/equipment 	Funding needs will vary by site.	<ul style="list-style-type: none"> - Site budgets - Digital High School and Technology Site - Support and Training (TSST) funds - AB 1339 Education Technology Staff Development Program for Grades 4-8 Grants (5HS) - CTAP collaboration and support 	Digital High and the AB 1339 grants will support on-site professional development activities.

OBJECTIVE 3: Technology specialists will provide site based technology training and coaching to all sites based on identified needs and integrated with other content-based professional development activities.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
District technology coordinator specialists/coaches	\$100,000	This objective is not currently funded.	These positions will be considered for future funding through various sources including a variety of grants.

OBJECTIVE 4: Expand the training options available for increasing technology proficiencies and knowledge to include video streaming, and online or CD-ROM offerings.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
- Technology personnel - Time - Equipment upgrades.	See Obj. 3 above	This objective is not currently funded.	Although this is not currently funded with a position, E-Rate and Bond measure will assist with equipment and infrastructure needs as part of the ongoing monitoring of bandwidth

INFRASTRUCTURE, HARDWARE, TECHNICAL SUPPORT, SOFTWARE

INFRASTRUCTURE

OBJECTIVE 1:

Implement an ongoing plan to upgrade Local Area Networks beginning with selected school sites with older technology.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
- Existing Telecommunications and networking staff time to assess needs and install equipment - Equipment upgrades - Electrical Upgrades	\$ 200,000	• E-Rate Funding .	These projects are contingent upon E-Rate funding and available bond revenues

OBJECTIVE 2:

Continue the process of assessing and upgrading Wide Area and Local Area Networks to meet increasing instructional and professional development needs for video and audio.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
Begin to upgrade infrastructure as identified in Obj. 1 above.	No cost.	E-Rate Funding	These projects are contingent upon E-Rate funding.

OBJECTIVE 3:

Develop wireless networks at selected sites.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
Hardware and installation costs.	\$500,000.00	E-Rate Funding	These projects are contingent upon E-Rate funding.

HARDWARE:

OBJECTIVE 1: Every learning environment will have at least one Internet connected multi-media computer by July 1, 2003.

OBJECTIVE 2: By 2004, 80% of district schools will have met 60% of their target technology profiles.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
See Goal 1; Obj. 4	Included above		

OBJECTIVE 3: By 2004, an annual equipment replacement plan will provide for the upgrading of administrative and teacher workstations on a four year rotating basis.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
A four year replacement cycle would cost approximately \$200,000.00 per year.	No cost during year 1 or 2.		

TECHNICAL SUPPORT

OBJECTIVE 1: Implement network management software tools across the district including at all schools and provide training for site based network managers by July 1, 2003.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
Training in district software management programs: MacManager, Net Octopus and Window Management Software.	Software currently owned: no cost for years 1 and 2.		

OBJECTIVE 2: Increase site based support to keep pace with increasing numbers of computers with the goal of reducing the ratio of computers to support personnel at least 30% by July 2004.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
- 1 Additional Microcomputer Specialist position per year - Training in use of better network management tools to maximize existing staff (see obj. above)	\$ 80,000	<ul style="list-style-type: none"> • Site Budgets • Existing technology services staff will provide training in new software tools to district and site personnel to maximize their time. 	<p>This objective is not funded at this time due to budget constraints.</p> <p>Site budgets such as unding for High School through Technology Site Support and Training (TSST) funds will assist with meeting individual site needs.</p> <p>Overall district need will be evaluated each year based on work order tracking and site input.</p> <p>The most efficient models for utilization of existing staff will continued to be explored.</p>

SOFTWARE

OBJECTIVE 1: Update current software database to comply with CLRN standards and make this information accessible to teachers via the District web site.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
Existing personnel time - Site Mentors - Tech Support Staff	No additional costs	BUSD technology funds	

- Technology Coordinators			
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OBJECTIVE 2: Update district web sites to include grade level and content specific links to standards-based lesson plans and identified grade level appropriate electronic resources as those resources are identified by the content coordinators and curriculum committees.

Funding/Personnel Needs	Estimated Costs	Identified and Potential Sources	Comments
Existing personnel time - Content coordinators - Webmaster - Technology Coordinator	No additional costs	BUSD technology funds	

ADULT LITERACY

Within the boundaries of the Berkeley Unified district, adult literacy needs are served through a variety of agencies. BUSD Adult Education provides classes in basic literacy, GED preparation, ESL, and several specialty areas such as technology literacy, job interview skills, and parenting. Alameda County ROP offers classes in a variety of job and life skills within BUSD, including technology skills such as basic word processing, home budgeting with spreadsheets, resources on the Internet, and MOUS certification. Additional adult literacy services are provided by the local and county libraries, HUD, and various social service agencies (BOSS). These agencies generally provide only basic reading instruction and GED preparation.

Many facilities and labs are used by K-12 students during the traditional school day, and used by Adult Education and ROP courses that utilize technology after school hours. In addition, BUSD is committed to pursuing funding opportunities that will enable us to leverage resources and expand our ability to serve the adults in our community.

Goal: Community members will be provided with access to and instruction in technology.

Activities / Benchmarks:

End of year 1:

Adult Education will conduct surveys to determine skill levels and needs within the community.

Pilot technology classes, aligned to the high school technology expectations, will be developed and implemented by Adult Education.

The ROP program will evaluate their course offerings to articulate how they match with the high school technology expectations. Wherever possible, courses will be aligned with district technology standards.

Adult Education and ROP will evaluate the successes of the modified and pilot programs, and make necessary modifications to the curriculum as needed.

End of year 2:

BUSD will facilitate meetings between public and private adult literacy providers in the community (Adult Literacy Advisory Council).

Adult Education will implement technology courses across the district.

The Adult Literacy Advisory Council will conduct formal and informal surveys to gather data about the needs of the community.

End of year 3:

The Adult Literacy Advisory Council will be expanded to provide articulation with the community colleges and universities that serve the BUSD community.

RESEARCH-BASED METHODS AND STRATEGIES

Description of Strategies

The district is committed to research based school improvement strategies, especially in the area of technology. The technology plan was developed based on a set of research-based beliefs on how technology can impact student learning and how teachers can learn to use technology effectively. These beliefs include:

- 1. Technology improves student performance when the application directly supports the curriculum objectives being assessed.** We believe technology is a tool that can enhance learning and engage students. The decision to use any technology should be based on what's needed in the curriculum rather than using technology for technologies sake.
- 2. Technology improves motivation, attitude, and interest when students use technology applications to produce, demonstrate, and share their work with peers, teachers, and parents.** With technology, students can be involved in longer-term projects that engage higher-order thinking skills. Students engaged in these types of assignments utilize the Internet or software to research information, interact with a group to synthesize and summarize the information, and use presentation software to summarize their findings and

present it to the whole class. Educators can make evaluations of student skills by asking the student to perform tasks that demonstrate mastery of these skills. These projects also give teachers new ways to assess student progress. Teachers can not only assess discreet skills related to California Content Standards but can also assess elements such as: Depth of understanding, clarity of presentation, ability to summarize divergent data, ability to contribute and interact in a group setting.

3. School leaders can support on-site, just-in-time learning by tailoring programs to meet teacher needs. Key to the professional development is the site-based technology integration mentor. It is our belief that this site-based approach is an effective approach to staff development. Teachers learn best from other teachers. We strive to create a community of learners at each site.

4. Teachers need a variety of ongoing professional development. In addition to the site-based approach, teachers also need other avenues for growth. The original technology plan called for teachers to create “model classrooms” that integrate technology. This was partially based on the Apple Classroom of Tomorrow (ACOT) research that indicated that teachers need 3- 5 years to be able to fully integrate technology in their classroom. Now, many of the teachers in the model classrooms are now our Technology Integration Mentors with a number of years of experience trying out technology-based instructional strategies.

Description of Research

1. Technology improves student performance when the application directly supports the curriculum objectives being assessed.

Alignment of project or lesson content with state content standards is an important first step to infusing technology with curricula. A survey of 465 teachers in California resulted in 92% affirming that the first step in infusing technology into the curriculum is having information about the specific content of a program or use of an application that aligns with state-adopted curriculum standards. A number of the respondents indicated that an online resource that profiles electronic learning resources with the specific skills in knowledge areas that align with content standards would help them select programs that will facilitate curriculum integration with technology (Cradler & Beuthel, 2001).

In an analysis of nine case studies of schools where technology was used to conduct inquiry-based learning, (Means & Olson, 1997) described the role of teachers as "curriculum developers." Technology integration involved teachers in rethinking and reshaping their curriculum.

2. Technology improves motivation, attitude, and interest when students use technology applications to produce, demonstrate, and share their work with peers, teachers, and parents.

In *The Emerging Contribution of Online Resources and Tools to Classroom Learning and Teaching* (1998) Bracewell et al. states that one of the most consistent outcomes of placing information technologies in classrooms and ensuring that students have access to them has been that student interest in their education increase (see US Congress, Office of Technology Assessment, 1995, pp. 65-66). The same outcome is seen in the online classroom, where a more positive reaction to school has been found across diverse groups of learners. For example, in Schofield et al. (1997) almost all of the 28 elementary and secondary teachers participating in the Common Knowledge Internet project reported greater student interest and participation in classroom activities. Similar findings are being reported for at risk learners who are cut-off or alienated from school activities because of physical or learning disabilities, or social differences and problems. Bracewell, et al also found that in relation to traditional individualistic learning approaches, the use of computer technology to facilitate cooperative learning environments resulted in "(a) higher quantity of daily achievement, (b) higher quality of daily achievement, (c) greater mastery of factual information, (d) greater ability to apply one's factual knowledge in test questions requiring application of facts, (e) greater ability to use factual information to answer problem-solving questions, and (f) greater success in problem-solving."

3. School leaders can support on-site, just-in-time learning by tailoring programs to meet teacher needs.

In a review of research on staff development for technology insertion, (Cradler & Cradler, 1995) found significant factors in effective staff development to be:

- Development of school and classroom level technology plans by and for teachers.
- Understanding of ways to integrate technology into education reform.
- Teacher-awareness of effective technology applications.
- A social network of other technology-using teachers.
- Availability of teacher-mentors or other peer support.
- Involvement of principals and other administrators in the planning and training.
- Development of the knowledge to critique and select technology applications.
- Adequate time and increased opportunity for staff development and technical assistance.
- Awareness of and access to educationally relevant technology-based programs.

- Opportunities for educators to communicate with peers in other schools and at conferences.

In case studies of a national sample, (Honey & McMillan, 1996) found that educators stressed the value of their working relationships with colleagues. Through flexible scheduling for team teaching, interdisciplinary work and shared planning time, administrators can provide the context for teachers to learn to use telecommunications in the classroom. In interviews with 18 educators, (nine classroom teachers, four district technology supervisors/coordinators, three technology specialists at the classroom or school level and two librarians/media specialists) Honey and McMillan found that:

Regardless of their level of experience, the teachers who were more positive about the usefulness and excitement of using the Internet in their teaching were teachers who were working with groups-who were engaged in an ongoing process that involved both extensive training from experts and consistent support from colleagues.

4. Teachers need a variety of ongoing professional development

The Apple Classroom of Tomorrow (ACOT) was a research and development collaborative among Apple Computer, Inc., the National Science Foundation, and many universities and research institutions. The intervention provided two computers to each teacher and student and substantial staff development. The project purpose was to investigate how routine use of computers and technology influence teaching and learning. Findings from the first 10 years of the project include:

- As teachers became more comfortable and competent with the technology, they began working in teams and across disciplines.
- Classrooms became a mix of traditional and constructivist instruction.
- Students became more collaborative.
- Teachers altered their classrooms and daily schedules to permit students more time to work on projects.
- Teachers began to develop new forms of assessment that were performance- and portfolio based.
- Technology encouraged student-centered, cooperative learning.
- Technology often inspires teachers to use more complex tasks and materials in their instruction.
- The influence of technology on teaching and learning occurs over an extended period of time.

Extensive research conducted by the Office of Technology Assessment reports that "districts may be well advised to use multiple training and support strategies

tailored to the educational goals of the local site" (OTA, 1995, p.130). Data also indicate that no one strategy is best, rather the strategies are often combined at any given site. Among the strategies used by districts are:

- Technology-rich model schools.
- Trainer of trainer model where a cadre of teachers receive professional development so they can provide the same and help other teachers.
- Expert resource people.
- Providing every teacher with a computer.
- Training administrators and teachers, together.
- Creating teacher resource centers.

Description of Innovative Strategies

The Berkeley Unified School District is always interested in examining ways to deliver curriculum and professional development using new innovative, technology-based tools.

Strategies include:

- Examination of online courses for high school students who are in need of remediation, enrichment, or independent study
- Participation in video streaming pilots that deliver instructional videos through the Internet, such as through the County Office of Education.
- Videoconferencing capabilities in the district elementary science centers
- Online professional development for teachers
- Web-based tutorials before and after school and available at home
- Online AP classes for high school students

On an annual basis, the Instructional Technology Committee, will review and examine studies and research provided from a variety of sources, including the What Works clearinghouse. The What Works clearinghouse, funded by the US Department of Education, will provide the following easily accessible and searchable online databases:

- An educational interventions registry that identifies potentially replicable programs, products, and practices that are claimed to enhance important student outcomes, and synthesizes the scientific evidence related to their effectiveness.
- An evaluation studies registry, which is linked electronically to the educational interventions registry, and contains information about studies constituting the evidence of the effectiveness of the program, products, and practices reported.

- An approaches and policies registry that contains evidence-based research reviews of broader educational approaches and policies.
- A test instruments registry that contains scientifically rigorous reviews of test instruments used for assessing educational effectiveness.
- An evaluator registry that identifies evaluators and evaluation entities that have indicated their willingness and ability to conduct quality evaluations of education interventions.

The resources of the What Works Clearinghouse, along with research from other educational sources, will be utilized and incorporated into the Educational Technology Master Plan as appropriate to ensure that educational technology plans of the Berkeley Unified School District are consistent with current scientifically based research regarding technology.

MONITORING AND EVALUATION: Goals, Objectives and Benchmarks

OVERALL GOAL: BUSD’S Instructional Technology Committee will be responsible for the implementation of this plan under the direction of the Director of Curriculum, Instruction and Staff Development.

OBJECTIVE 1: The progress of the plan’s goals of upgrading and replacing equipment in support of the instructional program will be measured by looking at the infrastructure data on the online survey.

OBJECTIVE 2: The progress of meeting the professional development goals will be measured by reviewing the data from the CTAP² site.

OBJECTIVE 3: The effect of the instructional technology program as a piece of the BUSD’s strategic plan will be reviewed through the use of student achievement data (SAT-9, DRA, local assessment, CHSEE).

TIMELINE/EVALUATION

The Instructional Technology Committee will continue to meet monthly with the Director of Curriculum, Instruction and Staff Development in attendance quarterly. This advisory committee will look at the performance indicators and revise the activities as needed to meet the stated goals and objectives of the plan.

Appendix A:
**Enhancing Education Through Technology Formula Grant Program
 Criteria for EETT-Funded Education Technology Plans**

In order to be approved, an EETT-funded plan needs to have “Adequately Addressed” each of the following.

For corresponding EETT Requirements, see Appendix F

1. PLAN DURATION		Adequately Addressed	Not Adequately Addressed
a. The plan should guide the district’s use of education technology for the next 3-5 years.		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 Corresponding EETT Requirement(s): 7, 11,	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.	Page 3	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.

**Enhancing Education Through Technology Formula Grant Program
Criteria for EETT Funded Education Technology Plans**

3. CURRICULUM COMPONENT Corresponding EETT Requirement(s): 1, 2, 3, 8, 10, & 12.	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.	Page 10	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.	Pages 10-11	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 in various district and site comprehensive planning documents.	Page 17	The plan references other district 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 improve teaching and learning by supporting the district curricular goals and academic content standards.	Pages 17-19	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.
e. List of clear goals and a specific implementation plan as to how and when students will acquire technology and information literacy skills needed to succeed in the classroom and the workplace.	Page 19	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.	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.

**Enhancing Education Through Technology Formula Grant Program
Criteria for EETT District Education Technology Plans**

3. CURRICULUM COMPONENT, Continued	Page in District Plan	Adequately Addressed	Not Adequately Addressed
f. List of clear goals and a specific implementation plan for programs and methods of utilizing technology that ensure appropriate access to all students.	Page 19	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.	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.
g. List of clear goals and a specific implementation plan to utilize technology to make student record keeping and assessment more efficient and supportive of teachers' efforts to meet individual student academic needs.	Pages 19-20	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.	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.
h. List of clear goals and a specific implementation plan to utilize technology to make teachers and administrators more accessible to parents.	Pages 20-21	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.	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.
i. List of benchmarks and a timeline for implementing planned strategies and activities.	Pages 18-22	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.	The benchmarks and timeline are either absent or so vague that it would be difficult to determine what should occur at any particular time.
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.	Page 22	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.

**Enhancing Education Through Technology Formula Grant Program
Criteria for EETT Funded Education Technology Plans**

4. PROFESSIONAL DEVELOPMENT COMPONENT Corresponding EETT Requirement(s): 5 & 12.	Page in District Plan	Adequately Addressed	Not Adequately Addressed
a. Summary of the teachers' and administrators' current technology skills and needs for professional development.	Page 24	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.	Page 26	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 will 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.	Pages 26-27	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	Page 27	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.

benchmarks and timeline.			
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**Enhancing Education Through Technology Formula Grant Program
Criteria for EETT Funded Education Technology Plans**

5. INFRASTRUCTURE, HARDWARE, TECHNICAL SUPPORT, AND SOFTWARE COMPONENT Corresponding EETT Requirement(s): 6, & 12.	Page in District Plan	Adequately Addressed	Not Adequately Addressed
a. Describe the technology hardware, electronic learning resources, networking and telecommunication infrastructure, physical plant modifications, and technical support needed by the district’s teachers, students, and administrators to support the activities in the Curriculum and Professional Development Components of the plan.	Page 30	The plan clearly summarizes the technology hardware, electronic learning resources, networking and telecommunication infrastructure, physical plant modifications, and technical support proposed to support the implementation of the district’s 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. Describe the 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.	Pages 31-34	The plan clearly summarizes the existing technology hardware, electronic learning resources, networking and telecommunication infrastructure, and technical support to support the implementation of the Curriculum and Professional Development Components. 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 plan components.	Page 34	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.	Page 34	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.

**Enhancing Education Through Technology Formula Grant Program
Criteria for EETT Funded Education Technology Plans**

6. FUNDING AND BUDGET COMPONENT Corresponding EETT Requirement(s): 7, & 13.	Page in District Plan	Adequately Addressed	Not Adequately Addressed
a. List of established and potential funding sources and cost savings, present and future.	Pages 35, 37-42	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).	Pages 37-42	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.	Page 42	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.	Page 31	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.	Page 36	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.

**Enhancing Education Through Technology Formula Grant Program
Criteria for EETT Funded Education Technology Plans**

7. MONITORING AND EVALUATION COMPONENT Corresponding EETT Requirement(s): 11	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.	Page 48	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.	Page 49	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.	Page 49	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.	Page 42	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.

Criteria for EETT Funded Education Technology Plans
Enhancing Education Through Technology Formula Grant Program
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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	Pages 43-44	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.

<p>relevant research and effective practices.</p>			
<p>b. Description of thorough and thoughtful examination of externally or locally developed education technology models and strategies.</p>	<p>Pages 44-47</p>	<p>The plan describes references to research literature that supports why or how the model improves student achievement.</p>	<p>No research is cited.</p>
<p>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).</p>	<p>Pages 47-48</p>	<p>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.</p>	<p>There is no plan to utilize technology to extend or supplement the district's curriculum offerings</p>

Appendix B

Technical Specifications for Computers Purchased or Leased

These technical specifications are not designed to limit the flexibility of schools to choose the appropriate technology for their needs, but to set an appropriate “floor” for minimum technical specifications so that equipment purchased under this program will continue to be useful for three to five years into the future.

	Minimum PC Requirements*	Minimum Mac Requirements*
REQUIRED		
Operating System	Windows 2002 Professional or Windows XP Professional capable	Macintosh OS X capable
Processor	Intel Pentium IV 2.0 GHz (or equivalent with CDE approval)	G4 700 mhz
Memory--RAM	256 MB	128 MB
Hard Drive	20 GB	20 GB
CD ROM	DVD/ CDR	DVD/ CDR
Audio and Video	Integrated audio with speakers	Integrated audio with speakers
Connectivity	10/100BASE-T Ethernet USB ports	10/100BASE-T Ethernet USB ports
Monitor	15”-Color Display (1024 X 768)	15” Color Display
Keyboard and Mouse	Compatible keyboard and pointer device included	Compatible keyboard and pointer device included
Energy Star Features	Energy Star Compliant	Energy Star Compliant
Necessary Software	Current Version of Internet Explorer or Netscape Navigator	Current Version of Internet Explorer or Netscape Navigator
Laptops: Same specifications as above except as noted for processor and screen.	PC- based laptops: Intel Pentium IV 1.6 GHz (or equivalent with CDE approval) and 14.1”screen size	Macintosh-based laptops: may utilize a 600 mhz Power PC G3 processor and screen size as determined by the manufacturer
SUGGESTED		
Monitor	17” inches or larger suggested for desktops	17” inches or larger suggested for desktops
Expandability	Consider options for expansion so the computer is useful for 3-5 years	Consider options for expansion so the computer is useful for 3-5 years
Limited Warranty and Support**	Consider 3 year parts and labor Limited Warranty with 3 years	Consider 3 year parts and labor Limited Warranty with 3 years

	On-Site Service, Limited Hardware & Software Tech Support	On-Site Service, Limited Hardware & Software Tech Support
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*All specifications include “or functional equivalent at time of purchase.”

**This program requires those receiving funds to “obtain a maintenance agreement for all equipment acquired under this program at the time of purchase/lease or otherwise identify funding for maintenance/support of the equipment for a period of not less than 3 years.”

It is highly recommended that eligible schools or districts build this into their purchase/lease agreements.