# Illinois State Board of Education

## Special Education Department

# Assistive Technology for Students Who Are Visually Impaired:

# Frequently Asked Questions and Advisory

This document is intended to provide non-regulatory guidance on the subject matter listed above.

For specific questions, please contact the Illinois State Board of Education.

**Dr. Carmen I. Ayala, State Superintendent**

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# Assistive Technology for Students Who Are Visually Impaired

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## Frequently Asked Questions

**Question 1:** **What is the standard for determination of eligibility for special education services under federal law for students with visual impairments?**

A student who has low vision or is blind is eligible for special education services under the visually impaired eligibility defined by the Individuals with Disabilities Education Act (IDEA). The visual impairment must adversely affect the student's educational performance.

"Visual impairment including blindness means an impairment in vision that, even with correction, adversely affects a child's educational performance. The term includes both partial sight and blindness" (34 CFR 300.8).

The student must be evaluated for special education services in accordance with 34 CFR 300.304 through 34 CFR 300.311.

**Question 2:** **How can a student with visual impairments access the general education curriculum?**

Students with visual impairments require supports in the educational environment to access and make progress in the general education curriculum. For students with visual impairments, much of this support is provided via assistive technology (AT) which can be applied for use in and outside the educational environment.

**Question 3:** **What is assistive technology?**

IDEA defines an AT device as "any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability. The term does not include a medical device that is surgically implanted, or the replacement of such device" (34 CFR 300.5).

**Question 4:** **How can assistive technology benefit students with visual impairments?**

Students with visual impairments may require specific supports to access instructional and environmental information. The use of various AT devices can allow students to access information through alternate sensory channels such as touch and hearing. Students with visual impairments might require high tech AT such as braille technology or low tech AT such as a white cane. The use of AT depends on the student's present levels of functioning and individual needs.

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**Question 5:** **What types of assistive technology are available for use by students with visual impairments?**

AT options are on a spectrum of "high" and "low" tech supports.

Students with visual impairments my need extra support to access written information in literacy and environmental contexts. Individuals with visual impairment may use braille, a tactile writing system comprised of raised dots to represent the letters of the alphabet. There are many AT devices which support the use of braille.

There are also several devices which act as supports for environmental information like maps, color identifiers, various tools, clocks, and orientation needs.

This list serves as a quick reference guide for AT typically used by a low vision or blind student; however, it is not an exhaustive list as students with visual impairments have individualized needs for which there are many assorted technologies.

**Table 1**

| High-tech Devices | Function |
|---|---|
| Braille Printer | A device which communicates with a printer to emboss braille onto paper. Schools can use a braille printer to adapt written materials. A DeafBlind student may also access a braille printer used by a real-time captioner to access auditory information in the environment. |
| Talking Calculator | A calculator capable of giving auditory output. Talking calculators can be basic, scientific, graphing, etc. |
| Text-to-speech | A program used to convert text information to speech. Some programs can also convert audio information back to text through dictation. |

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| Closed Circuit Television (CCTV) | CCTV includes a camera and screen placed close to the student to magnify the teacher, instructional materials, or another aspect of the classroom environment. |
| Face-to-face Communication | DeafBlind persons may use face-to-face technology to communicate with another person by sending and receiving messages in braille. The sighted individual sends and receives the messages in written language. |
| Electronic Magnifiers | Magnifiers can be of various sizes from pocket to full size screens. Magnifiers can also be illuminated. |
| Refreshable Braille Display | Allows the user to access information on a computer screen. As the user moves the cursor around the screen, the braille display shows the information, including spacing, format, and spelling. |
| Screen Reader | The screen reader narrates what is displayed on computer screens as the user moves the cursor. It can be programmed to read individual words, find a specific string of text, indicate the location of the cursor, or show other items. |
| Screen Magnification System | Computer software that allows the cursor to act as a magnifier on the computer screen |
| Color Identifier | A device used to detect and identify colors |
| Artificial Vision Device | Wearable technology involving glasses equipped with a camera which enhances or magnifies visual information, reads words, and identifies colors and other items |
| Talking or Braille Clock/ Watch | A time device that either displays the time in braille or provides audio output |


| Low-tech Devices | Function |
|---|---|
| Bold-line Writing Paper | Paper with bold lines for easier writing guidance |
| Raised Line Writing Paper | Paper with embossed lines to guide writing |
| Bold Line Pens and Pencils | These writing utensils can create bold lines for higher visibility. |
| Writing Guide | This device is a metal or plastic guide laid over paper to designate lines for specific formats like letter writing or labeling envelopes. |
| Tactile Maps | Tactile maps use differing textures or braille to represent geographical locations. Educators can create a tactile map of the classroom or school. |
| Large Print | A large print format can be utilized for various documents, visuals, keyboards, in books, etc. to help a student access written information more easily. |
| Trifold Board | A trifold board can be placed on the student's desk to block out distractions in the environment. It can have a solid white side and a black side with a Velcro-compatible fabric. |

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| Tactile Signs and Warning Systems | Tactile signs may include braille or other tactile cues to indicate notices, warnings, and other general information. Tactile warning surfaces may use different textures to indicate changes in terrain or warn an individual about curbs, stairs, train platforms, or other terrain challenges. |
| White Canes | Folding canes can be used by individuals to help navigate their environment. A red and white cane indicates that an individual is DeafBlind. |
| Braille Ruler or Yardstick | A ruler or yardstick can be made with braille characters and embossed with tactile symbols. |
| Writing Slate | A metal or plastic slate with cells and a stylus to manually write braille can be different sizes and have varying numbers of lines. |
| Tactile Adhesive Dots and Numbers | Dots can be used to create tactile cues. |
| Magnifying Glass | Used to magnify materials |
| Reflective Tape | Used to create contrast for low vision students to warn of hazards |
| Food Bumper | An individual may use a food bumper to prevent food from sliding off the plate. |

**Question 6:** **How do I determine what kinds of assistive technology my student with a visual impairment needs?**

A student with a visual impairment is typically given two important assessments to inform the Individualized Education Program (IEP) team of the student's specific needs.

- The Functional Vision Assessment (FVA) determines how a student uses the vision he or she may have.
- A Learning Media Assessment (LMA) determines how a student best accesses instructional information.

Both assessments help the IEP team determine what AT will best support the student in the instructional environment. Not every student needs the same AT supports which is why individual assessments are important factors to determine AT needs.

**Question 7:** **Will my student need the same assistive technology throughout his or her educational career?**

A student with a visual impairment might not need the same types of AT as he or she progresses through education. Some students will need consistent supports,

such as braille but depending on progress made or changes in vision, a student's AT needs may change over time. It is important for IEP teams to frequently evaluate the effectiveness and benefit of AT used by the student.

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**Question 8:** **How does my student learn to use the assistive technology provided to him or her?**

As students with disabilities are entitled to specially designed instruction via the IEP, it is the responsibility of the IEP team members to identify appropriate AT and instruct the student on how to use it. Staff members who are specialists in the field such as teachers of the visually impaired, AT specialists, and orientation and mobility specialists are commonly responsible for the direct instruction required to help students and staff learn to utilize AT.

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**Question 9:** **Whose responsibility is it to implement assistive technology in the classroom?**

It is the responsibility of the teacher to provide and consistently use the AT the student requires. The teacher should adequately prepare materials, ensure access to technology, and ensure the technology is in working order. Eventually, students may learn to manage AT needs on their own given supports in self-advocacy and determination. Ultimately, it is the responsibility of educational team members to ensure access to AT in the instructional environment.

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**Question 10:** **Where is assistive technology recorded in the IEP?**

The need for AT is typically recorded in three sections of the IEP:

- *EDUCATIONAL ACCOMMODATIONS AND SUPPORTS*
- *ASSESSMENT*
- *EDUCATIONAL SERVICES AND PLACEMENT*
- *SUPPORTS FOR SCHOOL PERSONNEL* - AT needs and identification of the person(s) responsible for instructing educators on the use of the AT.
- AT can also be addressed in goal statements if specific AT is needed to make progress in the goal area.

See an example IEP form on the ISBE website: Individualized Education Programs.

**Question 11:** **Is a guide dog or service animal considered assistive technology?**

Some individuals with low vision or blindness will utilize a guide dog or service animal which helps the individual navigate the environment and provides various alerts. The guide dog is not typically considered AT but is a supplementary aid or accommodation that is permitted for use in state and federal regulation. The Illinois School Code (105 ILCS 5/14-6.02) states: "Service animals such as guide dogs, signal dogs or any other animal individually trained to perform tasks for the benefit of a student with a disability shall be permitted to accompany that student at all school functions, whether in or outside the classroom." The Americans With Disabilities Act (ADA) additionally advises that schools must accept the use of a service animal for any qualified student. Use of a service animal is also described in the Illinois White Cane Law. Understand, however, that it is not the responsibility of the IEP team to decide if a student needs a service animal.

More information about service animals can be found in the ISBE advisory addressing service animals.

**Question 12:** **How can I learn more about assistive technology and how to use the technological supports my student needs?**

Confer with specialists such as teachers of the visually impaired and orientation and mobility specialists.

You can also research AT via the Illinois Assistive Technology Program (IATP) which offers demonstrations, professional development, and access to AT.
https://www.iltech.org/

Additionally, you can utilize resources through organizations such as the American Foundation for the Blind.
https://www.afb.org/blindness-and-low-vision/using-technology

Another source is the Chicago Lighthouse.
https://chicagolighthouse.org/

For more information on students with visual impairments, please see the ISBE *Best Practices Guide for the Education of Students with Visual Impairments* available on the ISBE webpage.

Additionally, ISBE partners with the National Instructional Materials Access Center (NIMAC) which "provides a central depository for those materials from which states then designate authorized users (AUs) as contacts for Local Education Agencies (LEAs) to be able to access materials for those students who may be blind or visually impaired or have a print disability." Please see the ISBE NIMAC website for more information as well as ISBE's *NIMAS/NIMAC Guidance: Obtaining Accessible Instructional Materials.*

## Resources

American Foundation for the Blind

Chicago Lighthouse Tools for Living

Illinois Assistive Technology Program

IDEA 34 CFR 300

ISBE: Special Education Programs- Assistive Technology

NIMAS/NIMAC Guidance: Obtaining Accessible Instructional Materials (ISBE)

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