# Massachusetts Assistive Technology Lending Initiative for Students who are Blind or Visually Impaired

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## Goal

Expand the Massachusetts Vision Resource Library services to include a short-term, hardware and software-lending program to support students with vision impairment participating in standards-based reform.

## Background

The vast majority of students with visual impairments in Massachusetts attend local public schools with the support of state-licensed itinerant teacher/consultants and related service providers. Curriculum, instructional, assessment, and technology resources are made available by the LEA. Supplementary support is provided by the Massachusetts Vision Resources Library (VRL) operated under contract with the Carroll Center for the Blind (CCB) through a combination of state and federal funds. The essential function of the library is to assist LEAs with the provision of accessible braille and large print textbooks, instructional materials, and assessment resources. The library also dispenses a limited variety of tangible ancillary aids. Very limited hardware and software technologies are dispensed by the VRL. These products are limited to materials available from the American Printing House for the Blind (APH) through a federal quota system of funding.

## Challenge

Massachusetts's educational reform legislation in 1993 charted a course for the development of world-class standards in core curriculum areas and the establishment of a statewide, broad scale assessment system to hold schools and school districts accountable for those standards. In 1997 Congress mandated that all students with disabilities shall

benefit from state educational reform efforts through access to the general curriculum and participation in all state and local assessment systems intended to measure progress toward standards attainment (IDEA'97). IDEA'97 also required that each student on an IEP be considered for an assistive technology assessment that would determine the need for services and devices. In 2001, Congress launched its third wave of technology planning by passing the Enhancing Education through Technology Act under the No Child Left Behind (NCLB) legislation. The primary goal of this part of NCLB is to improve student academic achievement through the use of technology in elementary and secondary schools. An additional goal is to assist every student in crossing the "digital divide" by ensuring that every student is technologically literate by the time the student finishes the eighth grade, regardless of the student's race, ethnicity, gender, family income, geographic location, or disability. Two explicitly stated purposes of the Act are: 1) To provide assistance to States and localities for the implementation and support of a comprehensive system that effectively uses technology in elementary and secondary schools to improve student academic achievement; 2) To promote initiatives that provide school teachers, principals, and administrators with the capacity to integrate technology effectively into curricula and instruction that are aligned with challenging State academic content and student academic achievement standards, through such means as high-quality professional development programs. Clearly, key features contained in the act address technology integration, curriculum alignment, and standards-based reform. Students who are blind or visually impaired cannot access, participate in or make progress with the general curriculum without the use of assistive or adaptive technologies. Moreover, they cannot reach the levels of technological literacy demanded by Congress without assistive or adaptive technologies.

In order to participate in the federal programs entitled by the act, state education authorities must develop their own technology plans. Both federal law and state compliance establish a framework for local education authorities to plan for the acquisition, maintenance, and support of hardware and software as well as networking infrastructure. Planning at the local level also includes the integration of technology into teaching and learning processes in the schools. One of the seven critical actions steps of the federal technology plan is for states and local authorities to increase the use of digital

content. The 2004 reauthorization of IDEA strengthens the requirement for all students with disabilities to participate in standards-based reform, but of particular relevance is the establishment of a National Instructional Materials Accessibility Standard (NIMAS) to facilitate the conversion of traditionally inaccessible curriculum resources into accessible digital media and materials. Bringing these federal initiatives and requirements together, the need for a focused and comprehensive strategy for getting adaptive technologies into the classrooms and homes of students with vision impairments is inescapable.

Currently, teachers of students with vision impairments (TVIs) in Massachusetts have very limited skills and resources to assist IEP teams with the required consideration of assistive technology services and solutions. TVIs rely on informal networks and vendor information in making technology recommendations. In many cases, TVIs collaborate with the Carroll Center's Computer Access Program for technology assessments. These may or may not include site visits and loaner options. Technologies must work in the particular school and home in order for students to participate in standards-based reform.

## **Approach**

The Association of Massachusetts Educators of Students with Visual Impairment (AMESVI) is an organization of professionals, whose goal is to improve and enrich the lives of students with visual impairments through advocacy, professional development, and the education of others, including members of the general public, regarding the unique educational needs of students with visual impairments.

The AMESVI Executive Board, with approval and a needs assessment from the membership, conducts this AMESVI Initiative. In order to substantiate the need, AMESVI established a 13-member committee to compare what is currently available to students in Massachusetts with other states. When comparing the availability of such libraries to students in Massachusetts, with other states, AMESVI researched the following questions.

- Do State Assistive Technology Centers funded under the previous incarnation of the Assistive Technology Act have lending libraries?

- What Assistive Technology is available through them?
- How do clients borrow from the library?
- Who do they contact? Where is/are the location(s) of such libraries?
- Are these short-term or long term lending loans?
- How are the libraries financed? What type of financing is available to clients?

Below is a **summary** of what was found.

Do State Assistive technology Centers funded under the previous incarnation of the Assistive Technology Act have lending libraries?

According to our research 74% of the states have some form of AT lending library, and 64% have specifically listed technologies for students who are blind and/or visually impaired.  Massachusetts is among the states that **<u>do not</u>** include a lending library of Assistive Technology coordinated by the implementing agency designated under the Tech-Act.  Among the states with out lending libraries most provide information and a list of vendors.  Some have consultants to help with assistive technology evaluation. Alaska has a "social entrepreneurship model" which displays products for sale.

What Assistive Technology is available through them?

Of the states with lending libraries 90% of them offer some AT specific to visual impairment. This includes software and hardware as well as training. There did not seem to be a standard representation of products that all libraries carried; the depth and breath seemed to depend on clientele served. Those who specifically noted K-12 programs, had items more specific to accessing the curriculum, such as screen readers, magnification software, portable CCTV, adapted toys, note-takers, Braille displays, and embossers. Some programs specifically mentioned serving students with multiple impairments, and included adaptive keyboards, augmentative communication aids, and positioning devices in their equipment lists.

How do clients borrow from the library?

All libraries have Internet websites. Most lending libraries are contacted by phone to initiate the lending process. There were a few states that had online request forms. Products can be shipped in most states. Most have training available for school district personnel and the person requesting the product. Idaho and Colorado have teams of

specialists that the LEA can call to set up assessments if needed.  Several states have comprehensive loan contracts between the state agency and the LEA.  All states involve the TEAM specialist for the student in the process.

Who do they contact? Where is/are the location(s) of such libraries?

Most loan banks have several locations around their state. The main agency can refer them to a local center by phone or listing on the main web page. They accomplish having many locations through partnerships with other agencies.

Are these short-term or long term lending loans?

AMESVI found four states that had long-term lending libraries, though these were not open-ended loans.  Thirty of the thirty seven libraries have short-term loans from 2 to 8 weeks depending on the availability of equipment. These loans can be for initial evaluation of a product or to replace a product while out on repair. Loans can usually be extended if there is not a request for that item. All reserve the right to call back items when necessary.  Two states had equipment available for trial at their centers only.  The other four states did not report loan terms.

How are the libraries financed? What type of financing is available to clients?

Forty one states reported Federal Funding for Assistive Technology Services, and of those that have lending libraries, 95% report using Federal funds.  Most of the lending libraries were administered by a state agency or an agency with funds funneled through the state.  Nine libraries reported state funding for services, and four reported private funding.  Eight libraries administered some sort of swap program for recycled equipment. Virginia requires a $35 membership fee for participating in their programs.  All programs offered some sort of reduced loan program for clients to purchase AT equipment.

**Outreach**

AMESVI seeks to build capacity and establish cooperative relationships with a variety of organizations to create a short-term lending library for assistive technology specific to students with visual impairment. This loan library is an important component

of a comprehensive assistive technology service delivery system to address issues of access to the curriculum.

Funds for a short-term lending AT library can be accessed through the Re-Authorization of The Assistive Technology Act (2004) which redefined the primary purpose of this program from establishing systems to directly helping the individuals with disabilities who need assistive technology devices.

## Proposed Partners

AMESVI has established contact with the Massachusetts Department of Education (MA DOE); The Massachusetts Assistive Technology Partnership (MATP); administered by the Massachusetts Commission for the Deaf and Hard of Hearing;  The Vision Resource Library (VRL); The Carroll Center for the Blind (CCB); Adaptive Technology Consulting (ATC); and various other AT Vendors, to develop a short-term loaner program which will be part of a broader, more comprehensive and collaborative approach to systems change to accomplish standards-based reform through technology access.

Each of these organizations has developed segments of this reform, that, when pieced together, will provide a comprehensive system of AT services for students with visual impairment in Massachusetts.

### The Massachusetts Department of Education

AMESVI seeks the assistance of the Massachusetts Department of Education in a capacity building effort to help LEA meet legal guidelines.

Increasing emphasis on accountability and standardized testing correspondingly increases the need for understanding and use of AT to support valid student academic achievement.  For many students with disabilities AT is the avenue to participate in standardized testing[1].

To help cities and towns follow IDEA mandates on AT and align the need for AT to the Massachusetts Curriculum Frameworks, the Massachusetts Department of

Education published The Assistive Technology Guide for Massachusetts Schools in 2002.

The Assistive Technology Guide for Massachusetts Schools emphasizes effective practices when evaluating the need for assistive technology for students with disabilities. "A careful evaluation of the options will help schools avoid spending money on devices and services that do not meet a student's need."[2] A short-term lending library would allow student involvement as "a critical part of the assistive technology evaluation. If at all possible, the student should have an opportunity to try out a device before a decision is made." [3]

In 1998 members of the National Assistive Technology Research Institute created a group of professionals known as the QUIAT Consortium to help guide in the selection, delivery, support and evaluation of assistive technology tools and services[4]. The AT Guide for Massachusetts follows the QIAT model by establishing effective practices for schools to follow. It notes, "A trial period should include an observation by one or more professionals to assess whether the student is physically and cognitively able to use the technology effectively. This observation should also include an assessment of the time and staff support needed for the student to learn to use the device independently. School personnel may be able to make arrangements with vendors for a loan or short-term rental of a device for evaluation purposes. This trial process will be easier for schools that have already invested in some of the commonly used devices for students to try." [5]

Visual Impairment (VI) and Deaf-blindness (DB) are low incidence disabilities. As such, budget constraints for schools districts have made the investment by a district in "commonly used devices for students to try" especially for students who are VI or DB financially prohibitive. Establishment of a statewide short-term lending library would be more cost effective. This library has the potential to support over 2,000 students with VI

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[1] http://www.ataporg.org/majoraccomp.asp

[2] http://www.doe.mass.edu/edtech/teacher/ATguide.pdf

[3] http://www.doe.mass.edu/edtech/teacher/ATguide.pdf

[4] © QIAT Consortium (August 2000). Quality indicators for assistive technology services: Sharing the work of the QIATConsortium. QIAT web site: http://www.qiat.org. Questions or comments may be directed to the QIAT Consortium through Joy Zabala by email to joy@joyzabala.com

[5] http://www.doe.mass.edu/edtech/teacher/ATguide.pdf

in Massachusetts. While the DOE figures count approximately 473 students with VI and 384 students with DB. [6] This does not count the numbers of students for whom VI is not the primary disability.

Presently, the Vision Resources Library (VRL) which counts students with visual impairment under the Federal Quota System serves 1600 *legally blind* students. Also registered with the Federal Quota System are 407 students from Perkins School for the Blind, 22 students registered with the Carroll Center for the Blind (CCB), 13 students registered under the Massachusetts Association for the Blind (MAB), and 72 students at the Fernald School[7]. The numbers quoted under the Massachusetts Students with Disabilities Annual Report: 2003-2004 report do not reflect the true numbers of students with visual impairment educated in the State due to reporting guidelines. Perkins School for the Blind has their own data base of students identified through their early intervention work with families of children of visual impairment and other sources. They report over 2,000 students with visual impairment in Massachusetts.

Increasing demands on all teachers to have technology skills has created a parallel need for increased assistive technology knowledge for special and regular educators. If all students are to use educational technology effectively, adaptations and assistive technology must be available and used appropriately or students with disabilities will be left behind. There is a critical lack of professionals who are expert in assessing the assistive technology needs of students with disabilities, as required in constructing Individualized Education Programs (IEPs) under the Individuals with Disabilities Education Act (IDEA)[8]. The Massachusetts Department of Education has been responsive to the need for specialized AT training for TVIs through Summer Institutes and a partnership in the North East Regional Center for Vision Education, at the University of Massachusetts, Boston. The need for professional development continues. In addition we are hopeful that The Massachusetts Department of Education will make LEAs aware that assistive technology needs to be part of their regular Technology Budget Plans.

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[6] Massachusetts: Students with Disabilities Annual report: 2003- 2004
http://www.doe.mass.edu/sped/2004/annual.pdf
[7] http://www.aph.org/fedquotpgm/dist03.html

**The Massachusetts Assistive Technology Partnership**

The purpose of the Massachusetts Assistive Technology Partnership (MATP) is to increase access to assistive technology for people of all ages and all disabilities through a variety of consumer responsive systems change activities. The MATP Center provides information, referral, training, technical assistance, advocacy, and works to improve laws and policies providing access to assistive technology. The MATP is a state-wide project, funded through the National Institute of Disability and Rehabilitation Research, US Department of Education. [9] MATP is noted in the Highlights of Tech Act Project Accomplishments[10] for its work in policy and legislative changes for the state of Massachusetts.

MATP is funded under the Technology-Related Assistance to Individuals with Disabilities Act (Tech Act) as the *Implementing Entity. The Lead Agency is The Massachusetts Commission for the Deaf and Hard of Hearing*, which receives funds through the National Institute on Disability and Rehabilitation Research, U.S. Department of Education.

Recent changes in the "*Use of Funds*" section of The Reauthorization of the Assistive Technology Act of 2004 (Tech-Act, HR 4278 ENR) [11]paves the way to establish a long needed short-term assistive technology loan center for students with visual impairment. Under HR4278, State level activities conclude that 60% of funds from the HR4278 are to be used for (text of Tech-Act directly from bill HR 4278 ENR).

The State shall support activities to increase access to, and funding for, assistive technology devices and assistive technology services, including the development of systems to provide assistive technology devices and assistive technology services to individuals with disabilities of all ages, and that pay for such devices and services, such as

''(i) the development of systems for the purchase, lease, other acquisition, or payment for the provision of assistive technology devices and assistive technology services;

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8 http://www.ataporg.org/majoraccomp.asp
9 http://www.matp.org/about/index.htm
10 http://www.ataporg.org/majoraccomp.asp
11 http://thomas.loc.gov/cgi-bin/query/D?c108:6:./temp/~c108n1abMA::

''(ii) the establishment of alternative State or privately funded systems of subsidies for the provision of assistive technology devices or assistive technology services, such as
''(I) a low-interest loan fund;
''(II) an interest buy-down program;
''(III) a revolving loan fund;
''(IV) a loan guarantee or insurance program;
''(V) a program operated by a partnership among private entities for the purchase, lease, or other acquisition of assistive technology devices or assistive technology services;
''(VI) another mechanism approved by the Secretary.

''(B) DEVICE LOAN PROGRAMS.—The State shall directly, or in collaboration with public or private entities, carry out device loan programs that support the short-term loan of assistive technology devices to individuals, employers, public agencies, public accommodations, or others seeking to meet the needs of targeted individuals, including to comply with the Individuals with Disabilities Education Act, the Americans with Disabilities Act of 1990, and section 504 of the Rehabilitation Act of 1973.

**The Vision Resources Library**

The AMESVI Initiative proposes that the present repository for materials for the visually impaired students of Massachusetts (VRL) be supported with funds from this program, under provisions A & B, to expands its offerings to include a variety of commonly used devices and software (see Appendix A) for short term loan to students who qualify for services. In the AT Guide for Massachusetts, under the Other State Programs Heading it notes the VRL, "which lends Braille and large print books to visually impaired students. Responding to requests by vision specialists in schools, the library provides accessible versions of textbooks, workbooks, and works of literature. For books that are not available in its collection, the library borrows, purchases, or contracts with vendors to produce the needed books."[12]

**Adaptive Technology Consulting**: **http://www.adaptivetech.net/**

In order to be an effective AT service delivery system to address access to the curriculum this partnership should also include a:

''(C) DEVICE REUTILIZATION PROGRAMS.—The State shall directly, or in collaboration with public or private entities, carry out assistive technology device reutilization pro grams that provide for the exchange, recycling,

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[12] http://www.doe.mass.edu/edtech/teacher/ATguide.pdf

or other reutilization of assistive technology devices, which may include redistribution through device and equipment loans, rentals, or gifts.

This device reutilization program would allow cities and towns to sell, or swap AT that is no longer being used by students in their district. This practice is cost effective. Although MATP presently supplies a trade/swap Internet page, AMESVI believes that a site specific to Visual impairment is needed. Presently Adaptive Technology Consulting (ATC) of Amesbury, Massachusetts has a system set up for private individuals. This system could be expanded to include public entities. Again, funds for this to be setup and maintained can be accessed through the Tech-Act, HR 4278. ATC could also provide device demonstrations and trainings.

**The Carroll Center for the Blind, http:// www.carroll.org**

Assistive Technology Implementation and Training is an important part of this Initiative. The Tech-Act, HR4278 allows for the establishment of:

''(D) DEVICE DEMONSTRATION PROGRAM.—The State shall directly, or in collaboration with public or private entities, carry out assistive technology device demonstration programs that provide for the ability of targeted individuals to learn about the use and operation of assistive technology devices.

Massachusetts is fortunate to have such a program in place to leverage for this Initiative. The Carroll Center for the Blind in Newton, Massachusetts (CCB) offers an Assistive Technology Educational Service. CCB has variety of programs. In March of 2002, the Computer Training Services department moved into a new 2.5 million-dollar Technology Center. In October of 2003, the Carroll Center launched an online training service "Carroll Tech" training 80 students in its first year. This online training service could be leveraged to provide services for students who are unable to travel to the Carroll Center.

For the past two summers CCB has provided a Summer Institute funded by the Massachusetts Department of Education, "Assistive Technology for Teachers of Students with Visual Impairments". This Institute has trained over 65 TVIs in the most commonly used assistive technology available for students with visual impairments.

As part of a state wide comprehensive AT system for students with visual impairment the Carroll Center could be a resource for:

- Consultation in recommending the most appropriate equipment.

- Training on devices, adapted computers, or access software.

- Individual and group training for students, teachers and family members

- Technical Assistance for installation of hardware and software as well as troubleshooting related problems.

- Professional development for assistive technology specific to students with visual impairment.


## Collaboration

The VRL will manage distribution of AT devices in the same way it presently distributes materials. TVIs submit a request form, with supporting documentation. Initial acquisition of devices could be coordinated by ATC including any software or hardware maintenance agreements for upgrades and repair.

Once a request was received, the VRL could initiate, with the Carroll Center for the Blind, training to include students and teacher on such trial devices, much as it does for loan acquisition of the quota funded device from APH, The Scholar Notetaker. When training is completed, the LEA's technology department could provide installation of equipment for trial or they could contract separately with ATC or CCB for this service if one is not available in their district.

According to regulation in Tech-Act, HR4278 , *The Lead Agency,* which presently is The Massachusetts Commission for the Deaf and Hard of Hearing, would be responsible

`(I) to control and administer the funds made available through the grant awarded to the State under this section; and
`(II) coordinating the activities of the comprehensive statewide program of technology-related assistance among public and private entities, including coordinating efforts related to entering into interagency agreements, and maintaining and evaluating the program; and
`(III) coordinating efforts related to the active, timely, and meaningful participation by individuals with disabilities and their family members, guardians, advocates, or authorized representatives, and other appropriate individuals, with respect to activities carried out through

The *Implementing Entity,* which is presently MATP would:

> `(B) IMPLEMENTING ENTITY- The Governor may designate an agency, office, or other entity to carry out State activities under this section (referred to in this section as the `implementing entity'), if such implementing entity is different from the lead agency. The implementing agency shall carry out responsibilities under this Act through a subcontract or another administrative agreement with the lead agency.

They shall also establish a advisory council whose composition is complaint with the regulations in HR 4278

> > `(2) ADVISORY COUNCIL-
> > > `(A) IN GENERAL- There shall be established an advisory council to provide consumer-responsive, consumer-driven advice to the State for, planning of, implementation of, and evaluation of the activities carried out through the grant, including setting the measurable goals described in subsection (d)(3).

## Anticipated outcomes

Loan libraries have historically been developed to provide an opportunity for potential users of assistive technology to explore the usefulness of various enabling technologies. This proposed loan library will serve a variety of purposes:

- It will be used as a short-term opportunity (60 to 90 days) for students and teachers to use and test specific devices and equipment to determine their potential benefit.
- It will be used to assist students and teachers in the selection and choice process to which every potential user is entitled. Exploring appropriate alternatives is an important process for both students and the cities and town educational authorities that serve them.
- It will be used to provide a "trial period" for equipment/device usage to avoid the prevalent problem of equipment abandonment.

In addition to the expected outcomes listed above a comprehensive system of reform for connecting entities from all areas of the State would help address several areas of the Quality Indicators for Assistive Technology Services (QIAT) guidelines[13] for LEAs.

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[13] http://sweb.uky.edu/~jszaba0/QIAT%20AUG%202003.PDF

**Quality Indicators for Administrative Support**

- The educational agency employs a range of personnel with competencies needed to provide quality assistive technology services within their areas of primary responsibility.
- The education agency provides continuous learning opportunities about assistive technology devices, strategies and resources for staff, family and students.
- The educational agency uses systematic procedure to evaluate the components of assistive technology services to ensure accountability for student progress.

**Quality Indicators for Consideration of Assistive Technology Needs**

- The IEP team has the knowledge and skills to make informed assistive technology decisions.
- The IEP team uses a collaborative decision making process based on data about the student environment and tasks to determine assistive technology needs.
- A continuum of assistive technology devices and services is explored.
- Decisions regarding the need for assistive technology devices and services and supporting data are documented.

**Quality Indicators for Assessment of Assistive Technology Needs**

- Assistive technology assessments are conducted in the student's customary environments.
- Assistive technology assessments, including needed trials, are completed within reasonable time lines.
- Recommendations from assistive technology assessments are based on data about the student, environments and tasks.
- The assessment provides the IEP team with documented recommendations about assistive technology devices and services.

**Quality Indicators for Documentation in the IEP**

- Assistive technology is included in the IEP in a manner that provides a clear and complete description of the devices and services to be provided and used.
- Assistive technology is used as a tool to support achievement of IEP goals and objectives as well as participation and progress in the general curriculum.

**Quality Indicators for Assistive Technology Implementation**

- Assistive technology implementation proceeds according to a collaboratively developed plan.
- Training for student, family and staff is an integral part of implementation.
- Assistive technology implementation is initially based on assessment data and is adjusted based on performance data.
- Assistive technology implementation includes management and maintenance of equipment and materials

**Quality Indicators for Evaluation of Effectiveness**

- Effectiveness is evaluated across environments including during naturally occurring opportunities as well as structured activities.

**Quality Indicators for Professional Development and Training in Assistive Technology**

- Comprehensive assistive technology professional development and training support the understanding that assistive technology devices and services enable students to accomplish IEP goals and objectives and make progress in the general curriculum.
- The education agency has (access to) an AT professional development and training plan that identifies the audiences, the purposes, the activities, the expected results, evaluation measures and funding for assistive technology professional development and training.
- Assistive technology professional development and training include ongoing learning opportunities that utilize local, regional, and/or national resources.

**Conclusion**

       Massachusetts has done an excellent job in meeting the mandates set forth in the Assistive Technology Act of 1988 and renewed in 1994 and 1998. With the re-authorization of the Tech-Act (HR4278) in 2004, changes were made to expand or redefine the primary purpose of this program from establishing systems to directly helping the individuals with disabilities who need assistive technology devices.
In the 2003 Executive Summary of The Association of Assistive Technology Act Programs: *Highlights of Tech Act Project Accomplishments*, one of the challenges noted is: Ensuring Timely Acquisition to Assistive Technology.[14]
Massachusetts has the resources outlined in this document and is in an excellent position to initiate a system for a focused and comprehensive strategy for getting adaptive technologies into the classrooms and homes of students with vision impairments. Massachusetts has the infrastructure in place, to meet the evolving mandates prescribed by current federal policy initiatives. The next step is to convene a meeting of the organizations outlined in this document to establish their roles and cost associated with the proposed initiative. It is believed that with a very small investment Massachusetts can leverage funds and partnerships to address the Massachusetts Assistive Technology Lending Initiative for Students who are Blind or Visually Impaired set forth by AMESVI. This Initiative will play a role to ensure equal access and equal opportunity for all; so no student with visual impairment will be left behind in Massachusetts.

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[14] http://www.ataporg.org/highlights.asp#Challenge%202

# Acknowledgements

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# APPENDIX A- Suggested Commonly Used Devices and Software

Totally blind students utilize a wide variety of assistive technology to complete academic curriculum.  Many of these materials are quite expensive and are a major investment for school districts. Although some software does have trial versions, they often time-out before a learning curve is met and data can be collected on their effectiveness. Most software copies sell longer time trial versions (60-90 days) for a nominal fee.

The following are materials that vision teachers have listed as items that they often use or would find beneficial in a loan program. It is in no way an exhaustive list, as many more items are available.

- Jaws Screen Reader                                                         $895
  www.freedomscientific.com
- SARA – Scan and Reading Appliance                              $2495
  www.freedomscientific.com
- Kurzweil 1000 and Scanner                                            $1200
  www.pulsedata.com
- Open Book Software                                                        $995
  www.freedomscientific.com
- Duxbury Braille Translator
   with Scientific Notebook (math translator)                     $725
  www.pulsedata.com
- MountbattenBrailler                                                        $2000
  www.pulsedata,com
- Tiger Tactile Embosser                                                    $4995
  www.viewplus.com
- Accessible Graphing Calculator software                        $149
  www.viewplus.com
- Braille Note                                                                     $4395
  www.pulsedata.com
- Franklin Language Master                                               $495
  www.freedomscientific.com
- Pac Mate BNS                                                                $1995
  www.freedomscientific.com
- Tack-Tiles                                                                       $495
  www.tack-tiles.com

Low-vision students may use some of the materials that a totally blind student would use. However, low vision student often need materials that are similar to their regularly-sighted classmates, but with modifications for their visual impairment.

- Orion talking scientific calculator                                   $199
  www.aph.org
- Zoom Text Magnifier/Screen Reader                             $595
  www.aisquared.com
- Write:Outloud Talking Word Processor                          $99
  www.donjohnston.com

- Mimio  Interactive Whiteboard                                    $500
  www.mimio.com
- Laser PC 6                                                       $290
  www.perfectsolutions.com
- Closed Circuit Television (CCTV)                                 $2500
  www.telesensory.com
- Portable CCTV                                                    $2295
  www.telesensory.com
- Big Keys Keyboard                                                $159
  www.bigkeys.com
- First Keys Software                                              $79
  www.dondjohnston.com
- Clicker 5 Software                                               $150
  www.cricksoft.com
- Biggy Cursor                                                     $99
  www.inclusivetlc.com

Some visually impaired students with additional disabilities benefit from materials which give them an entirely different way to access a computer than a traditional keyboard. Students with Cortical Visual Impairment might benefit from enlarged switches or software that has enhanced contrast. (Switch It series).

- Intellikeys keyboard   + Overlay Maker                           $395/$139.95
  www.intellitools.com
- Big Red/Big Mac switches                                         $43/$95
  www.donjohnston.com
- 19" Touch Screen monitor                                        $700
  www.magictouch.com
- Electronic/Musical toys (some examples listed below)            $50-$75
  - Musical stacking toy
  - UFO starship
  - Musical light box
  www.enablingdevices.com
- Switch It Software                                               $359
  www.inclusivetlc.com
- "Little Room" – have one built/supplied for loan                $500

Lastly, there are some materials that cannot be categorized easily, but have been listed by teachers as being items that would be helpful

- Odyssey Talking Tactile Globe                                    $140
  www.independentliving.com
- Talking Color Identifier                                        $195
  www.independentliving.com
- Talking Money Identifier                                        $295
  www.independentliving.com