Massachusetts Adult Literacy and Technology Plan
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OCTOBER 24, 1997
This document represents the thinking of the Massachusetts Adult Literacy and Technology Team* ; participants at Network '96, the Massachusetts state adult education conference; staff of the Massachusetts Department of Education (MADOE) adult education cluster, including the Administrator of Adult and Community Learning Services, Bob Bickerton; and staff from the Massachusetts System for Adult Basic Education Support (SABES). Although there is widespread agreement about the contents of this plan, there may not be consensus on every part. For information or comments, contact:
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* For a description of the Massachusetts Adult Literacy Technology Team (MALTT), see Appendix, Item 6.
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Adult Literacy and Technology for the Twenty-First Century
A Three-year Massachusetts Statewide Plan for the Use of Technology in Adult Literacy Education
The Massachusetts Adult Literacy Technology Team (MALTT)
October 24, 1997
SUMMARY
This is a plan for incorporating technology, primarily computers and videocassette equipment, in adult literacy education programs across Massachusetts. Its purpose is to enable adult basic education students, those at the basic and pre-college levels, enrolled in publicly-funded adult literacy, adult basic education, adult secondary education or English for Speakers of Other Languages programs, to access and use technology for learning, finding information, and for communication. Its promise is to enable the parents of K-12 children and other adult residents of the Commonwealth who are pursuing basic skills instruction to access and acquire the technology skills they need to help their children and themselves at work, at home, and in their communities in the Massachusetts of the twenty-first century.
I. INTRODUCTION
Computers and other forms of electronic technology are pervasive, and now often taken for granted, throughout most of our society. We find them available or required for customers in banks, patrons in libraries, and increasingly as employee tools in workplaces. Yet they are not widely available or used in most adult education programs and they are not yet to be found in the majority of homes of adult basic education students. These adult students, like their children, must become skilled and comfortable using computers and other forms of technology to continue to be -- or to become -- self-sufficient and successful contributors to their communities and to a global American society.

This plan calls for a major investment in information and communication technology in adult basic education programs, one which will prepare adult learners to use technology skillfully and comfortably at work and in daily living tasks such as writing letters, keeping track of family expenses, getting family health information, finding a job, finding childcare, shopping, paying taxes, and recording family events. In a state which depends for economic growth on a highly skilled workforce, one whose companies increasingly assume use of computers even in low wage jobs, it is critical that adult education programs prepare students to master and be at ease with the powerful tools of electronic technology.

Beneficiaries

A wide range of stakeholders will benefit from this plan; however, our primary focus is on adult learners and their families and adult basic education practitioners. A secondary focus is adult literacy support professionals, such as curriculum and staff developers and librarians, who will also enhance their skills and resources as a result of this plan. Ultimately, employers and all residents of the Commonwealth will benefit from an economically self-sufficient, literate, and technologically skilled workforce, and from increasingly literate neighbors in their communities.

Adult Learners' Need for Basic Education

Although it may surprise many Bay Staters, nearly 45% of Massachusetts adults lack the educational foundation now needed to achieve family, community and employment-related priority goals. Specifically:

* 908,718 adults in Massachusetts have not completed high school and 156,297 adults are limited English proficient. (1990 Census)
* 877,000 (19%) of Massachusetts adults have not yet attained functional literacy, and another 1,162,000 (25%) fall below the level of mastery education reform envisions for high school graduates (1995 Massachusetts Adult Education Committee)
* Among the state's 20,426 incarcerated adults and youth, 33% are functionally illiterate. Another 33% are literate but lack the level of skills expected of a high school graduate.
* Almost 50% of adults on public assistance do not have a high school diploma. Over 60% of those who spent more than five years on public assistance entered AFDC with less than a high school education.
* Adult recipients of AFDC with low literacy skills work 11 weeks per year, on average, compared to 29 weeks for those with strong literacy skills.
* Workers who lack a high school diploma earn an average monthly income of $452, compared to $1,829 for those with a bachelor's degree.
* Of these undereducated adults, 465,000 (44%) have children under 13 living below the poverty level.
* Adults with low levels of literacy are half as likely as their more educated neighbors to participate in our democracy and vote.
* Children in 114,000 families have a parent who cannot read aloud to them. Children in 264,000 families have parents who have difficulty helping them with homework and are unlikely to become an advocate for them at school.
* 90% of the Fortune 1000 executives expressed concern that low literacy is hurting their productivity and profitability.

(Unless otherwise indicated, the source for the above is the Massachusetts Department of Education, 1997)

Adult Learners' Needs for Using Technology

Adult basic education students also need to know how to use technology; to know how to enhance their learning using computer-assisted instruction and online courses; to take advantage of productivity and communication tools

such as word processing and email; and to use electronic catalogs and databases found in libraries, record stores, and increasingly for shopping on the Internet. Most important, they need to feel comfortable and adept at using technology for continuing education and information searching of all kinds.

Several recent national studies have pointed toward the importance of our educational system meeting these needs: in particular, the Secretary of Labor's Commission on the Advancement of Necessary Skills (SCANS) Report, "What Work Requires of Schools," and the "Equipped For the Future" Project study being carried out now by the National Institute for Literacy. These reports demonstrate the need, from the perspective of employers and of adult students, for the use of technology for communication, problem solving, and learning-to-learn skills.

Because so many undereducated Massachusetts adults need basic skills and technology skills, and because they are not included in current Massachusetts state technology plans for K-12 education, they require the special attention called for in this plan.

Although claims are sometimes made for how using technology can dramatically increase the number of adult learners who can be served, this is not what we anticipate as the primary benefit of technology in Massachusetts adult basic education. Instead, we see electronic technology as a set of learning, information, communication and productivity tools which, if used well by adult students and their teachers, can transform and improve the quality of adult basic education and of adult learners' lives. Nevertheless, we do see a need to experiment with models which incorporate into distance education direct, "real-time" or in-person instruction. These are particularly needed for adult learners in areas of the state where adult education programs do not exist, or where programs have long waiting lists.

Staff/Program Needs for Using Technology

If adult learners are to meet the challenges of a changing workforce and society, the teachers and other practitioners who enable their learning also need adequate access to, knowledge of and skills in using different forms of technology. Indeed, these tools have helped some teachers and learners to transform traditional, teacher-centered lecture, or workbook learning models into learner-centered, collaborative, project-based, inquiry-oriented, participatory learning environments. Computers and other forms of technology are integral to three basic educational purposes which underlie this plan:

1. Learning and Instruction,
2. Researching, Processing and Managing Information, and
3. Communication.

Need for Staff Development/Training in Technology Use

Currently, minimal support, training and technical assistance is offered on regional and statewide levels. It is imperative that more teachers and other practitioners receive initial and on-going training in the use of computers and their applications in adult literacy education and that, to a large extent, this be provided onsite at the programs.

Current Efforts to Meet This Need

The Massachusetts Adult Literacy Technology Team (MALTT) was formed to further the use of technology in adult literacy/basic education/ESOL programs in Massachusetts. For nearly four years this partnership of over 30 practitioners, the Massachusetts Department of Education, SABES, and the Massachusetts Corporation for Educational Telecommunications (MCET), has been primarily concerned with technology training and technical assistance on a statewide level.

The Massachusetts System for Adult Basic Education Support (SABES) has organized regional technology teams to help practitioners explore technology

issues and plan technology training. These five regional teams vary in their strength, purposes and focus: for example, the Boston area regional team has focused for several years on student and practitioner use of the Internet, including Web page design. Other regional teams have focused on review and use of software and other issues. Through this plan we hope to strengthen these teams' capacity to grow and plan technology training, increase use of the Internet, and integrate technology in programs' curriculum.

Regional SABES centers have integrated technology as an area of emphasis in the SABES annual workplan. However, their current resources and expertise in technology staff development are quite insufficient to meet the need and demand of practitioners.

Broad Purposes of This Plan

The ultimate aim of this plan is to improve the Commonwealth's capacity to address adult literacy/basic education/English language learning. It will move adult basic education in Massachusetts into the computer and information technology age. In order to achieve and maintain this capability we need to address three purposes, to:

1. Develop an adult basic education program technology infrastructure across Massachusetts at least equal to that in K-12 public schools;
2. Build adult learner and practitioner skills and confidence in using technology; and
3. Provide support to staff, adult learners and programs.

Each of these purposes is dependent on the others and requires commitment from state, regional and local program levels.

II. A STATEWIDE ADULT BASIC EDUCATION TECHNOLOGY PLAN

Goals and Objectives

Following this list of goals and objectives is a more detailed breakdown of the objectives.

GOAL A) Develop a technology infrastructure in Massachusetts adult basic education programs through which adult learners and practitioners can easily access and use technology:

OBJECTIVE 1: Hardware, software and connectivity

OBJECTIVE 2: Program technology plan

GOAL B) Build learner and practitioner computer/video skills and confidence.

OBJECTIVE 1: Facilitate/enhance learning and instruction

OBJECTIVE 2: Process and manage information

OBJECTIVE 3: Facilitate electronic communication (both asynchronous and real-time) Electronic communication increases opportunities for practitioner and student collaboration, enables quick communication to the field, and within the field.

GOAL C) Provide support to staff, learners and programs

OBJECTIVE 1: Provide statewide support

OBJECTIVE 2: Provide support on a regional level. SABES Technology staff development will result in practitioners and students at the programs developing on-site expertise and the ability to troubleshoot for themselves.

OBJECTIVE 3: Provide support for technology activities at the program level.

GOAL A) Develop a technology infrastructure in Massachusetts adult basic education programs through which adult learners and practitioners can easily access and use technology:

OBJECTIVE 1: Hardware, Software and Connectivity

Adult learners and teachers must have daily access to all basic/minimum computer hardware and software and video tools. These

tools need to include appropriate assistive technology for students with disabilities.

a. Program Hardware (See appendix for minimum, moderate, and advanced levels.)

All adult literacy/basic education/ESOL programs will need at least the following, and it should be regularly available to students and teachers:

(1) three state-of-the-art computers, each with a CD-ROM player, sound (in and out, with microphone, speakers and earphones), video capacity, modem and a high capacity storage system;

(2) one large-screen tv monitor and the hardware and software to connect a computer to this for large group instruction by the end of the first year;

(3) a videocassette recorder and camera by the end of the first year; and

(4) a digital camera.

Eight to twelve of the programs in each region will need:

(1) computers connected in a Local Area Network with a server. The computer-to-student ratio will be at least 1:10 computers to students present at the program at a given time as a minimum, and will approach 1:5 as a best case by the end of the second year; and

(2) Software to assist students who have learning disabilities

At least two programs per region will need:

(1) videoconferencing software; and

(2) a state of the art, high-speed Internet-accessible, networked lab which meets MADOE specifications

At least one program per region will also need:

specific assistive technology, hardware and software, for students who are physically challenged, hearing or visually impaired, which meets MADOE specifications.

b. Program Software

Students and practitioners will know what software is available for them to use and what purposes they can accomplish with it. They can easily and regularly access it and they know what software to use to accomplish what purposes, where to start, what to use next.

There will be a variety of useful, widely-used, state of the art software, including: productivity tools such as word processing, databases, spreadsheets, desktop publishing and graphics software; tools for discovery- based learning such as discovery adventure games; computer- based instruction software; software for LD students: and Internet videoconferencing software. Productivity tools will be in place at all programs no later than the end of the first year.

c. Connectivity

Internet connectivity requires one or more telephone lines, and ideally a higher bandwith connection. Every program will work toward having state of the art connectivity by the end of the third year through cable, high speed lines, satellite, or other means, and most of the program's computers will be connected in a local area network with access to the Internet. Our assumption is that MADOE will continue to pick up the costs for up to two Internet accounts per program.

Timeline:
YEAR 1: By the end of the first year, every DOE-funded program will have an internet connection, "a minimum level of hardware," and:
+ Eight programs/region will have a LAN (with a server)
+ Two programs/region will have a fully-networked computer lab
+ Two programs/region will have videoconferencing capability
+ One program/region will have assistive hardware and software
+ 50% of teachers, 50% of learners will have regular access to hardware, and
+ 30% of teachers, and 30% of learners will use hardware "regularly."
YEAR 2: By the end of the second year:
+ 80% of teachers will have access to hardware
+ 50% will use hardware "regularly"
+ 75% of learners will have access to hardware, and
+ 50% will use hardware "regularly."
YEAR 3: By the end of the third year:
+ 100% of the teachers will be able to access computers, and
+ 90% will use hardware "regularly"
+ 100% of the students will access hardware, and
+ 80% will use hardware "regularly."
OBJECTIVE 2: Program technology plan
a. Every adult literacy/basic education/ESOL program will have a three-year program technology plan which addresses its vision for how technology will be used. It will include:
(1) A program survey of learner and practitioner access, including specific needs of students with disabilities;
(2) Specific goals for using technology;
(3) Plans for purchase of hardware and software;
(4) A technology staffing plan;
(5) Student involvement in planning;
(6) Staff and student training and support;
(7) A budget; and
(8) Plans for raising resources, including building collaborations with other agencies such as libraries, community computing centers and local housing agencies.
b. Technology plan review, storage, oversight and technical assistance.
(1) Review: The initial review of technology plans submitted by programs will be conducted by ACLS staff, with the assistance of MALTT members. Those programs whose plans are not acceptable or complete will receive technical assistance from MALTT and/or regional technology team members. Such technical assistance time will be compensated by the SABES Regional Support Centers (RSCs).
(2) Storage: The original copy of each program's plan will be stored at ACLS, with a copy of each plan stored at the SABES Central Resource Center.
(3) Oversight: Monitoring each program's compliance with and reasonable progress towards implementation of its technology plan will be solely the responsibility of ACLS staff.
(4) Technical assistance: The SABES RSCs, working in

conjunction with the regional technology teams and MALTT, will provide ongoing training and technical assistance for the purposes of strengthening programs' technology-related skills and of helping programs meet their technology plan goals.

Timeline:

END OF YEAR 1: revisions for three-year plan completed, first year goals implemented

END OF YEAR 2: second year plan goals implemented

END OF YEAR 3: third year goals implemented, plan revised

GOAL B) Build learner and practitioner computer/video skills and confidence.

Adult learners and their teachers need to become proficient in the use of various technologies. It is understood that the level and extent of certain competencies may be similar for staff and students depending on the desired outcome. For example, computer basics and keyboard skills are needed by both students and teachers. Certain skills may be more applicable to adult learners in individual, collaborative or family learning settings. In some programs, staff may require greater proficiency with content and application. Program staff also need to acquire good strategies to solve hardware and software problems, for example to successfully identify if problems are large or small in scope and what needs to be done to solve them.

(The achievement of skills and confidence will be evaluated according to competency criteria described in the Evaluation section.)

OBJECTIVE 1: Facilitate/enhance learning and instruction using any or all of the following:

Tutorial software; software tools for interactive/discovery learning; skill and practice software; group instruction/learning software (used by a group of learners, not individuals alone); learning tool software (see Objective #1 above for description of this), on-screen manipulatives, math tools, etc.; education simulation software; courses on-line and courseware; interactive project-based learning; on-line assessment, etc.

a. Students (and their families) will be able to:

(1) Gather information

(a) Look up information on the Internet and on CD-ROM encyclopedias (for example) pertaining to their personal interests as well as the interests of their children;

(b) Become excellent electronic environment researchers, quickly finding information;

(2) Critically analyze information gathered

(3) Use individual pieces of computer software to acquire information, and learn and practice skills.

(a) Use spreadsheets and databases for learning mathematics, analyzing survey information, recording science data; and

(b) Use computer-assisted instruction for language learning;

(4) Apply for employment and employability training

(a) Investigate opportunities from online jobs databases;

(b) Investigate skills needed for particular jobs from the new online O*Net database and others;

(c) Read the Webpages of companies to whom they

are considering applying for jobs or with whom they will be interviewing; and
(d) Use word processing for resumes and job application letters;
(5) Support and guide children in their families Help children use computers for homework, information searching, virtual visits to museums and other online education resources, communication and other purposes;
(6) Communicate with others online using email, message forums, electronic lists and "chat rooms;" and
(7) Word process and publish their writing, in hard copy and online on Websites, and read the published writings of other students.
Timeline:
END OF YEAR 1: 50% of the students will be able to access computers for these purposes; 30% will use them regularly.
END OF YEAR 2: 75% will be able to access and 50% will use computers.
END OF YEAR 3: 100% of the students will be able to access, and 80% will have used computers for these purposes.
b. Staff will be able to:
(1) Use a variety of software and video (such as software productivity tools, tools for interactive/discovery learning; skill and practice software; group instruction/learning software; learning tool software; and education simulation software) to facilitate the application of basic skill areas like reading, writing, and mathematics in the classroom, to:
(a) word process, record information in databases, use spreadsheets to teach math;
(b) develop custom classroom materials;
(c) conduct online assessment; and
(d) develop and conduct interactive class projects using email, listservs, and Websites to do project-based learning between and among classes across the country and the world;
(2) Conduct information searches to:
(a) get print and non-print lesson plans and/or materials for their classrooms from the Internet and
(b) become excellent electronic environment researchers, quickly finding the information they need;
(3) Publish lessons, articles, and other writings online;
(4) Conduct research/information searches (using software; gopher sites; Websites; online catalogs; online, full document storage banks; and other electronic information repositories to search for information about: jobs, education programs, colleges, successful teaching/learning practices, etc.;
(5) Be an effective inquirer/researcher/searcher in an electronic environment (gopher, WWW, CD-ROM database, etc.), including how to evaluate the accuracy and quality of information and resources;

(6) Use courses on-line and courseware; and
(7) Using a variety of electronic media (videotapes, two-way, interactive video, video teleconferencing, listservs, satellite downlinks, and usenet groups,) become more informed and skilled in their work. This could include teachers writing and reading about their practice.

Timeline:

END OF YEAR 1: 50% of staff will access computers, 30% will use them regularly.
END OF YEAR 2: 80% will access, 50% will use regularly.
END OF YEAR 3: 100% will access, 90% will use regularly (Also see ABE Teacher Competencies for Technology in appendix.)

c. Learner/staff collaborations will:
(1) create proposals, plans and other documents;
(2) collaborate on products; and
(3) engage in project-based learning. Note: collaborative work implicitly is part of other objectives in this plan.

OBJECTIVE 2: To Process and Manage Information

a. Students will be able to:
(1) Use word processing software for writing; and
(2) Use spreadsheets and databases for learning mathematics, analyzing survey information, recording science data, etc.

b. Staff will be able to:
(1) Use word processing software for writing;
(2) Use desktop publishing and HTML software for publishing;
(3) Use spreadsheet software for spending plans/budgets, cost accounting, and class scheduling; and
(4) Use database software for recording and managing information such as: the Massachusetts DOE Smart ABE M.I.S., and program waiting lists.

OBJECTIVE 3: Facilitate electronic communication (both asynchronous and real-time). Electronic communication increases opportunities for practitioner and student collaboration, enables quick communication to the field, and within the field. Using such telephone conferencing, email, electronic lists, usenet groups, and/or two-way interactive picture teleconferencing (for example):

a. Learners will be able to:
(1) communicate learner-to-learner;
(2) gather personal information; and
(3) use email, listservs, and Websites to do project-based learning between and among classes across the country and the world.

b. Practitioners will be able to:
(1) communicate practitioner-to-practitioner;
(2) publish and disseminate information useful to practitioners and adult learners such as: Curriculum Frameworks, curriculum units, articles, summaries of research on a particular topic, question or problem; and documentation and dissemination of adult education practice and program implementation by practitioners through faxes, videotape, one-way and two-way video

broadcasting. "narrowcasting," and Webpages,
(3) conduct staff meetings and training. Methods such as two-way interactive picture teleconferencing may reduce travel to meetings, and thus time and costs.

GOAL C) To provide support to staff, learners and programs

Programs need varying levels of support to accomplish the objectives set forth in this plan. They need funds or other resources to develop an infrastructure. Every staff member at every program needs regular access to ongoing technology and staff development in the use and applications of various forms of technology described here. It is understood that using technology well requires a major investment of staff development time on the part of teachers, administrators and other staff. And because of high turnover in our field, this training must be ongoing. Training should also include how to use software to help students with learning difficulties/disabilities.

These responsibilities are shared by practitioners, programs, SABES, and the Massachusetts Department of Education.

OBJECTIVE 1: To provide statewide support

a. The Massachusetts Department of Education will:

(1) Support the purchase, use, and training to use technology (Note: D.O.E. staff must also get the support and staff development they need to plan for and use technology well);

(2) License and distribute software. Set up a buyers co-operative or purchase plan which allows for discounts and statewide distribution of licensed software. Adult education programs across the state should be established by MADOE as a "district" enabling the use of a software license across all DOE- funded programs.)

Timeline: In the second year

(3) Provide funding for purchase of leading edge (new) and trailing edge (donated) hardware. A program should use 2-5% of its total budget for this.

Timeline: Beginning in first year and then ongoing

(4) Fully develop an electronic adult education program MIS which is integrated, painless, and routine.

(5) Increase DOE staff capacity to purchase and use technology hardware and software.

Timeline: From the first year

b. The MALTT will continue to provide support to monitor and implement this plan , for planning statewide technology training, and for coordinating this effort with K-12, higher education, Star Schools/MCET, with the NIFL Region I Hub, and with other state and regional technology and education efforts. This will include:

(1) technical assistance, support, and information for practitioners across the state through the MALTT electronic listserv;

(2) development and delivery of the technology strand at the annual statewide adult education conference, "Network;"

(3) support of the regional technology teams in the five SABES regions;

(4) monthly meetings held simultaneously in Eastern and Western Massachusetts (connected by Picture-tel) represented by teachers and administrators and other

practitioners from across the state.
OBJECTIVE 2: Provide support on a regional level. SABES Technology staff development will result in practitioners and students at the programs developing on-site expertise and the ability to troubleshoot for themselves. This will be accomplished through:
a. Workshops and Courses
(1) Teacher technology training - SABES will offer basic technology training in every region at least annually for all teachers and other practitioners who need this. This could also be offered through interactive video (e.g. through two-way, interactive broadcast, or Internet online videoconferencing.)
(2) Basic technology will include both: an introduction to computers (including word processing), and an introduction to the Internet (email, Web browsers, copying files to disk, etc.) This would be the responsibility of the regional technology technical assistance person (see budget below);
b. Regional technology teams. Each SABES Regional Support Center will receive funding to support a facilitator/coordinator. (This role will be part of the regional technical assistance position discussed above.)
c. Mentoring, study groups, mentor training programs and sharing groups
d. Technical assistance: "Techno-buddies" and VISTA volunteers; These T.A. people also will meet regularly each 4-6 weeks, as a team, so resources across the state are coordinated, so that there is "cross-pollination" and sharing of expertise. They will develop FAQ's online, in hard copy, and/or by telephone tree.
e. Technology staff development for SABES staff. All SABES Regional Support Center (RSC) staff will be adept in using: word processing, a simple database, email, electronic lists, the World Wide Web, file transfer protocol, and videoconferencing software. Each SABES RSC will have at least one person at all times who is comfortable and adept in using computer-assisted instruction, desktop publishing, and who helps the RSC to properly handle information storage, machine maintenance and diagnosis.
See http://k12s.phast.umass.edu/~halo1/faculty/steve/comps.html for "Proposed ABE Teacher Competencies for Technology."
Timeline: From the first year, there will be the equivalent of three full-time technology T.A./training positions to be shared among the five SABES regions. They will provide technology courses and workshops, answer technology questions by telephone, and make site visits to programs. They will assist the regional technology teams and work with the MALTT.
OBJECTIVE 3. Programs will provide support for technology activities at the program level.
a. Technology Expertise
There will be at least one Gold level technology expert staff person in each program who can also serve as a "techno-buddy" or mentor for other staff members and students. This is a person who is easily accessible and while not a technology

expert, has a higher skill and comfort level in using technology and is available from time to time to help others learn and solve problems.

b. Student Roles in using Technology

Each program is expected to support a student technology committee, which, in part, will enable students to train each other in the use of computer hardware and software. At least one teacher should serve as an advisor or mentor to this committee. The committee is expected to have input regarding the design, implementation, revision, and evaluation of the program's technology plan.

III. EVALUATION

The state technology plan will be evaluated annually in terms of its goals and objectives. An evaluation task force will be convened by MALTT and MADOE and will include representatives from MALTT, and MADOE; it will also include teachers, administrators and, if possible, students. The task force will hire an evaluator who will review the evaluation design below, design data collection instruments and provide reports to MALTT and MADOE and the evaluation task force. The purpose of this formative evaluation is to provide MALTT and MADOE with information needed to improve the statewide plan and the implementation and use of technology in programs across the state.

We anticipate the need for the following kinds of data:

1) Each program will be asked by MADOE to submit twice-yearly (in February and August) a short (1-3 page) progress report on the implementation of the goals and objectives in their program technology plans. The evaluator will help in the design or refinement of this instrument and will collect and analyze these data;

2) Each program will also submit annually an updated inventory of hardware and software and of use by students and teachers and other staff (the SABES survey used in 1997, but refined as needed);

3) Focus groups will be held by the evaluator with teachers, administrators and students;

4) Individual interviews will be held by the evaluator with teachers and administrators, as needed;

5) The evaluator will review other pertinent documents such as this plan and program technology plans submitted to MADOE.

Through these means we hope to know:

1) The extent to which we are achieving the main purposes of this plan, to enable adult learners and practitioners to use technology for:

a) Researching, processing and managing information,

b) Learning/instruction, and

c) Communication;

2) The extent to which we are accomplishing the goals and specific objectives laid out in this plan;

3) Changes in the mean, mode and range of level of hardware and software at programs across the state (for example, how many programs are at :

level 1: one computer used primarily for administrative purposes;

level 2: two-five computers used for administrative purposes, computer-assisted instruction, (non-Internet) communication and research;

level 3: several computers, with some access for teachers and students to the Internet;
level 4: a local area network of computers, with some or all connected to the Internet;
level 5: high-speed access to the Internet for all computers, connected through a LAN. Some computers in lab(s) setting(s) ; some also in classrooms with Internet access;
4) The ways in which the hardware and software are used by students, teachers, administrators and other staff (for example, for email, staff development, instruction/learning, research/information gathering, project-based learning, etc;)
5) The number of practitioners at each program who have acquired increased technology competency (tin, bronze, silver or gold) and then aggregated across the state; and
6) The growth in learner confidence and skills in using technology. Through this extensive evaluation we hope to know what kind of impact this plan is having at the program level among adult learners and practitioners, what the value added is, what differences the use of technology makes.

IV. BUDGET

o Budget/ Rationale for Goals as noted in text
o Budget for 3-year Technology Plan
o Assumptions and Definitions:
+ MALTT is the Massachusetts Adult Literacy Technology Team,
+ MADOE or DOE is the Massachusetts Department of Education
+ SABES is the Massachusetts System for Adult Basic Education

Support

For all programs

State of the art computer @ $2,000.

In June, 1997, $2,000 would buy a Pentium MMX/166 computer with 2 GB hard drive, 16 MB RAM, 2 MB Video RAM, Soundblaster, Speakers, 33.6 Modem, 8X CD-ROM, Windows 95, and 15 inch color monitor

One high capacity storage device is a ZIP drive for $150. Ten Zip disks cost $150.

Large screen monitor + hardware (software included) to connect to computer: $1000

VCR and video camera @ $1,000, digital camera @ $800

Program software for all sites: $3,000

.25 time technology coordinator @$7,000 + 25% benefits

For eight-twelve programs

Local area network including server @ $4,000, windows NT or Novell software @$1,000, 10 Ethernet cards @ $30 each and an ethernet hub @ $100

For 2 programs per region

Networked lab: Internet provider contract @ $10,000 per year. Program software: licensed networked software can cost thousands. We propose $5,000 each site for an average of ten sites.

For 1 program per region

videoconferencing: $3,000 + $1,000 usage

Adaptive/assistive technology lab: $15,000 for hardware, $25,000 for personnel and user training. One proposal per region would be solicited so that a variety of disabilities might be addressed

Staff training and support

Full-time Technical support person @$40,000 + 30% benefits + 8% indirect + $1,500 for travel and conferences

Mentoring Support Grant: $1,000

Projection unit @ $3,000
Telephone support for operating system and productivity software: $30,000
Administration
Focus groups participants to be paid $25/hour for a grand total of 80 hours
Maltt travel and stipend: $2,000
ADULT LITERACY TECHNOLOGY THREE-YEAR BUDGET
# of units Unit Cost Total
For all programs
One state of the art computer 145 $2,000 $290,000
High capacity storage device 145 $ 300 $ 43,500
Large screen TV and
145 $1,000 $145,000
Hardware to connect to computer
VCR and video camera 145 $1,000 $145,000
Digital camera 145 $ 800 $116,000
Program software for all sites 145 $3,000 $435,000
.25 technology coordinator
145 $8,750 $1,268,750
+ 25% benefits
For some programs
Local Area Network 60 $5,400 $324,000
Software for students with
disabilities 60 $ 300 $18,000
For 2 programs per region
Videoconferencing hardware 10 $4,000 $40,000
Networked lab 10 $18,000 $180,000
Program software for networked
sites 10 $5,000 $50,000
For 1 program per region
Assistive technology lab 5 $40,000 $200,000
Staff training and support
Full-time technical support person 3 $56,700 $170,100
Projection unit 5 $3,000 $15,000
Mentoring support grants 25 $1,000 $25,000
Telephone support for operating
system
$30,000 $30,000
and productivity software
Administration
.5 time coordinator (incl.
benefits) 1 $31,200 $31,200
Evaluator 1 $50,000 $50,000
Postage for evaluation $1,000 $1,000
Focus groups for evaluation $2,000 $2,000
MALTT travel and stipends $2,000 $10,000
TOTAL $3,589,550
Item # of units Unit Price Total Cost
Budget Rationale
A. Develop an adult literacy education program technology infrastructure across Massachusetts;
Every program will have an adequate annual budget for purchasing, upgrading and securing and maintaining hardware and software. This should be in the range of 3% - 6% for most programs. For larger programs this will need to be higher to accommodate the cost of an

onsite half-time or full-time technology coordinator;
B. Build learner and practitioner skills and confidence;
C. Provide support to staff, learners and programs;
1. State level
From the first year, MALTT needs funds to enable members who are not otherwise compensated to travel to monthly meetings.
2. Regional training and TA will require additional funding for SABES Regional support centers.
From the first year, three new full-time SABES staff members will assist programs in making technology plans and in making decisions about what hardware and software to purchase. These three technical assistance people will visit programs regularly on a schedule and on an "on-call" basis, hold regional trainings, assist the regional technology teams, and provide timely technical assistance by fax on demand, and by voice telephone locally or through an 800 number. Such a person is needed because the current level of technology competence of adult literacy educators is believed to be so low. Also, because so many staff are part-time and cannot attend training, on-site training and technical assistance is especially needed. These three people will stay in regular contact with each other, develop FAQ's online, in hard copy and/or by telephone tree.
3. Each SABES Center will allocate funding to allow at least one practitioner to attend the statewide (MALTT) meetings.
4. Each SABES Center will allocate funding to support a regional technology team facilitator/coordinator.

APPENDICES
1. HARDWARE LIST
Basic/minimal
hardware, software, monitor, printer Internet
applications
Moderate
To be determined
Advanced
other peripherals like digital camera and scanner,
intranet applications
2. KINDS OF SOFTWARE
tools for interactive/discovery learning
productivity tools (word processing, spreadsheets, etc.)
tutorial
skill and practice
group instruction/learning software
learning tools (graphics, on-screen manipulatives, math
tools, etc.)
education simulation
assessment and testing
courseware
3. ELECTRONIC MEDIA
videocassette recorders and cameras
two-way interactive video satellite broadcast,
videoteleconferencing
4. COMMUNICATION MODES
telephone conferencing
e-mail

electronic listservs
usenet groups
two-way interactive picture teleconferencing
5. COMPETENCIES
Staff Technology Competencies will be found at:
http://www.sabes.org/tcomps.htm or
http://www2.wgbh.org/mbcweis/ltc/alri/tcomps.htm)
Learner (to be determined)
6. Background on MALTT
The Massachusetts Adult Literacy and Technology Team (MALTT) was formed in the Spring of 1994 as a volunteer statewide team of adult literacy practitioners who were interested in advancing the use of technology in adult literacy education programs across Massachusetts. It also grew out of the frustration which adult educators had in being excluded from the Massachusetts Education OnLine plan, and from subsequent K-12 technology plan processes. They felt a responsibility to their students and colleagues to advocate for using technology in adult literacy programs, getting a commitment from the Massachusetts Department of Education to provide resources needed to do this, and educating themselves and others in how to use technology well. MALTT meets monthly, often in two places simultaneously -- the Boston area and the Springfield area -- and uses videoconference or telephone technology to connect the two locations. MALTT also uses an electronic list for communication between meetings. The current MALTT team (including both those who regularly attend meetings and those who do not) numbers over 30 people.
The mission of the Massachusetts Adult Literacy Technology Team is to make technology a service to adult learners in their quest for attainment of their educational goals. The Team advances this mission by:
a. learning about, sharing, and disseminating information on technology applicable to adult basic education;
b. seeking ways to make current and emerging technology available and accessible to all teachers and learners regardless of program type, geographic location, student learning ability, student language ability, and the physical or mental challenges of the learners;
c. helping to integrate technology into adult education curricula;
d. encouraging staff development in support of technology integration; and
e. assisting in the development of partnerships and collaborations with similar efforts in Massachusetts and other states.
7. Assumptions Upon Which Plan is Based
a. Electronic Technology includes a wide range of electronic hardware and software but the foci of our three-year technology plan will be computer and video technology. Computer technology includes: hardware, software, peripherals (inputs such as digital cameras and scanners and outputs such as printers), monitors (including the T.V. as a monitor) and Internet/intranet applications. We are interested in VCRs, videocameras and related editing equipment although we see this transforming into digital equivalents such as digital cameras and (read and write) CD- ROMs.

b. The priority groups whose needs would be addressed by this plan are: 1) adult students and 2) practitioners. We recognize that staff developers, researchers, librarians, funders and others in the field also have technology needs, and to the extent that they can meet the needs of students and practitioners we are also interested in their technology needs.
c. The needs of practitioners and learners will be assessed by the MALTT through: a) a written survey to programs to be completed by teachers, administrators and students; b) meetings with practitioners, SABES staff, DOE representatives, and others.
d. Several purposes will drive this plan (see Plan).
e. Access to technology is critical and will be addressed by this plan.
f. Training/support and practice are essential
8. Description Of Process Which Led Up to This Plan
Beginning in the summer of 1996, at meetings and on the MALTT list, MALTT members began to explore a process of technology planning for the state, one which would bring to the adult literacy field the technology resources and staff and program development needed to enable adult learners to use technology well. Through meetings and the MALTT listserv, we explored our assumptions, drafted goals and objectives and began to clarify what we hoped to accomplish. In the fall of 1996 we had the first draft ready and presented it at the statewide adult education conference, Network '96. Incorporating comments from participants who reviewed it there we prepared a second and third draft, and the third draft was presented to the statewide SABES Team known as the Thursday Group, and to the entire staff of the Adult and Community Learning Services Cluster at the Massachusetts Department of Education. The plan was reviewed in each of its revisions by Bob Bickerton, the Administrator of this cluster, and the third draft was presented to DOE's Greg Nadeau who has led the Department in K-12 technology planning.
9. ABE Teacher Competencies for Technology
http://k12s.phast.umass.edu/~halo1/faculty/steve/comps.html

Last Updated 2/19/99 by David J. Rosen
