Acknowledgements

Due to the low incidence of students with visual impairments, the concept of this document was initially created in 1995, however, it was not finalized. The intent was to develop a best practice standard that could be used throughout the State Of Illinois. It was anticipated to be a “living document” (which would be continually updated), available throughout Illinois. The original task force committee members were Laurel Watson Burman, Gloria Calovini, Don Harkins, Naomi Hershman, Dr. Toni Heinze, Sharon McBride, Minda McMinn, Jean Osterby, Dr. Evelyn Rex, Dr. Juan Seitz, Dr. Richard Ulmsted, Dawn Turco, Leslee Williams, and Yvonne Williams.

In 2005, the need for this guidelines manual was revisited and a committee was formed to explore updating the initial document. Minimal changes were made since the possibilities of publication were uncertain.

With respect to the initial concept, in 2015 the Illinois Vision Leadership Council developed a Guidelines Committee. This committee endeavored to create this Comprehensive Best Practices Guide for the Education of Students with Visual Impairments. This document encompasses current research, trends, and practices on a national and international level.

A special thank you to Amy Richards, ISBE Deaf/Hard of Hearing and Vision Consultant for her encouragement and guidance. Without her support, our vision to make this document available throughout Illinois by publication on the ISBE website, would not have been possible.

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# Illinois Best Practices Guide For the Education of Students with Visual Impairments

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Chapter 1
VISUAL IMPAIRMENT DEFINITION

A student with a visual impairment is among those whose educational potential can be developed through specialized instruction and services, which may include materials and equipment.

Definitions of Visual Impairment
A student with a visual impairment is one who has a disorder in the structure and function of the visual system (as described below under medical criteria.) The visual impairment, even with best correction and treatment, interferes with learning. For educational purposes, the following definitions are used:

- **Legal Blindness** A student has a central visual acuity of 20/200 or less in the better eye with the best correction or a peripheral field of vision no greater than 20 degrees. Exceptions include a student who is totally blind, whose eyes have been enucleated or who have a proven non-changing eye conditions.
- **Functional Blindness** A student whose visual function meets the definition of blindness by an eyecare specialist (ophthalmologist or optometrist) or other medical doctor such as a neurologist. This student relies primarily on tactual and/or auditory senses for learning. A student with cortical visual impairments may fall under this category.
- **Low Vision/Partially Sighted** A student has a central visual acuity that falls between 20/70 and 20/200 in the better eye with best correction. Through the use of optical aids, environmental modifications and/or specialized services, the student has the potential to use vision as an effective channel for learning.

Eligibility
Children ages birth to 3 identified as having a visual impairment are eligible for services from a developmental therapist for vision. Eligibility for these services are outlined and governed through the Illinois Department of Human Services, Bureau of Early Intervention. More information is available at [www.dhs.state.il.us/ei](http://www.dhs.state.il.us/ei).

A student between the ages of 3 through 21 who meets the following criteria is eligible for services in the school setting if:

- identified as having a visual impairment by a medical professional
- there is an adverse affect on their education
- there is an identified educational need

The expertise of a licensed teacher of the visually impaired is required in determining adverse affect and educational need.

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Eligibility for services for a student who has a visual impairment is determined by use of one or more of the following medical and educational criteria:

**Medical Criteria** An eye doctor’s report (ocular) indicating at least one of the following:
- reduced central visual acuity of 20/70 or less in the better eye after best possible correction
- restricted field of vision to 50 degrees or less in the better eye, which affects the student’s ability to function educationally
- degenerative condition that is likely to result in a significant loss of vision in the future
- neurological visual impairment
- certain eye conditions exist (i.e. postoperative retinal detachment) that may require temporary placement

**Educational Criteria** (must include at least one of these criteria). A student whose documented vision loss:
- adversely impacts the student’s ability to access the core curriculum through the visual channel
- impacts the acquisition of skills included in the expanded core curriculum (See Chapter 4)
- may require specialized instructional techniques, special textbooks, materials and equipment, i.e. braille instruction, compensatory skills, and specialized assistive technology/instruction

**Impact of the Visual Impairment**
Vision is the primary system of sensory input and the basis for the majority of learning. It is estimated that 85 to 90 percent of learning occurs as the result of visual activities (Bridge2Health, 2012). Much is learned incidentally through casual observation, exploration of the environment, assimilation and ever-expanding experiences. Often, the same types, quality and quantity of activities are not readily available to the student with a visual impairment. Furthermore, the information gathered by the student with reduced vision may be inaccurate or fragmented. The growth and development of a student with a visual impairment parallels the growth and development of students who are not visually impaired. All students progress through identifiable stages, yet each differs in his or her own rate of progress.

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A student who has a visual impairment has unique needs, which in turn have a major impact on their educational requirements. These needs are reflected primarily in the following areas of learning:

- concept development
- multiple senses
- individualized instruction
- specialized skills
- specialized equipment
- unique curricular strategies or adaptations

With appropriate educational service, a student who has a visual impairment can attain his/her full potential.
Identification of a student with a visual impairment within the educational setting is determined through the domain process/case study. The first step in the process of determining the appropriateness of a referral for vision services is the receipt of a recent ocular report. Upon documentation of the visual impairment, an initial domain meeting will commence. The domain process/case study includes the following areas: Academic Achievement, Functional Performance, Cognitive Functioning, Communication Status, Health, Hearing and Vision, Motor Abilities, and Social/Emotional Status. Participants in the domain meeting for students with a suspected visual impairment shall include a licensed teacher of the visually impaired (TVI) along with all other necessary team members. A TVI will indicate if a functional vision assessment (FVA) is needed under the Hearing/Vision section of the Identification of Needed Assessment form (domain sheet). If a FVA and/or a learning media assessment (LMA) is completed, the team will discuss the results at the eligibility/IEP meeting. For a student to be determined eligible for vision services, the team will need to consider three components:

● the student has a documented visual impairment
● the impairment has an adverse effect on educational performance, and
● there are educational needs which require specialized instruction by a TVI

If the student is deemed eligible, the identified needs/deficits will help to guide the development of the Individual Education Plan (IEP).

As previously referenced, there are two major components when identifying a student with a visual impairment. Those components are the clinical evaluation by an optometrist or ophthalmologist and the FVA/LMA. The FVA determines what the student can see, how the student uses his/her vision, and under what conditions he/she can see. The LMA identifies the best literacy format for a student,- i.e., print, braille, audio, objects, or some combination. Information derived from the student’s FVA and LMA identifies the impact of the vision loss on his/her educational program. The FVA includes:

● the clinical examination conducted by an ophthalmologist or an optometrist
● an assessment of the student’s functional vision conducted by a TVI
● a LMA (may also be conducted as a separate assessment)
While visual impairment is commonly defined clinically in terms of remaining visual acuity and/or reduced visual fields, the use of clinical data alone provides the educator licensed in the area of visual impairment with the practical information regarding diagnosis.

The LMA offers a framework for selecting appropriate literacy media for a student who is visually impaired. A FVA should be conducted first, in order to determine how efficiently the student is using his or her vision. These two assessments should be used together to help guide the team’s decision about the best instructional medium for a given student, such as braille, print, dual media (both print and braille), auditory, tactile or some combination (Paths to Literacy for Students Who are Blind or Visually Impaired, n.d.).

Best practice dictates that there should be an integration of clinical data with the information gathered through the FVA and LMA in order to identify a student who meets eligibility for a visual impairment and would benefit from specialized services. A doctor’s recommendation or script alone does not qualify the student for services for the visually impaired.

**Common Components of a Clinical Visual Assessment**

Clinical Visual Assessments are performed by an eye specialist may include the following:

- etiology/history
- diagnosis/prognosis
- visual acuity (unaided and aided for distance and near point)
- visual field
- treatment regimen
- color perception evaluation
- recommendations for lighting
- recommendations for physical/recreational activities
- recommendations for low vision devices
- spectacle prescription and recommendations for use

**Functional Vision Assessment (FVA)**

The purpose of the FVA is to provide information regarding a student’s visual functioning in everyday tasks in natural settings, such as school, home, and community. The result of the FVA is used to determine the educational needs of the student in respect to instruction, programming/services, placement, and materials.

The data for a FVA is gathered using a combination of informal and formal testing, observation, reporting of parents/guardians and teachers, and student interviews when

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appropriate. The Components of the FVA completed by a licensed educator in the area of visual impairment (including a student with a cortical visual impairment) should include:

- an observation of the student in different settings (environmental analysis including lighting and glare)
- interviews and work samples
- a summary of the ocular history
- near point acuity (both with and without glasses)
- distance acuity (both with and without glasses)
- color perception
- visual fixation
- shift of gaze including copying from near point and distance
- visual tracking (ocular pursuits) and scanning skills
- depth perception
- focusing with occlusion
- contrast sensitivity
- visual perceptual skills
- visual motor skills
- recommendations for non-prescriptive adaptive devices and equipment for use in given environmental settings.
- recommendations for special materials and assistive technology
- recommendations for possible addition assessments (Orientation & Mobility evaluation*)
- recommendations for the most appropriate learning media.**

It should be noted when completing a FVA for a student with a cortical visual impairment (CVI) as well as a student with multiple impairments, different components may be utilized, i.e. the Christine Roman-Lantzy CVI range, observations, interviews, behavioral checklists, etc.

*An Orientation & Mobility evaluation should be completed by a Certified Orientation and Mobility Specialist (COMS) if the IEP team deems the assessment is needed to determine independent safety and travel skills. The need for this evaluation should be discussed with the Domain Team.

**An LMA should be completed to determine the most appropriate learning media for a student with a visual impairment

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Learning Media Assessment (LMA)
The Components of the LMA completed by an educator licensed in the area of visual impairment should include
● documentation of the student’s use of sensory channels
● consideration of the student’s use of general learning media
● selection of the appropriate literacy media or medium

The LMA is "an objective process of systematically selecting learning and literacy media" (Koenig & Holbrook, 2000). The LMA includes an assessment of a student's learning style, or the way in which he/she uses vision, touch, hearing, and other senses, either singularly or in combination, to gain access to information (Paths to Literacy for Students Who are Blind or Visually Impaired, n.d.)

The data for a LMA includes an evaluation of general learning media that includes both instructional materials and instructional methods. The LMA helps determine and support the recommendation for a student to receive either a conventional or functional literacy media program. Conventional literacy media include the range of tools to teach academic literacy skills such as reading and responding to literature and writing papers in both print and braille. Whereas a functional literacy program focuses on survival reading and writing skills needed for increased independence in daily life.

A FVA and LMA are recommended when the team is determining eligibility of a visual impairment. For a student receiving special education services, a domain meeting/case study is scheduled at least every three years to determine continued eligibility and educational services and needs. An orientation & mobility evaluation (typically referred by the TVI or vision coordinator where appropriate) may take place as part of this process.

Description of the Case Study Evaluation/Re-Evaluation Components
The consent for an initial evaluation or a triennial re-evaluation is given to parents/guardians when obtaining consent for an initial evaluation or when completing the three-year evaluation.

Depending on the nature of the student’s difficulties, additional component(s) may be recommended for the student in the domain areas. Consent must be received for all areas being tested for establishing or maintaining eligibility. Specialized evaluations such as a FVA/LMA, orientation & mobility evaluation, occupational therapy evaluation, and physical therapy evaluation would be included in the appropriate area of the domain paperwork. The local school district can provide additional information in regard to the evaluation process.

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If a student does not qualify for an eligibility under IDEA, the team should discuss if a 504 plan needs to be considered. A student with a 504 plan may not qualify for some resources and services available to a student with an IEP.

**Ongoing Assessment of an Identified Student**

The assessment of the student with a visual impairment should be an ongoing dynamic process ensuring that the student’s progress, changing needs, environmental variables, etc. will lead to appropriate modifications in his/her educational program. Consultation with the TVI, classroom teacher, ELL Teacher (if the student is an English Language Learner) and observation of the student prior to assessment is important to determine appropriate tools and approaches, and relevant tasks and environments which must be included. The activities and materials used in the assessment process must reflect typical daily tasks and involve the student in solving problems and utilizing skills. The assessment approach will be individualized, choosing appropriate procedures, activities and materials from a variety of relevant formal and informal techniques and instruments in the student’s dominant language, as well as from the student’s daily repertoire of tasks and environments.

All other assessments (i.e. academic achievement, functional/developmental level, language dominance, adaptive behavior, sociological background, intellectual functioning, state and/or district assessments, etc.) should be conducted in consultation with a licensed teacher of the visually impaired to ensure that reasonable and appropriate media and aides (braille, braille note taker, screen magnification, audio, downloads, screen reader, magnification/low vision aids, concrete models/tangible apparatus, tactile symbols, etc.) are utilized.

Assessment of functional vision skills and learning media must be addressed beyond the initial consideration of eligibility and need for service. This type of assessment should be ongoing to investigate the student’s visual abilities and learning medium as they relate to the changing demands of his/her educational program. Assessment of functional vision and learning medium should always be completed by a licensed TVI. The content of the evaluation should include but not be limited to such areas as fixation, tracking, scanning, visual acuity, muscle balance, contrast sensitivity, convergence/focusing, visual discrimination, visual-motor, depth perception, print size, braille readiness, braille appropriateness, tactile medium (symbols, functional braille), and assistive technology. Each evaluation should be tailored to the age and functioning level of the individual student, using age-appropriate and classroom-related materials in addition to informal and formal testing materials.

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The unique needs of a student with visual impairments dictate that ongoing evaluation may include specialized skill and knowledge areas (also known as Expanded Core Curriculum, see Chapter 4). The evaluations specific to the visual impairment must be conducted by qualified professionals in that particular area. The specific specialized skills to be assessed are as follows:

- **Activities of Daily Living (ADL)** - Student should demonstrate competence in functional tasks of daily living.
- **Orientation and Mobility** - Student should demonstrate knowledge and use of orientation and mobility concepts and skills in natural environments.
- **Assistive Technology** - Student should demonstrate skills using appropriate equipment, such as braillers, braille note taker, computers, slate/stylus, augmentative communication devices, magnification devices, screen magnification software, downloading books, and screen readers to name a few.
- **Literary Skills** - Student should demonstrate efficiency with the skills of braille reading and handwriting, or other auditory, tactual medium (tactile symbols and schedules).
- **Self-Advocacy** - Student should demonstrate ability to independently make accommodations and environmental changes to increase their visual efficiency and the express his/her own visual needs to others. A student at the high school level should demonstrate knowledge of current laws pertinent to the rights of individuals with disabilities.
- **Social Skills** - Student should demonstrate a healthy self-concept, participation in recreational activities, the ability to initiate and carry on conversations and the use of appropriate behaviors for a variety of social situations; a student with a visual impairment may not have the same opportunities and abilities to acquire social skills through incidental observation as do other students and therefore, social situations often need to be set up to enable appropriate social skills to be taught and practiced.
- **Sensory Skills** - Student should demonstrate effective skills in the following areas as appropriate.
- **Low Vision Skills** - Efficient tracking and scanning, systematic search patterns, eye-hand coordination and perceptual skills, as well as the appropriate use of adaptive optical and non-optical aids such as magnifiers, telescopic lenses, magnification devices, screen magnification, and screen readers.
- **Auditory/Listening Skills** - Effective listening skills with regard to environmental sounds and cues, and language/recorded information.
- **Tactual Skills** - effective skills of systematic searching, the identification and interpretation of tactual information, and functional information.

A student with a visual impairment uses a variety of learning media to read or otherwise access information (e.g. braille, screen readers, tactual models, auditory-digital download, regular size or enlarged pictures and print, etc.) and to communicate information (e.g. braille, handwriting or printing, keyboarding computer adaptations, etc.). The student’s efficiency in using such a variety of learning media must be evaluated on an ongoing basis to determine a) the most appropriate and efficient media for a particular student, b) the appropriate choices of learning media for particular tasks, and c) whether changes in student’s ocular condition or school situation necessitate a change in appropriate learning media. Evaluation of learning media is mandated by federal and Illinois state law.

For all students with disabilities, evaluation is an integral part of transition to postsecondary placements. Areas of particular importance to a student with a visual impairment include evaluation of the following:

- Knowledge of support organizations
- Ability to acquire materials and services
- Skills for independent living
- Knowledge needed to set up adult living situations
- Knowledge of basic adult living situations
- Knowledge of vocational/career options

Transition issues should be evaluated in a collaborative manner with all appropriate personnel, services, and agencies.

Every three years, consideration of continued eligibility must be addressed through the domain/evaluation process. The reevaluation should include review and updating of all case study components (e.g. social history, adaptive behavior, academic/development, FVA/LMA.)

Illinois utilizes an RTI process. RTI can be used to support students with learning and behavior deficits prior to special educational identification. It should be noted that RTI is not an appropriate process to use when a visual impairment is suspected as it delays the services that may be needed to assist the student immediately and allow the student access to FAPE. Given the appropriate vision accommodations, the intensity of instruction that is available in tier 2 and tier 3 of RTI instruction may be beneficial for a student with a visual impairment.

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who has additional deficits in reading and math. This process will allow for baseline data to be collected in all areas of the evaluation to best track the development of a student with a visual impairment to assist IEP teams during the reevaluation process. This initial data and subsequent data collection via reevaluation periods will assist in the development of appropriate plans and identification of additional disabilities, if they are suspected any time during the student’s educational career.

References (also listed in reference section)
Bridge2Health (2012). *What you should know: Did you know that 80% of what kids learn in school is learned visually?* Retrieved from http://www.indstate.edu/humres/staff-benefits/docs/100-10982%20VI%20Children%20Eye%20Health.pdf
Vision is the primary learning channel in the educational setting. A visual impairment creates barriers to learning in the traditional manner that results in many unique educational needs. As is the intent of the language of IDEA, a student with a visual impairment should have access to a free appropriate public education (FAPE). A student with a visual impairment participating in general education (common core curriculum or adaptive curriculum), will also participate in specialized instruction (expanded core curriculum).

Participation in General Education
The majority of students with a visual impairment can participate in the general education curriculum with appropriate modifications. The curricular areas (e.g. academic, non-academic, physical education, vocational education) and the extent to which the student participates in these areas are determined by an educational team that includes a teacher of the visually impaired (TVI) to enhance the student’s participation. In order to meet these needs, the general education teacher, in collaboration with the TVI, must plan ahead to incorporate appropriate accommodations including access to alternate learning channels. It is also important to be flexible and accepting of the student’s needs (e.g. using special devices, moving around the room to access information, storing special materials and equipment). It is essential to create a supportive environment, both educationally and socially, throughout the school day by demonstrating sensitivity to the needs of the student.

Learning through Alternate Channels
To be successful, a student with a visual impairment must develop skills in a variety of learning channels (e.g. tactual, auditory, and/or visual skills).

- The tactual channel is an important learning mode. For example, the student may need instruction in braille, exploration of real objects, and development of tactile discrimination skills. Training in tactual skills is essential.
- The auditory channel takes on increased importance for all students with visual impairments. The use of this channel may include electronic formats, specialized software/technology, verbalization and description of materials presented, and training to use auditory cues in the environment. Instruction in listening skills and use of speech reading software is vital.
- Depending on the level of functional vision, a student with a visual impairment may use the visual channel for learning. Functional use of vision may vary...
depending on the task, the material, the environment, and the student’s health and level of fatigue. The visual presentation of educational tasks can be enhanced through magnification, appropriate lighting, enlarged print, good contrast, assistive technology, etc. Training in visual efficiency skills is also needed.

What Are Accommodations and Modifications?
A student who is visually impaired can do virtually all the activities and tasks that his/her sighted peers are able to do, but they often need to learn to do them in a different way or using different tools or materials. For instance, a student may need reading materials in braille rather than in print or may need to examine a live rabbit with his/her hands to understand what it is, rather than learning from a picture in a book. Other examples might be arranging a classroom to let a student sit close to the science teacher who is demonstrating an experiment or allowing her extra time to complete a test that the whole class is taking.

Depending on a student's abilities and needs, he/she may need such adaptations to participate in the curriculum and various activities in school, as well as to make use of instructional materials. A student will most likely learn about such adaptations from his or her teacher of visually impaired (TVI) or orientation and mobility (O&M) instructor. Such adaptations in school are usually referred to by the terms "accommodations" and "modifications." Different school systems attach different meanings to these terms, but "accommodation" usually refers to a change in the way a student is taught or tested without changing the standard of learning or performance or the requirements that he/she needs to meet. Some examples include having extra time to complete assignments, using braille or large print materials, having assignments or tests broken up into smaller parts, or completing assignments in a quiet setting away from other students. "Modification" commonly refers to a change in the curriculum. Examples of modification may include, the student may be instructed at a lower grade level or completing fewer items on a test. Because these terms are not used in the same way in all school districts, it will be helpful for you to learn how your school district defines them.

Accommodations/Modifications
The physical environment in which a student with visual impairment learns is extremely important. Modifications to the environment enhance how well a student can use their vision. Factors which can be controlled are illumination, color and contrast, time, size and distance, modifying the larger indoor and outdoor environment, optical devices, and digitally enhanced educational options. Since no two students see the same, not all modifications are appropriate for all students. Some students may need only the mildest modification of a single factor while Revised 6/29/2016
others need significant modifications of many factors. It is critical that a functional vision assessment by a TVI provide the recommendations appropriate for each individual student, and that devices only be used after completion of the functional vision assessment. The TVI must be consulted for any modifications to materials prior to instruction in class. This is also crucial to allow for adequate time for material preparation. An O&M specialist may also complete an assessment to evaluate safe and efficient travel skills of the student. Some students may need only the mildest modifications of a single factor, while others need significant modifications of many factors. Following the concept of Universal Design for Learning, many of the environmental modifications suggested below will be of benefit to a number of students, not just those who have visual impairments.

**Illumination**

The amount of light needed for specific tasks is based on individual preferences. Students with ocular conditions such as albinism or cataracts are sensitive to light, while other ocular conditions require additional illumination. In general, natural lighting is preferable. Gooseneck lamps or other additional light sources should be positioned so the light falls directly on the task and comes from behind and over the student’s shoulder. Facing into direct sources of light, such as windows, should be avoided. Glare should be reduced or eliminated by covering surfaces with a matte finish or changing the angle of viewing. Shades, rheostats or light diffusers may also be used to control the amount of illumination and effects of fluorescent lighting in the classroom. A student with light sensitivity may also benefit from wearing a brimmed cap/hat/visor and/or colored or darkened glasses indoors and/or outdoors.

**Color and Contrast**

Another method to enhance visual performance is the effective use of color. The effectiveness of particular colors will vary with the student. The most effective method to improve visibility is to use bold colors that provide high contrast with the background in order to highlight an object, print material, or other areas. Black and white provides the greatest contrast but other color combinations may be optimal for individual students. High contrast of letters on a page as well as bolder and well-spaced letters may be easier to read for students. Highlighting pens, markers, and bold line paper may also be used to produce better contrast when writing. Many assistive technology devices also have the capability to change color, contrast and size. Students with certain eye conditions like achromatopsia or color deficiency may need accommodations to assignments that would require color perception to complete e.g. maps, math charts, color coding. It will be important for the TVI to determine what works best for these students.

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**Space and Arrangements**

Space between objects/print/pictures and the arrangement of objects/print/pictures can be altered to enhance visual functioning. Objects/print/pictures may need to be spaced further apart and have fewer inner details. When tactile representations of pictures, maps and graphs are used, they should be kept simple, minimizing unnecessary detail. Information on a page needs to be arranged to provide “white space” between print and to eliminate extraneous information. With access to technology, it is easier for teachers to incorporate modifications (e.g. double spacing, fonts size/style). Environmental clutter may also create visual complexity and increases difficulty in identifying objects or persons. Examples of environmental clutter may include: furniture arrangement, obstruction within pathways in classroom and hallways as well as visual clutter on bulletin boards, walls, charts, and hanging artwork/instructional materials. Spacing and arrangement is student specific. As stated earlier, it is critical to consult with the student’s TVI to determine appropriate tactile graphics for graphs, charts, and/or maps. Providing the TVI with the materials to be adapted must be done in a timely manner in order for the student with the visual impairment to receive the materials at the same time as their sighted peers.

**Position**

A student’s visual impairment will dictate the positioning needs in all school environments e.g. glare, proximity to instruction, light sensitivity, stronger visual field preference, ability to move within the classroom, safety, ease of locating seat/exits. Preferential seating should be given to students who need to be in specific locations to view activities. Some students with visual field loss may need to be to the side or at a distance in order to view the activity or object in its entirety. Students should be allowed to view objects, demonstrations, and activities from their best viewing point and should be encouraged to move independently to this position. Some students may have equipment that requires them to have extra work space. They may also need to sit near to or have access to power outlets. Teams may need to be creative in finding a classroom seat that meets a student’s many needs. These decisions need to be made, as appropriate, among all the involved team members.

**Time**

The accuracy and speed of performing tasks is impacted by a visual impairment. Discrimination, identification and reading of print materials requires more time by a student with a visual impairments. The physical demand of using vision for prolonged periods of time may cause fatigue and reduce the student’s speed, accuracy, and attention. The use of braille has similar implications for impacting the student. Extra time may,
therefore, be needed to allow for essential learning to take place. Extra time, as an accommodation within the I.E.P., may be needed to allow for essential learning and assessment to appropriately take place. The general guideline is time and one-half for low vision readers and double time for braille readers. Remember this is only a general guideline and each student’s needs must be considered.

**Size and Distance**

With a visual impairment, objects or printed material which are too small to be seen well will need to be enlarged. The optimal size depends on the student’s visual functioning and ocular condition. Methods of enlargement include bringing the object closer or increasing the size of the image through magnification or large print. Each method has advantages and disadvantages. Near and distance optical devices, such as reading glasses, portable video magnifiers and desktop video magnifiers (CCTVs), optical magnifiers, and telescopes, also have limitations. A student with a visual impairment may be evaluated by a low vision specialist in order to determine the best optical device. Preferential seating should be allowed for a student who needs to view activities closer. Another factor to consider is the effect of a visual field loss. A student may need to be to the side or at a distance in order to view the activity or object in its entirety. A student should be allowed to view objects, demonstrations, and activities from their best viewing point and should be encouraged to move independently to this position.

**Optical Devices**

An optical device may allow some students with a visual impairment to see objects at a distance, or to perform tasks at near, such as reading or writing with greater ease. They are available with various magnifications and uses. These devices should be recommended by a low vision specialist after a clinical vision evaluation. An optical device may not be of benefit to all students depending on their ocular condition/functioning.

- **Magnifiers** enlarge the area being viewed at near, such as print material. They may be handheld, stand mounted, or spectacle mounted. They may also include lighting, so that the item being viewed is appropriately illuminated. It should be noted that using a magnifier is recommended only for select periods or spot checking. For reading, the student should have access to digitally enhanced or large print copies.
• **Telescopes/Monoculars** are designed for distance viewing and require focusing by the student. They may be used for tracking or observing objects at a distance, such as the board, street signs, traffic lights, field trips, etc. Telescopes are also used for select periods or spot checking, not for prolonged use, such as watching a movie. Telescopes can be handheld or spectacle mounted, and can have monocular or binocular lenses.

• **Video magnifiers or Closed Circuit Television (CCTV)** provide an electronically enlarged image through the use of a video camera. The image is enlarged and displayed on a monitor. This device has adjustable magnification, brightness, contrast, and positive and negative polarity (dark on light or light on dark). Video magnifiers come in different sizes and can be large and used on a table or desk top, or handheld and used in a variety of situations. Many enhance an image at both near and distance for ease of viewing. Most offer a color function, which provides students access to photographs, maps and other information that may not be conducive to black and white images.

**Digitally Enhanced Educational Options/Assistive Technology**
In lieu of large print paper copies, using a digitally enhanced format is preferred. Options may be:

- Emailing handouts to the student so they may be enlarged on the computer or tablet.
- Using an app that mirrors the interactive board (such as Join Me or LanSchool) to a tablet or computer, which enables a student to read at near what is presented at distance.
- More information regarding technology that may be used by a student with a visual impairment can be found in Chapter 8, Assistive Technology, in this Guidelines Manual.

**Common Accommodations for a Student with a Visual Impairment**
Listed below please find general suggestions for use with all students within their educational setting. Please see appendix at the end of the chapter for specific accommodations with examples.

- Verbalization of all information presented visually
- Hands-on, concrete experiences to fully understand concepts
- Modifications of assignments as appropriate (length or type of classroom/homework assignments that require complex visual skills)

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● Appropriate specialized materials, equipment, and aids/adaptations (e.g. closed-circuit television, video magnifiers, braille, computer with accessibility features, tactile/high contrast markings) provided at the same time as materials given to their sighted peers
● Opportunities to interact with both sighted peers as well as other students with visual impairments
● Access to interactive whiteboards via assistive technology

Modifying the Larger Indoor and Outdoor Environment
In addition to modifying the immediate work space for a student, the larger indoor and outdoor environment may also need some modification. Such modifications are beneficial to a student with a visual impairment, and, in fact, may be necessary to comply with the ADA requirements regarding accessible paths of travel and/or reasonable accommodations. Often times these modifications are helpful to all students and should be done through collaboration with the TVI and/or the orientation and mobility specialist. Accommodations such as these examples are student specific and derived through collaboration with the TVI and members of the educational team. See common accommodations below.

Indoor Considerations
● Arrange furniture in a logical pattern and with clearly designated passageways
● Tactile, braille or large print signage to designate specific areas in the room
● Designate specific areas in the room according to subject matter or activities
● Reduce the amount of visual clutter and use color and contrast to highlight areas or identify and locate certain objects
● Control amount of lighting and glare through the use of shades, dimmer switches, fluorescent light filters, seating arrangements, and modifying surface areas
● Completely close or completely open doors in corridors
● Use contrasting color on the edge of stairs, on lockers, and other designated areas such as in the gymnasium, auditorium, and cafeteria for easier identification and location

Outdoor Considerations
Environmental conditions may affect a student with a visual impairment in a variety of ways. Additional accommodations may need to be considered for the outdoor environment. Weather conditions and sunlight fluctuate, often making the outdoor visual and auditory environment unpredictable and uncontrollable. Travel and movement may be challenging due to drop offs, broken sidewalks, and other hazards. The following is a

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brief list of modifications/accommodations which should be considered, based upon the needs of the student.

- Use visors, sunglasses, or hats to control illumination
- Allow extra time for student to adjust when entering a brighter or darker area.
- Use contrasting solid stripes or colors on equipment or around large areas.
- Encourage students to be more cautious in shaded areas as shadows may obscure obstacles or holes in the ground. Students may be paired with a peer/adult in these situations and encouraged to be more cautious
- Keep areas of organized paths clear of clutter and alert the student to obstacles that may be in their way.

Instructional Accommodations and Modifications for a Student Who is Visually Impaired

A student with a visual impairment needs to have access to both written and oral instruction and to demonstrations in all subject matter. Accommodations and modifications can help a student better understand the instruction provided by the educational team.

See the following pages for additional accommodation/modification charts:

**Instruction Accommodations Chart**

<table>
<thead>
<tr>
<th>Adaptation</th>
<th>Explanation and Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hands-on experiences</td>
<td>Real-life examples of pictures or actual objects are used in instruction, for example, real coins are provided when pictures of coins are shown in a book.</td>
</tr>
<tr>
<td>Models</td>
<td>Models of objects that are primarily visual are used, such as objects rather than pictures to represent the planets in the solar system.</td>
</tr>
<tr>
<td>More easily readable visual aids</td>
<td>Your student receives his or her own copy of information that will be displayed on an overhead or whiteboard/chalkboard. Copy might be in the digital form, e.g. PDF format emailed to student, screen sharing.</td>
</tr>
<tr>
<td>Clear directions</td>
<td>Explicit language is used when giving directions; such as &quot;Pass your papers to the right,&quot; rather than &quot;over here.&quot;</td>
</tr>
</tbody>
</table>

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Peer (classmate) notetaker

A classmate takes notes of material written on the board and provides a copy to the student with visual impairments.

Extra time for responses in class

Your student may require extra time to respond to class discussions because he or she needs more time to read an assignment.

Oral description or narration

Oral descriptions are provided of visual display material; for example, an exhibition of fine art would be described, or portions of a video or film would be narrated during times when there is no dialog.

Experiential learning

Your student has the opportunity to experience concepts directly that others may view in pictures or from a distance; for example, if the class is learning about farm animals, your student might visit a farm.

Verbalization of writing

Information that is being presented on a whiteboard or in an overhead is spoken aloud as it is being written

Accommodations and Modifications of Instructional Materials

Instructional materials need to be put into an accessible format for a student who is visually impaired. It is important that all materials be considered—not just textbooks, but worksheets and all supplemental reading materials. It is also important for your student to receive them at the same time as her sighted classmates who read print.

Materials, Accommodations and Modifications Chart

<table>
<thead>
<tr>
<th>Adaptation</th>
<th>Explanation and Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Braille</td>
<td>Textbooks, worksheets, and all materials used in instruction are provided in braille.</td>
</tr>
<tr>
<td>Tactile graphics</td>
<td>Printed maps, diagrams, and illustrations are provided in a tactile format.</td>
</tr>
<tr>
<td>Audio materials</td>
<td>Books and other print materials are provided.</td>
</tr>
<tr>
<td>Electronic access</td>
<td>Materials are provided in an electronic format to be accessed with a computer or electronic notetaker, for example, your student uses an online encyclopedia to do research for a term paper or reads a textbook in digital format.</td>
</tr>
<tr>
<td>Print book for parents</td>
<td>For the student who reads braille, parents may request a print/digital copy of a textbook.</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Highlighting key sections</td>
<td>Teachers may highlight sections of books to assist the student in reviewing and scanning/locating information.</td>
</tr>
<tr>
<td>Enlarged Materials, Magnification, or Digital Access Options</td>
<td>Access to instructional content by means of enlarged materials (e.g., enlarged on copier or printed in larger font), technologically enhanced information (e.g. computer or tablet) or magnification aids (handheld magnifier, video magnifier). This may include large print books as well as maps, graphs, and charts as examples. Large print books may be ordered by the TVI per IEP.</td>
</tr>
<tr>
<td>Manipulatives</td>
<td>Physical items (such as small toys, buttons, or beads) are used to demonstrate mathematical concepts or used in art classes to complete a tactile drawing.</td>
</tr>
</tbody>
</table>

**Accommodations and Modifications for Assignments**

To make the best use of their education, students need to be responsible for all classroom and homework assignments. Additional time, or alternatives to visual tasks, may be important modifications for your student.

**Assignments Accommodations and Modifications Chart**

<table>
<thead>
<tr>
<th>Adaptation</th>
<th>Explanation and Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extra time for completion</td>
<td>The student may need extra time because of his or her reading or writing speed or the kind of tools required for reading or writing.</td>
</tr>
<tr>
<td>Descriptive response</td>
<td>The student may provide a written description of a project instead of a visual representation. For example, the class assignment might be to make a drawing of a cell viewed through a microscope. The student who has a visual impairment may provide a written description of the cell rather than a drawing.</td>
</tr>
</tbody>
</table>

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Use of models | The student may provide a model for an assignment rather than a two-dimensional representation.

Reduction of copy work | If an assignment requires copying text or problems, a worksheet is provided so your student can write answers directly on the worksheet and does not need to re-copy the assignment.

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Accommodations and Modifications for Classroom Testing

Different types of accommodations and modifications can help a student with a visual impairment take their class tests along with their sighted classmates.

Classroom Testing Accommodations Chart

<table>
<thead>
<tr>
<th>Adaptation</th>
<th>Explanation and Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extended time</td>
<td>The student may need extra time because he or she reads or writes slowly, or because of the tools he or she uses for reading or writing.</td>
</tr>
<tr>
<td>Use of manipulatives</td>
<td>The student may use manipulatives to demonstrate understanding.</td>
</tr>
<tr>
<td>Spelling tests for braille readers</td>
<td>A student who uses contracted braille should also take spelling tests using uncontracted braille to make sure they can also read and write in standard English.</td>
</tr>
<tr>
<td>Dictation of responses to a scribe</td>
<td>The student verbally reports an answer, and the answers are recorded on the answer sheet by a scribe.</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Screen access to tests administered on a computer</td>
<td>Depending on the student's need to read in print or braille, appropriate screen access to text may be needed through enlarged text, refreshable braille, or a copy of the test in hardcopy braille.</td>
</tr>
</tbody>
</table>

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**Assistive Technology Accommodations And Modifications**

Your student may need assistive technology tools to learn or to communicate with others.

### Assistive Technology Accommodations Chart

<table>
<thead>
<tr>
<th>Adaptation</th>
<th>Explanation and Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low vision devices (near)</td>
<td>Magnification devices for viewing or completing near vision tasks.</td>
</tr>
<tr>
<td>Low vision devices (distance)</td>
<td>Telescopes for viewing or completing distance vision tasks.</td>
</tr>
<tr>
<td>Braillewriter</td>
<td>A mechanical tool resembling a typewriter that is used for writing or &quot;embossing&quot; braille.</td>
</tr>
<tr>
<td>Slate and stylus</td>
<td>A portable tool for writing braille made up of two flat pieces of metal or plastic that are used to hold paper and a pointed piece of metal used to punch or emboss braille dots.</td>
</tr>
<tr>
<td>Notetaker (braille or qwerty keyboard)</td>
<td>A portable device for reading and writing in class. Information can be readily transcribed in order to provide the student with a means to communicate with peers, teachers and others who do not read braille. Some notetakers, with additional equipment, can be used for face-to-face communication between a student who is deaf-blind and sighted-hearing classmates.</td>
</tr>
<tr>
<td>Computer/Touch Screen Tablets</td>
<td>A tool for literacy and learning activities and access to information, especially when equipped with specialized software and hardware.</td>
</tr>
<tr>
<td>Refreshable braille display</td>
<td>Technology that provides access to information on a computer screen or notetaker by electronically raising and lowering different combinations of pins in braille cells.</td>
</tr>
<tr>
<td>Speech access</td>
<td>Software that provides speech output for the text on the screen. Some devices have this capability installed, however, additional software may be necessary to access curriculum, per the IEP.</td>
</tr>
<tr>
<td>Braille translation software</td>
<td>Computer software that translates print into braille and braille into print.</td>
</tr>
<tr>
<td>Large monitor for computer</td>
<td>A monitor that, by virtue of its size, provides larger images for a student with a visual impairment.</td>
</tr>
<tr>
<td><strong>Scanner</strong></td>
<td>A device that copies print material and uses software to translate it into an electronic format so that it can be converted into a preferred reading medium.</td>
</tr>
<tr>
<td><strong>Onscreen magnification</strong></td>
<td>Accessibility options within computers or additional software that enlarges displayed information on a computer or other screen.</td>
</tr>
<tr>
<td><strong>Braille embosser</strong></td>
<td>A raised dot printer that embosses (prints) braille.</td>
</tr>
<tr>
<td><strong>Ink printer</strong></td>
<td>A printer which is compatible with a braille device or software to provide print text for teachers and classmates.</td>
</tr>
<tr>
<td><strong>Tactile graphics</strong></td>
<td>Any tool that converts print images into a tactile format. These can range from low tech (e.g., tracing wheel, wikki sticks) to high tech (e.g., 3D printers and devices which produce raised line diagrams).</td>
</tr>
<tr>
<td><strong>Talking or large print calculator</strong></td>
<td>A device that provides speech and/or large print access to a calculator.</td>
</tr>
<tr>
<td><strong>Talking dictionary</strong></td>
<td>An electronic device that provides a dictionary with speech access.</td>
</tr>
<tr>
<td><strong>Media players</strong></td>
<td>May be portable device as well as software applications built into devices to access digitally recorded audio books/materials.</td>
</tr>
<tr>
<td><strong>Alternative computer access</strong></td>
<td>A number of methods that allow a person with additional impairments to access a computer, such as adapted keyboards and voice recognition technology.</td>
</tr>
<tr>
<td><strong>Augmentative and alternative communication devices</strong></td>
<td>Special communication devices for students who may have additional impairments or other limitations in communication. When these devices are needed, special accommodations for the student’s visual impairment should be considered.</td>
</tr>
<tr>
<td><strong>Adapted devices for daily living</strong></td>
<td>A wide variety of devices adapted for a student with a visual impairment including measuring devices, kitchen utensils, games and toys, and writing aids.</td>
</tr>
</tbody>
</table>
Accommodations and Modifications to the Educational Environment
A student with a visual impairment often cannot perceive information directly from their environment, but accommodations and modifications help them do so. Something as simple as the flexibility to sit closer to instruction may meet the student's needs, or it could be necessary to alter the physical arrangement of the environment by providing additional furniture, shelving, or access to electrical outlets for the operation of specialized equipment.

Environment Accommodations and Modifications Chart

<table>
<thead>
<tr>
<th>Adaptation</th>
<th>Explanation and Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preferential seating</td>
<td>The student is allowed to sit in the classroom wherever it is most beneficial, for example, where he has the best view of the instruction, away from a light source to reduce glare, or near a power outlet needed for an assistive technology device.</td>
</tr>
<tr>
<td>Flexibility to move within a room</td>
<td>A student with low vision is given flexibility to move closer to visual activities in the classroom e.g., classroom demonstrations</td>
</tr>
<tr>
<td>Additional desk or work space</td>
<td>Some students require extra space to accommodate materials/equipment needed to complete classroom tasks.</td>
</tr>
<tr>
<td>Additional shelving or storage space</td>
<td>Braille/large print books and additional equipment (e.g., technologies) require storage space, and adequate furnishings should be provided. This may also include a hook for a student to store their cane in the classroom in a consistent location.</td>
</tr>
<tr>
<td>Appropriate lighting</td>
<td>Some students benefit from additional lighting for literacy tasks; others are very light sensitive (photophobic) and require reduced lighting.</td>
</tr>
<tr>
<td>Locker accommodation</td>
<td>Locker accommodations may need to be made including consideration the impact of visual impairment on locker location (e.g., end of bank of lockers, lighting), type of lock (e.g., swipe, pushbutton, or key locks), and space (e.g., multiple lockers to accommodate equipment).</td>
</tr>
</tbody>
</table>

Here is a link for more information on accommodations and modifications:

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Chapter 4
EXPANDED CORE CURRICULUM

The American Foundation for the Blind describes the Expanded Core Curriculum (ECC) as: “The body of knowledge and skills that are needed by students with visual impairments due to their unique disability-specific needs. The ECC should be used as a framework for assessing students, planning individual goals and providing instruction.” The student’s learning is often impacted due to missed opportunities for incidental visual learning. In addition to the general curricular areas of reading, math, and the content areas, a student with a visual impairment needs specialized instruction in the ECC. These areas include:

● Compensatory or functional academic skills, including communication modes
● Orientation and mobility
● Social interaction skills
● Independent living skills
● Recreation and leisure skills
● Career education
● Assistive technology
● Sensory efficiency skills
● Self-determination

Instruction in many skill areas must be provided at the critical time(s) throughout the student’s educational career. The intensity of instruction in different specialized areas may increase or decrease over time as the student progresses through school. Instruction in orientation and mobility (O&M) is essential as early as possible to teach basic concepts and beginning travel skills. The need for O&M instruction increases as the student matures and is able to learn more advanced independent travel skills, at an age appropriate level.

ECC needs to include the following:

● **Compensatory or Functional Academic Skills** For this area of the expanded core curriculum a distinction must be made between compensatory skills and functional skills. Compensatory skills are those needed by a student with a visual impairment in order to access all areas of core curriculum. Mastery of compensatory skills will usually mean that the student has access to learning in a manner equal to that of sighted peers. Functional skills refer to the learned skills that provide a student with multiple disabilities the opportunity to work, play, socialize, and take care of personal needs to the highest level possible.

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In developing literacy, it is essential that the student be taught using the most appropriate sensory mode(s). A student may read using braille, large print, regular print with assistive technology and/or auditory materials. The student may write in braille, print, keyboarding and/or dictation. The student’s reading and writing medium should be assessed periodically to determine whether the current medium is the most appropriate for the student and whether an alternative or additional medium should be introduced. Once the appropriate medium is selected, instruction may be necessary to improve the student’s technique, comprehension, speed and/or accuracy.

Other areas of instruction that assist a student with a visual impairment to effectively access the curriculum include:

- Signature writing
- Accessibility to computers
- Specialized assistive technology designed for a student with a visual impairment
- Use of optical aids
- Closed-circuit television, Video magnifiers
- Listening skills
- Braille writer and slate and stylus
- Abacus
- Instruction with specialized software, electronic books, talking calculators, or other equipment especially designed or modified for a student with a visual impairments
- Ongoing language development
- Ability to order and maintain materials and equipment
- Study and organizational skills
- Concept development
- Keyboarding

Regardless, each student will need instruction from a TVI in each of the compensatory and functional skills they need to master. These compensatory and functional needs of a student with a visual impairment are significant, and are not addressed with sufficient specificity in the existing core curriculum.

- **Orientation and Mobility** (O&M) skills include understanding, interacting with and moving about in one’s physical and spatial environment with independence and safety as the major goals. Instruction in O&M should be provided by a Certified Orientation and Mobility Specialist and may include the following which are vital to independent travel: Safety and protective techniques, understanding of environmental concepts, human guide

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techniques, cane travel, posture, travel throughout all environments and use of public transportation. Instruction in orientation and mobility (O&M) is essential as early as possible to teach basic concepts and beginning travel skills. The need for O&M independent travel skills, at an age appropriate level. Many students with visual impairments will not become drivers. Consequently, a student may require instruction in utilizing public transportation as part of his/her transition plan. The student will be a passenger as well as a pedestrian. Therefore, it is necessary for them to have access to a driver’s education program to be aware of driving practices and the rules of the road as a basis safety measure.

- **Social Interaction Skills** of a student with a visual impairment require unique instruction because of the effects vision loss may have on the formation of self-concept, opportunities for appropriate modeling in social situations, involvement in recreational activities, development of concepts about human sexuality, and understanding their visual impairment. Acceptance and understanding of one’s own eye condition and its functional implications can increase a student’s ability to make appropriate decisions regarding health and safety, environmental modifications, etc. This knowledge also empowers a student to be an advocate for his/her own needs. To compensate for this loss of incidental visual learning, special instruction must be provided in the following areas: socialization, effective education, leisure activities, sex education, and the implications of one’s own visual impairment.

- **Independent Living Skills** must be systematically taught with necessary skills in the natural environment due to limited opportunities for incidental learning and limited knowledge of adaptive techniques. Instruction in daily living skills may include, but not be limited to the following: personal hygiene, dressing skills, clothing care, housekeeping, preparation, eating skills, money management, social skills, communication skills, first aid and safety, telephone usage, time management, and organizational skills. This may be addressed at age appropriate levels throughout the student’s educational career so that they can function as independently as possible. In addition, collaboration with families is critical to ensure that the ADL skills are incorporated into the natural environment.

- **Career Education** for a student with a visual impairment should begin in the primary grades. The acquisition of specialized skills, utilization of special equipment along with necessary adaptation for various vocational opportunities would be explored throughout the total curriculum. Work experiences must be provided to develop strong work habits, to broaden the student’s awareness of employment opportunities available in current and future job markets, and to assist the student in assessing his/her own vocational skills and
interests. Realistic goals then need to be established while still encouraging advocacy for new opportunities. A significant number of individuals with visual impairments are unemployed or underemployed, therefore, appropriate accommodations must be made to enable these students to participate in career development, work-study and vocational education programs. Collaboration between the general education personnel and the TVI can ensure that such programs meet the needs of the student to facilitate employment.

- **Sensory Efficiency Training** is essential in order for the student with low vision to fully utilize his/her remaining vision. A student with a visual impairment, who can use their vision for learning, may not be able to do so effectively without appropriate training in visual efficiency and/or the use of adaptive optical or non-optical aids. For example, instruction may be needed in systematic scanning skills, tracking print, figure-ground discrimination, use of video magnifiers, closed circuit televisions (CCTV), specialized equipment and other magnification devices, or techniques for modifying the lighting and contrast in the environment. Instructional approaches are developmentally sequenced based on the student’s needs. In addition, learning how to integrate all remaining senses to counter the impact of any missing or impaired sense is also integral to this area; for example, learning how to use tactual, gustatory, and olfactory input rather than visual cues to identify one's personal possessions, or using hearing and the other senses to identify people one knows without visual cues, fits into this area. Sensory efficiency skills must be practiced through meaningful activities in the home and community, not just at school. Taking this into account, TVIs support sensory efficiency instruction across a range of stimulating and relevant/natural environments.

- **Recreation and Leisure Skills** contribute to the quality of life for all students, including those with a visual impairment. A student with a visual impairment requires further instruction in these skills due to the fact that their loss of vision impacts their ability to actively engage both physically and socially. Education in such skills, ensure student’s lifelong enjoyment of physical and leisure-time activities, including:
  - making choices about how to spend leisure time
  - actively participating in physical and social recreational activities
  - trying new leisure activities
  - following rules in games and activities at an appropriate level
  - maintaining safety during recreation/leisure activities

Education in recreation/leisure skills can positively impact the student’s entire life. Physical education programs are important in providing opportunities for much needed physical activity as well as in teaching a variety of recreation/leisure skills. While the

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majority of students with visual impairments are able to participate in physical education with their sighted peers, there are times when the IEP team may determine that the related service of adaptive physical education is needed for an individual student. Participation in these activities may be dependent upon the risk factors associated with certain ocular conditions or other physical disabilities.

● **Self-Determination** for a student with a visual impairment is critical for independence. This includes accepting his/her visual impairment, appropriately communicating their visual needs and accommodations, and accessing the resources available to them. Advocating for one’s own needs and learning from one’s successes and mistakes empowers the student to have the confidence to be successful. Instruction in self-determination is critical in developing skills to successfully control one’s life, reach goals and participate fully in the world.

● **Assistive Technology Skills** can unlock learning and expand the horizons of a student with a visual impairment. Assistive technology is a great equalizer and an essential part of the expanded core curriculum. Assistive technology (AT) is an umbrella term that includes assistive and adaptive tools as well as instructional services that can enhance communication, access, and learning. It can include electronic equipment such as switches, mobile devices, and portable notetakers; computer access such as magnification software, screen readers, and keyboarding; and low-tech devices such as an abacus, a brailler, Active Learning materials (e.g., Little Room®), and optical devices (Texas School for the Blind and Visually Impaired, n.d.). AT does not only refer to complex high-tech electronic systems. Many useful solutions are decidedly low tech. AT can be as simple as a book stand to hold a textbook at a comfortable position so a student with a visual impairment does not have to bend over the desk to read. It can be as complex as a computer system with screen reading and voice recognition software for students who have difficulty both seeing the screen and using the keyboard. Most students need a range of both low and high tech devices. (American Foundation for the Blind, n.d.)

In summary, the ultimate goal of all specialized instruction (including ECC) is to make the student with a visual impairment as independent as possible. The instructional program should be designed to develop critical thinking skills that can be applied in both academic and nonacademic areas.

**Resources** (also listed in resource section)

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Chapter 5
SERVICE DELIVERY OPTIONS FOR STUDENTS WITH VISUAL IMPAIRMENTS

Support is available from birth through 21 with a continuum of instructional services available. Services may range along the continuum from consultation to direct services to placement in a residential setting (see below). These may include services both within and outside of the classroom setting from a licensed teacher of the visually impaired (TVI). Consideration must always be given to least restrictive environment which is including the student with his/her nondisabled peers to the greatest extent possible. Factors to be considered when determining placement options include: impact of the visual impairment upon learning and independence (the expanded core curriculum), age of onset of the visual impairment, and the presence of multiple impairments. Decisions on student needs and programs or services options are made by the educational team which includes a TVI and the parents.

Early Intervention Services (Birth up to age 3)
Early intervention services are provided through the Department of Human Services, Bureau of Early Intervention. In alignment with nationally recommended practices (Hatton et al., 2003) and Part C of IDEA, services are provided in the natural environment using family-centered practices. The natural environment is commonly defined as the home or community, but could also encompass child care or center-based programs. It is essential that services focus on family concerns while collaborating with families to problem-solve solutions and integrate strategies in the family’s daily routines. Early intervention services that address the needs due to the visual impairment are provided by a licensed TVI, who is referred to as a Developmental Therapy Vision Specialist (DTV) in the Illinois Early Intervention System.

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When appropriate, orientation and mobility services are provided by a Certified Orientation and Mobility Specialist (COMS), referred to as a Developmental Therapy for Orientation and Mobility (DTO&M) in the Illinois Early Intervention System. Planning for transition to school aged services should begin when the child reaches 2 years 6 months to determine eligibility for school based services.

Public School Educational Programming (Ages 3 through 21)
As of a child’s third birthday, he/she may be eligible for educational services through the local school district. A TVI and, if appropriate, a COMS should be available to provide an evaluation for services. Students entering elementary school programs may have consultation and/or direct services available to them as determined by the Individualized Educational Program Team.

Consultation Services  Consultation services are available to school staff, families and community members. These services are geared to supporting the educational team, while not necessarily providing services directly to the student. Consultation services may include:

- Assessing and monitoring the student’s visual needs
- Modification of the learning environment (Chapter 3)
- Assessment of safe access (ADA)
- Provision of assistive technology
- Assistance in accessing materials, transcription services (braille, large print, auditory)
- Disability awareness programs to student peers
- Staff development and training
- Modification of instructional methods and materials
- Ongoing assessment and future planning i.e. Early Childhood Outcomes, transition plans

Direct Services  It may be determined by the I.E.P. team that the student needs direct services. These services are to be delivered by a TVI, be it through a resource in-school program or by an itinerant TVI, who travels between students’ schools throughout the day. The role of the TVI is as varied as the individual student’s needs. The TVI continues to work in consultation with the educational team involved, as well as working in collaboration with staff to insure continuity of instruction throughout the student’s school day. Instruction may focus on, but not be limited to providing services directly to the student with a visual impairment.

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- Adaptive skills for a student with a visual impairment (See Expanded Core Curriculum Chapter 4)
- Academic reinforcement related to the vision loss
- Assistive technology (Chapter 8)

**Related Services** Students with visual impairments are eligible for any related service which meets their educational needs. Students may display deficits in other developmental areas. Personnel in all ancillary disciplines such as speech, occupational therapy, physical therapy, or social work will be included in team collaboration with the TVI. Deficits in the areas of safe and independent travel due to a visual impairment, spatial awareness and physical safety require orientation and mobility services. Services by the COMS would be considered a related service. Services provided by TVI are never a related service. Vision is considered an eligibility category under Part B of IDEA and services are considered part of the educational programming (Koch, June 10, 2005).

**Public Residential Programming for the Visually Impaired** The State of Illinois provides residential facilities for students with visual impairments.

- **Illinois School for the Visually Impaired (Age 5 through 21) and Philip J. Rock Center (Age 3 through 21)**
  The Illinois School for the Visually Impaired (ISVI) and the Philip J. Rock Center and School (PRC) completes the continuum of service delivery options offered in-state. ISVI is a facility located in Jacksonville, Illinois. Operated by the Department of Rehabilitation Services (DRS), ISVI is available to students with a visual impairment ages 5 through 21, and must be discussed at the student’s IEP meeting. An evaluation of the student by ISVI staff ensues prior to enrollment. PRC is a similar facility providing services to students age 3 through 21 with a combined visual-auditory impairment. PRC is located in the Chicago suburb of Glen Ellyn. Both programs can also offer opportunity for students to attend classes in community schools while living in a dormitory setting. Application to each school is made to admissions office of the respective facility (See below for addresses and phone numbers). In addition to residential programming, both ISVI and PRC provide outreach to support students throughout Illinois. Both programs offer services from 18 through 21 if the student opts to defer their diploma from their high school.

- **ICRE-Wood -Post Graduation Option**
The Illinois Center for Rehabilitation and Education – Wood (ICRE-Wood) assists adults who are blind or visually impaired in rediscovering their independence and freedom. ICRE-Wood staff work one-on-one with participants to help them achieve their employment, education, training, and independent living goals. ICRE-Wood offers a concentrated, short-term residential program for adults who are newly blind or visually impaired. During this 14-week course, participants receive intensive training in orientation and mobility, and activities of daily living. All ICRE-Wood programs are free to eligible Illinois residents.

References (also listed in Reference Section)
Koch, Christopher (2005, June 10). Memorandum 05-4 to District Superintendents and Directors of Special Education. Illinois State Board of Education.

Resources (also listed in Resource Section)
ICRE-Wood
1151 South Wood Street
Chicago, IL 60612
312/633-3520 (V), 312/633-3828 (TTY)

ISVI
658 E. State Street
Jacksonville, IL 62650
217/479-4400

Philip J. Rock Center and School
818 DuPage Blvd.
Glen Ellyn, IL 60137
630/790-2474 (V)

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Chapter 6
MULTIPLE DISABILITIES WITH A VISUAL IMPAIRMENT

ISBE guidelines state that if a student who has multiple disabilities and is also diagnosed as visually impaired, deaf or hearing impaired, and/or deaf blind, the sensory impairment must be stated as the primary, secondary, or tertiary impairment. The sensory impairment must be separate from the multiple disability label.

Students with multiple disabilities are an exceptionally diverse group. They present with a wide range of cognitive, physical, and sensory functioning levels. They also may have a wide range of medical issues, such as extended hospitalizations, recurring medical procedures, surgeries, vulnerable immune systems, and effects of medications. This diversity can result in a variety of educational and related service needs. These factors can have obvious implications for providing appropriate assessment, educational programming, and options for service delivery.

Students with multiple disabilities are entitled to the same rights and same opportunities as all other students. Information in other chapters of this guide may be applicable for students with multiple disabilities, even if not discussed in this chapter. Modifications should be made for access due to student disability and the needs generated by that disability.

Due the diverse needs of students with multiple disabilities it is essential that all IEP members, including the parents, work as a team. Effective teaming is essential to both assessment and programming, to collaborate in all aspects of the educational program. Administrators can provide the necessary support to ensure that this communication, collaboration and training will occur.

The teacher of the visually impaired (TVI) plays a critical role for those students with multiple disabilities who have a visual impairment. He or she will have information and techniques to offer fellow team members, especially in the role of consultant and trainer to other services providers (e.g. teachers, therapists, instructional aides). The TVI can provide direct instruction to the student, conduct appropriate assessment, and help other team members understand how a student’s visual disabilities can impact various skill areas. The TVI can also give suggestions for adaptation of materials, use of specialized equipment, and train other staff so that they can support the student in the use of his/her vision throughout the school day.
Assessment
Comprehensive and appropriate assessment plays a critical role in the determination of educational programming for students with multiple disabilities. All current and pertinent information from relevant sources should be reviewed prior to the assessment. Such sources can include parents, teachers, therapists, doctors, etc. Observation of the student prior to assessment is also important to determine appropriate tools, approaches, relevant tasks, and environments. Optometric and/or ophthalmological examination necessitates special experience and skill on the part of the examiner. Input from a TVI, with help from the educational team, may be of great assistance in planning/completing the clinical assessment. For example, the TVI can provide information to help the doctor understand the student and their needs, such as the student’s mode of communication, reinforcers, and/or cognitive ability. Teachers may also substantiate reasons for corrective and or safety lenses to help with functional tasks.
Upon evidence of a diagnosed visual impairment, a functional vision assessment should be considered. This assessment may include the following: visual functioning, daily living skills, orientation and mobility, access to communication systems, compensatory skills, behavioral and social interaction skills, and recreation/leisure skills. In addition, the many variables associated with transitioning to home, school and work environments must be assessed. Variables in the educational environment (e.g. building layout, room arrangement, lighting, demands and expectations in the classroom, structure and reinforcement available) should also be assessed as to their impact on the student’s ability to function successfully. Information from the functional vision assessment will be useful as other educational professionals complete additional assessments (i.e. implementation of appropriate communication systems).

The assessment approach will necessarily be eclectic, choosing appropriate procedures, activities and materials from a variety of relevant formal and informal techniques and instruments, as well as from the student’s daily repertoire of tasks and environments. Upon completion of the assessment, educational goals and strategies will be determined. Assessment should be an ongoing dynamic process insuring that the student’s progress, changing needs, environmental variables, etc. will lead to appropriate modifications in his/her educational program aligned with best practices in progress monitoring.

Programming Priorities
To meet the needs of the student with multiple disabilities it is essential that all teachers, therapists, parents, and private providers work together. The student’s needs in all domain

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areas are integrated in a way that impacts the student’s functioning. It is essential to look at the whole child including the impact of the visual impairment. For example, consider the relationship of motor demands, head control, and eye gaze when working on communication. Discussions must be ongoing for all parties to understand the nature of the disability, the therapies involved, interventions suggested, and the ramifications of all of these components as related to the student’s functioning. Programming must be done to ensure that all areas of the student’s needs are being addressed. These programming priorities include the following:

- **Collaborative Teaching** - It is often difficult for the student to generalize the skills learned on a one-to-one (pull-out model) when completed in a separate location away from his/her own classroom. When the student receives educational vision services within the classroom, the student and other educational staff benefit as instruction can more easily be replicated in all aspects of the student’s day. The following variables may change daily: physical positioning of the student, placement of materials, eye preference, auditory/tactual/visual presentation, and amount of visual demands. The student’s visual performance may fluctuate throughout the day. All service providers involved benefit from an arrangement where they have an opportunity to observe, and collaboratively work together, to develop appropriate teaching strategies that maximize the student’s educational potential.

- **Orientation and Mobility (O&M)** – When appropriate, training in relevant environmental concepts and skills to travel as safely and independently as possible must be taught in collaboration with a Certified Orientation and Mobility Specialist (COMS). When students have additional physical disabilities, these services may need to be provided in conjunction with techniques and supports from a physical therapist.

- **Vocational Skills/Transitioning** – It is important for the team to include the TVI when considering vocational placement and skills training. Visual skills will need to be taken into consideration when determining employment options.

- **Recreation/Leisure Skills** – Visual impairment can impact students motivation and ability to move and engage in their environment. It is important for the team to consult with the TVI when considering appropriate programming.

- **Social Interaction Skills** – Students with a visual impairment often miss social cues. Direct instruction in this area is crucial.

- **Activities of Daily Living (ADL)** - TVI will offer strategies in addressing ADL skills such as self-feeding, grooming, dressing, toileting, and caring for individual medical needs, when appropriate or part of the transition plan. One on one instruction may be necessary based on the degree of vision loss and its impact on development of these skills.

**Strategies for Programming Priorities**

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• **Multisensory Approach** – Many students with a visual impairment and multiple disabilities benefit from a multisensory approach to instruction. Providing information through more than one sensory channel – either simultaneously or in a deliberate sequence – can help keep a student engaged, control sensory state, and develop concepts. The Learning Media Assessment (Chapter 2) will be helpful in determining whether vision, hearing, or touch may provide the most information for a student. However, smell, taste, proprioception and vestibular inputs also offer valuable stimulation and information for the student with visual and multiple disabilities.

• **Low Vision Accommodations** - It is critical to help the student with low vision maximize his/her visual functioning through various means. This may include the use of varied adaptive aids and equipment, placement of materials, and positioning the student to improve muscle tone. Also to be considered is instruction in scanning and tracking, and it’s functional application to communication skills, daily living skills, and orientation and mobility.

• **Auditory Skills** - Provide instruction in effective listening skills in regard to following auditory directions and identifying/recognizing environmental sounds and cues, especially as they relate to mobility and safety. In addition, auditory skills play an important role in the interpretation of spoken language/recorded information, such as audio books and screen readers/speech generating devices.

• **Tactile Skills** - Provide instruction in effective skills of systematic searching, the ability to tactually identify objects, locations and people (as appropriate), and to use objects functionally. In addition, the IEP process must include a discussion in respect to the appropriateness of braille instruction.

• **Methods of Communication** - The educational team should be part of the discussion regarding augmentative communication modes/devices. Consideration must incorporate the impact of the child’s visual impairment on their access to both expressive and receptive communication. For example, options could include picture size, contrast, placement, complexity, etc.

In summary, a collaborative approach must be taken when working with students with multiple disabilities who also have a visual impairment.
Chapter 7
PROFESSIONALS SERVING STUDENTS WITH A VISUAL IMPAIRMENT AND CERTIFICATION/LICENSE REQUIREMENTS

Students with a diagnosed visual impairment may work with the following professionals:

**Teacher of the Visually Impaired** (TVI) must hold a valid Illinois Professional Educators License (PEL) with an endorsement in Teachers of Students who are Blind or Visually Impaired through the Illinois State Board of Education. For *Standards for the Teacher of Students who are Blind or Visually Impaired* refer page 27-36 of the 23 Illinois Administrative Code Section 28.210 subtitle A subchapter b [http://www.isbe.net/rules/archive/pdfs/28ark.pdf](http://www.isbe.net/rules/archive/pdfs/28ark.pdf) (please see appendix).

**Certified Orientation and Mobility Specialists** (COMS) require valid ACVREP certification. The Academy for Certification of Vision Rehabilitation and Education Professionals (ACVREP) is a member of the National Organization for Competency Assurance (NOCA) and strives to conduct its certification programs according to the standards established by the National Commission for Certifying Agencies (NCCA).

**Developmental Therapist Vision Specialists** (DTV) must hold a valid early intervention credential as a DTV issued by the Illinois Department of Human Services. DTVs serve children who are birth to three years of age and their families through the Illinois early intervention system.

**Developmental Therapist Orientation and Mobility** (DTO&M) must hold a valid early intervention credential as a DTO&M issued by the Illinois Department of Human Services. DTO&Ms serve children who are birth to three years of age and their families through the Illinois early intervention system.

**Vision Supervisor/Coordinator** must hold a valid Illinois Professional Educators License (PEL) with an endorsement in Teachers of Students who are Blind or Visually Impaired through the Illinois State Board of Education and may be requested to get a supervisory or a Type 75 general administrator’s endorsement.

More information regarding programs to become licensed/credentialed for working with students with a visual impairment within the State of Illinois.

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Teacher of the visually impaired: Northern Illinois University or Illinois State University.

Orientation and Mobility Specialist: Northern Illinois University

Developmental Therapist Vision: Illinois State University

Developmental Therapist Orientation and Mobility: Illinois State University

Responsibilities of Personnel Working with Students with a Visual Impairment

**Teacher of the Visually Impaired**
The TVI is responsible for the instruction and assessment of the following Expanded Core Curriculum areas:

- Compensatory or functional academic skills, including communication modes
- Social interaction skills
- Independent living skills
- Recreation and leisure skills
- Career education
- Use of assistive technology
- Sensory efficiency skills
- Self-determination

The teacher of the visually impaired assesses educational implications of a student’s visual impairment in order to design, develop and implement educational programs in collaboration with other school staff members.

The TVI, in coordination with the general educator, needs to ensure the student has access to all educational curriculum through adapted materials, assistive technology, compensatory strategies, environmental accommodations, etc. In-service and training for general educators is crucial to the student’s success in the least restrictive environment. The TVI works as a liaison between families, community agencies, eye specialists, school districts, etc.

**Certified Orientation and Mobility Specialist**
Orientation and mobility (O&M) is a related service provided to students with low vision and blindness. The O&M specialist develops and coordinates an individual program for each student to achieve specific skills to orient one’s way in the environment and mobility skills to travel safely and efficiently. The O&M specialist completes all assessments and evaluations regarding mobility and develops and implements the orientation and mobility goals on the IEP. The specialist orients the student to classrooms, the school building layout, the home neighborhood, the workplace and the community. Other areas of focus may include...
sensory awareness, concept development (body image, spatial, positional, directional and environmental concepts, etc.), self-protection techniques, human guide, cane skills, safety concepts, problem solving, planning routes, crossing intersections, and rules for safe travel. The specialist provides instruction in the independent use of public transportation. S/he assists physical education teachers by providing adaptive techniques and instructional ideas for working with students with visual impairments. Providing education to schools and the general community regarding visual impairments, O&M, and vision services is also part of the role or the orientation and mobility specialist. The specialist also assists other team members in monitoring students’ orientation and mobility techniques to ensure continuity and carry-over skills.

**Vision Coordinators of Programs for the Visually Impaired**

The vision coordinator provides instructional leadership for staff and students within the Program for the Visually Impaired. As a leader, the coordinator supervises instruction of programs for the visually impaired, stimulates program and curricular development including the core academics and the Expanded Core Curriculum, and collaborates with the leaders of other vision programs across the state as a member of the Illinois Vision Leadership Council (IVLC). S/he provides technical assistance, serves as a resource, develops and implements professional development, in-service, and training activities to TVIs, O&M specialists, students, parents and district personnel. The coordinator ensures compliance with state and federal regulations governing students with visual impairments. Maintenance of the register of legally blind census, other student data for the state, and approval of requests for large print, braille, tangible aids and assistive technology from the Illinois Instructional Material Center are responsibilities of the coordinator. The vision coordinator monitors referrals, may conduct functional vision assessments, and attends IEP meetings. Coordinators also supervise and may evaluate vision staff. Advocating for students with visual impairments in home, school and community is an essential role of the vision coordinator.

Districts that do not employ a vision coordinator with a background and training in the field of visual impairments should collaborate with vision coordinators through the state. For a list of vision coordinators in the state, please contact the Illinois Instructional Materials Center at 312-997-4699 to appropriately support the unique needs of the vision professionals on their staff and the students they serve.

**Developmental Therapist – Vision Specialist**

DTVs work with families and children from birth to three with vision loss. The DTVs support the families by providing information about the child’s specific diagnosis, vision loss

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and its impact on development, how the visual system works, early literacy, adaptive methods, maximizing visual functioning, providing ideas on how to work on skills within the daily routine, provide resources and help transition into the education system at age three. DTVs work directly with the children as well as model techniques and strategies to their parents to optimize skills.

**Developmental Therapist - Orientation and Mobility**

DTO&Ms work with families and children from birth to three with vision loss. The DTO&Ms help infants and toddlers develop body orientation, orientation within the environment, and skills related to mobility. The DTO&M also help children and families learn strategies for safe travel. Such instruction may include pre-cane and cane skills as appropriate for young children.

**Paraprofessional/Instructional Assistant**

Paraprofessional/Instructional Assistant serving the student with visual impairments works under the direction of the TVI. Paraprofessionals are required to have an endorsement as a “paraprofessional educator” by the Illinois State Board of Education.

**Reader/Transcriber**

Readers/Transcribers transcribe materials into braille, large print, audio or digital media. They work under the supervision of the TVI. Transcribing materials into braille, large print, audio or digital media is a process requiring training for proper formatting. The material preparation for a student with a visual impairment requires a team effort between the TVI, general educator and paraprofessional which is the TVIs responsibility to coordinate. The Library of Congress offers training to become a certified braille transcriber.

**Deaf-Blind Intervener (pending approval From ISBE)**

Each intervener shall hold a high school diploma, its recognized equivalent, or educational license and a statement of approval from the State Superintendent of Education, which shall be identified as valid as an intervener. Each intervener will meet qualifications as typical for paraprofessionals; in addition, specific training as an intervener is proposed and pending approval by ISBE. Before employing an intervener, please check current intervener requirements in school code. These requirements are anticipated to be listed in the administrative section under 25.550.

Each applicant for intervener shall also:

- Demonstrate nationally recognized intervener knowledge and skills competencies based on current CEC guidelines; or
• Hold a National Intervener Credential/Certificate.

Educational Team
The previously defined specialists work in concert to develop the support necessary for students with a visual impairment to have equal access to educational programming commensurate with their peers. Their responsibilities extend to supporting the school, staff, families and the communities in which students live. The licensed/certified vision staff share their expertise through training and support to school personnel. It is essential that general educators and TVIs collaborate regarding curriculum so that the materials may be made accessible prior to the classroom instruction. In order to ensure students with visual impairments have equal access to materials at the same time as their sighted peers, sufficient time is required for these materials to be appropriately adapted. The building administrator’s role is to support the vision staff to ensure this process is followed.

Eye Health Care Professionals
Eye health care professionals provide key information regarding diagnosis, prognosis and prescriptive recommendations. These specialists are not in a position to make specific educational recommendations regarding placement, services, reading media etc., however the information they provide greatly assists the educational team in the initial phases of assessment.

Clarification of roles of the eye care professionals:

• **Ophthalmologist:** The ophthalmologist is a doctor of medicine (MD) who specializes in diagnosis and treatment of defects and diseases of the eye, performing surgery when necessary or prescribing other types of treatment including corrective lenses. Through consultation with ophthalmologist, the team obtains information regarding a student’s diagnosis, prognosis and treatment recommendations.

• **Optometrist:** The optometrist prescribe medications, glasses and/or contact lenses, vision therapy, occlusion therapy, and low vision rehabilitation. They are not allowed to perform eye surgery in some states, including Illinois, but can provide preoperative and postoperative care. Through consultation with the optometrist, the TVI obtains information regarding the student’s refractive status (degree of nearsightedness, farsightedness, etc.) oculomotor functioning (eye movement skills) and guidelines for prescribed treatment (i.e., patching therapy) or corrective lenses. The TVI then may interpret this information for the parents and/or appropriate personnel, and assist in monitoring use and care.

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- **Optician**: The optician or dispensing optician is a technical practitioner who designs, fits, repairs and dispenses prescription glasses.

- **Ocularist**: The ocularist is a trained technician skilled to fit, shape and paint the ocular prosthesis for individuals who have lost an eye.

- **Low Vision Optometrist**: All optometrists and some ophthalmologists receive basic training in the assessment and treatment of individuals with vision loss that is not fully correctable by medical intervention, surgery, glasses, or contacts. Residency-trained optometrists complete a one year accredited comprehensive program with training in the evaluation, diagnosis and multidisciplinary management to maximize a student’s functional vision. Treatment may include, but is not limited to prescribing glasses, low vision devices, sun wear, assistive technology devices, and/or other treatments. Through consultation with the low vision doctor, the TVI and/or the Certified Orientation and Mobility Specialist may develop specific programming goals related to the student’s care and use of these devices.

It is important to note that the developmental optometrist is responsible for any vision therapy services, as this is a medical model. Vision therapy is not under purview of the teacher of the visually impaired.
ASSISTIVE TECHNOLOGY

Assistive Technology (AT) can enable a student with a visual impairment to achieve educational success and gain competitive employment. It can remove barriers to student performance and enable a student with a visual impairment to maintain or improve his/her quality of life. AT can open up exciting new opportunities for a student, but it is not magic. AT devices should not give students an unfair advantage, but instead, should provide them with the independence to compete effectively with peers.

Specifically, a student with a visual impairment may require AT which may focus upon

- speech access
- braille access
- print access
- tactile communication systems
- any combination of these access modes

The current challenge is to provide appropriate access to and instruction in AT. This is accomplished through

- individualized assessment of AT needs
- timely distribution of AT and
- appropriate instruction in the use of AT.

The instruction should be delineated within the student’s IEP, as stated in IDEA.

It should be noted that the AT is determined by the student’s educational needs. While there are many options available, the student’s ability to effectively use the device will be taken into consideration and then a determination will be made as to what level device is best to meet the student’s needs. Many factors should be taken into consideration. They may include: curriculum needs, cognitive level, visual skills, motor skills, auditory skills, and environmental needs. These factors should be student specific. A low tech device may be just as beneficial as a high tech device. It is imperative to have a plan in place to accommodate the needs of a student when their technology fails. This plan may include low tech devices or temporary accommodations (e.g., peer buddies).

Specialized training and access to appropriate instruction may also include more universally designed technology (e.g., tablets, computers, smart phones, etc.) Most technology devices include built-in accessibility features (e.g., screen reader, screen magnifier, reverse contrast, larger bold text, guided access, accessibility shortcuts, etc.) to support the use of such devices by people who have disabilities, including those who are visually impaired. These sorts of
everyday devices can be used in combination with the specialized AT used by students who are visually impaired allowing for an even greater degree of customization and access to information.

**Legislative Directives Related to Assistive Technology**

The following section may be helpful to school districts. Language is highlighted from pertinent legislation related to Assistive Technology and children with disabilities. While this is not specific to children with visual impairment, the principles apply and will be useful for decision making entities.

Federal and State law protects the rights of students with disabilities and specifically address the responsibility for the IEP team to consider assistive technology. For example, as stated in IDEA 2004, the “IEP team also shall...consider whether a child requires assistive technology and services” [34 CFR § 300.346(a)(2)(v)]. In addition, if the IEP team determines that the child needs assistive technology to receive FAPE, the child may take assistive technology home (IDEA 2004, 34 CFR § 300.308).

IDEA defines assistive technology 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 functional capabilities of individuals with disabilities” [IDEA, 2004, 34 CFR § 300.602(1)(a)]. (For children with a visual impairment, this may include for example: low vision aids, bold line paper, braille writers, screen readers, braille embossers, communication devices.)

An assistive technology *service* is defined by IDEA 2004 as "any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device" [34 CFR § 602(2)]. This legislation goes on to specify that the term includes:

- the evaluation of the needs of such child, including a functional evaluation of the child in the child's customary environment;
- purchasing, leasing, or otherwise providing for the acquisition of assistive technology devices by such child;
- selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing assistive technology devices;
- coordinating and using other therapies, interventions, or services with assistive technology devices, such as those associated with existing education and rehabilitation plans and programs;
  - training or technical assistance for such child, or, where appropriate, the family of such child; and

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Principles of Assistive Technology for Students with Visual Impairments- (The following information was adapted from www.tsbvi.edu. See resource list below.)

General Principles

- AT can only enhance basic skills, it cannot replace them. (AT should be used as part of the educational process, and can be used to teach basic skills.)
- AT for students with visual impairments is more than an educational tool, it is a fundamental work tool – it is equivalent to pencil and paper for non-disabled students.
- Students use AT to access and use standard tools, complete educational tasks, and participate on an equal basis with non-disabled peers in the regular electronic educational environment.
- Use of AT does not automatically make educational and commercial software/tools accessible or usable.
- The student should be provided with the appropriate technology for his or her task requirements, (commensurate with typical peers) and/or developmental skill levels. While investments in technology should allow for educational growth, it is important that technology is appropriately complex and challenging in order to meet the needs of the student.

Assistive Technology Evaluation Principles

Determination of AT is typically initiated by the TVI. This must be guided by individuals who have comprehensive expertise in AT specific to blindness and low vision needs. These individuals may collaborate with others on the educational team or AT specialists to determine the specific needs of students with visual impairments.

- AT evaluation is an extension of the Learning Media Assessment (LMA). You need basic (print and/or braille) reading and writing functioning found in the LMA, Functional Vision Evaluation, Low Vision Evaluation, etc. to determine and evaluate appropriate AT requirements.
- To be effective, an AT evaluation should be ongoing

Student Guidelines

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• Every student’s AT needs are unique. The necessary technology selected for each student must be driven by the student’s needs rather than only considering the equipment that is currently available.

• Functional use of AT may require a combination of large print, speech, or braille. A student may require redundant sensory feedback in addition to their primary learning media (e.g. a student with low vision using speech output or a student who is blind using speech and braille in combination).

• The goal is to maximize the functional print and/or braille reading, writing, and/or communication rate.

• Reading paper materials (print or braille) may be different from reading electronically (using a computer monitor, CCTV, speech output, digital recordings, or refreshable braille).

• Ergonomics is important for all students at all grades with all equipment and materials. This is dependent on the student’s vision needs, e.g. keyboard location, monitor placement.

• Learning and using AT is a developmental process. If a student’s communicative or sensory functioning (e.g. hearing, vision, and/or tactual skills) change, a new technology evaluation is needed.

• Time and instruction is needed for learning new sensory, learning media, and AT/communication skills.

• A student with a visual impairment must have equal access to a reading and writing system, which is equivalent to their typical peers.

• A student with a visual impairment must have access to AT to participate in all areas of the expanded core curriculum.

Teacher Guidelines
• Teach needed technology skills before they are required. Thus, the student can then focus on regular classroom instruction rather than simultaneously learning the curriculum and the new AT skills. Teach the students how to maintain and care for their AT. Teach to the hierarchy of skills necessary for mastery of the technology tool.

• Technology training for teachers make students better users and maximizes the impact of monies expended. Keep teacher skills up to date. Training includes allowing teachers to spend scheduled time with a manual and equipment to develop skills and lessons.

• In order to access vendor tech support, a teacher may need a phone (long distance) near the AT device if there is no cell phone availability.

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Collaboration between vision/AT teacher, computer teacher, and computer maintenance professionals helps ensure a functional/seamless assistive/regular technology environment.

**Equipment**
- Ensure AT is compatible with existing equipment or newly installed/upgraded application software.
- Technology changes as a student moves to different schools at different grades. Planning is essential to fit AT into the next technological environment (hardware, software, operating system, network, etc.).

**Assistive Technology Definitions**
Effective AT solutions for individual students can cover a continuum of low to high AT. The terms defined in this section are included to inform the reader of terminology that may not be familiar. Therefore the terms included here are not meant to limit what is considered AT. As stated at the beginning of this chapter, student needs must always be considered in AT decisions.

- **Refreshable Braille Display** - provide tactile output of information presented on the computer screen. Unlike conventional braille, which is permanently embossed onto paper, refreshable braille displays are mechanical in nature and lift small, rounded plastic pins as need to form braille characters. The displays contain 20, 40, or 80 braille cells, after the line is read, the user can "refresh" the display to read the next line.
- **Scanners** - a device that converts an image from a printed page to a computer file. Optical-character-recognition (OCR) software makes the resulting computer file capable of being edited.
- **Screen Magnification** - software that focuses on a single portion (1/4, 1/9, 1/16, etc.) of the screen and enlarges it to fill the screen.
- **Adaptive Keyboard** - offer a variety of ways to provide input into a computer through various options in size, layout (i.e. alphabetical order), and complexity.
- **Augmentative Communication Device** - provide speech for people who are not able to communicate verbally. Device may talk, user indicates communication through the use of tactile symbols, auditory scanning, large print symbols, etc. Screen reader - software program that works in conjunction with a speech synthesizer to provide verbalization of everything on the screen including menus, text, and punctuation.

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● **Braille Embosser** - a braille printer that embosses computer-generated text as braille on paper.

● **Braille Translation Software** - translate text and formatting into appropriate braille characters and formatting.

● **Braille Writing Equipment** - used for creation of paper braille materials. Can be manual or electronic devices.

● **Portable Notetaker** – small portable units that employ either a braille or standard keyboard to allow the user to enter information. Text is stored in files that can be read and edited using the built-in speech synthesizer or braille display. File may be sent to a printer or braille embosser, or transferred to a computer.

● **Video Magnifier** - a device that magnifies a near and/or a distant image onto a monitor. The image can be magnified and the contrast can be increased, making print and graphics easier to see. Some devices may have the capabilities to read along and highlight print. These devices may be desktop or portable/handheld. This type of system should be evaluated as the needs of the student advances through their educational career.

**AT Resources**

http://www.tsbvi.edu/general/1076-principles-of-assistive-technology-for-students-with-visual-impairments

http://www.yourtechvision.com

http://tech.aph.org

http://www.perkinselearning.org/technology

http://www.applevis.com

http://www.afb.org/store/Pages/ShoppingCart/ProductDetails.aspx?ProductId=eiOS1iPads&ruling=Yes

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Chapter 9
BOOKS AND EDUCATIONAL MATERIALS

In order to provide students access to FAPE, a student with a visual impairment must have books and supplemental materials in a format (auditory, tactile, large print, braille) that meets the student’s needs. Ultimately, it is the responsibility of the student’s district to ensure the provision of equal access to educational materials, including technology, to access the curriculum. These materials must be provided to the student with a visual impairment at the same time they are provided to their typical peers. Books and educational instructional materials for a student with a visual impairment are unique and materials are not always readily available in the format that the student can access. Adapted books and materials can be acquired through a variety of resources including those listed below.

**Illinois Instructional Materials Center (IIMC)**

The IIMC is a resource center for students with visual impairments. It is funded by the Illinois State Board of Education as well as Federal Quota Funds. However, should these funds be unavailable, the district remains responsible. Items can only be obtained for a student who has an active IEP or IFSP addressing their visual impairment, by a licensed Teacher of the Visually Impaired (TVI), an Orientation and Mobility Specialist, and administrators. These professionals are identified by the IIMC through a designated process requiring IIMC approved administrative signature. Items are on loan at no cost to the school district for as long as the student benefits from their use and they have not accepted their high school diploma or certificate of completion.

These resources are intended for students ages birth through 21 who have a documented visual impairment as defined in Chapter 1 of these guidelines. The materials may include, but are not limited to braille books, large print books, tactile aids, software, equipment, consumables, etc. The timeline for acquisition of these materials necessitates planning ahead. Materials for the fall should be identified and ordered by early spring.

Materials available through the IIMC are funded through a combination of monies allocated by state and federal funding. State funds are specified for student use through ISBE while quota funds originate through federal legislation. Due to the nature of funding from ISBE to the IIMC, materials are only available to a student with a visual impairment who has an active IEP or IFSP. Additionally, federal quota funds through the IIMC are only available to a student who meet the definition of legal blindness.

(See [www.APH.org/federal-quota](http://www.APH.org/federal-quota) for more information on eligibility based on visual diagnosis.) This precludes access to these materials by students who receive services under

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a 504 unless they meet the visual criteria. http://chicagolighthouse.org/program/illinois-instructional-materials-center

**American Printing House for the Blind (APH)**

APH manufactures textbooks and other educational materials for students who are visually impaired. Textbooks and other materials may be purchased through IIMC’s federal quota funds, when available, or purchased directly by the district or consumers. APH produces books in several accessible formats, including: braille, audio, large print, and digital file. APH develops and manufactures hundreds of products, tools, and supplies that support students and adults who are visually impaired. Examples are: braille instructional programs, science teaching kits, talking computer software, low vision assessment kits, early childhood development materials, braille writing devices, digital recording equipment, CDs or DVDs on topics related to blindness. A list of all available accessible formats such as braille, tactile graphics, large print, e-text and audio can be found on the following websites: http://louis.aph.org/catalog/CategoryInfo.aspx?cid=152&master=AMP or http://louis.aph.org/catalog/CategoryInfo.aspx?cid=152

All products available through APH may be found at http://www.aph.org

**Learning Ally**

Learning Ally services are limited to individuals with documented learning disabilities, vision impairment, or physical disabilities that impede the ability to process standard print. This organization offers a large collection of human-narrated audio textbooks and literature as well as solutions, support and community for parents, teachers and students. The student must meet Learning Ally’s eligibility requirements. Eligibility criteria link: http://bit.ly/1XCesN4  This service requires a yearly subscription by the school district. Information regarding eligibility and subscriptions may be found on the Learning Ally website at www.learningally.org

**Bookshare**

Bookshare is an online library for people with documented print disabilities. Membership is free for U.S. students and schools who qualify. The individual or the organization servicing the student will be asked to provide Bookshare with a proof of disability. Individuals can sign up for membership and access the library on their own. Organizations that serve individuals with print disabilities can sign up and provide access to their students. A Bookshare membership offers unlimited access to accessible books, textbooks, newspapers, and magazines. These files are available in a Braille Ready Format-BRF or Daisy file for print. Apps will need to be used to access Bookshare content, e.g. Read2Go, Voice Dream
Reader, and Go Read for android users. Information regarding individual memberships, organizational memberships, and qualifications may be found on the Bookshare website at www.bookshare.org

National Library Service for the Blind and Physically Handicapped
NLS administers a free library program of braille and audio materials circulated to registered, eligible borrowers in the United States through a national network of cooperating libraries. The materials and free playback equipment needed to read talking books and magazines are sent to borrowers and returned to libraries by postage-free mail. The books and magazines are also available through the NLS Braille and Audio Reading Download (BARD) Online service. Other materials include music scores in braille and large print, reference publications, and other items. More information is available at https://www.loc.gov/nls

National Instructional Materials Accessibility Center (NIMAC)
NIMAC was created by IDEA 2004 to ensure timely access to textbooks for students with print impairments, grades K-12. It is a federally funded, online repository that makes National Instructional Materials Accessibility Standard (NIMAS) files available in specialized formats. NIMAS files can be converted to formats like Braille, digital text, etc. School districts and teachers access these files when using the IIMC, Bookshare or Learning Ally. “[S]tudents who receive services under Section 504 are not eligible to receive accessible materials produced from NIMAS files obtained through the NIMAC unless they are otherwise eligible to receive these materials under the IDEA” (DOE, OSERS, 2010, p. 6). Questions and answers on the national instructional materials accessibility standard (NIMAS). Information about the Illinois process and contacts for NIMAS/NIMAC is available at http://www.isbe.net/spec-ed/html/nimas_nimac.htm

District Provided Online Textbooks
Online textbooks provide ready access to a student with a visual impairment and may be used in place of or in conjunction with large print or braille textbooks. A student may choose to use screen reading software to access the online text. In addition, it is important to address the access to graphics, maps, etc. when using online textbooks. Visual graphics provide valuable information that may not be accessible to a student with a visual impairment and will need to be adapted. These accessible materials require an adequate amount of time to acquire and/or prepare. Sometimes these graphics can be obtained through IIMC. When not available, the content must be made available by the TVI.

Teacher Adapted Materials

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Materials not available through commercial sources like those listed above, may need to be modified or created for a student with a visual impairment. Materials must be provided to the TVI in advance with enough time to allow for the necessary modifications to be made for it to be accessible. This will require close collaboration between the classroom teacher and the TVI.

References
Chapter 10
CORTICAL VISUAL IMPAIRMENT

The area of Cortical Visual Impairment (CVI) is a relatively new area and our understanding in both the medical and education field is constantly developing. This chapter is representative of the information that is currently available related to CVI, but will need continual review. Cerebral Visual Impairment is not addressed in this chapter, as this diagnosis is evolving along with our understanding of implications for educational services to best meet the needs of the student.

Introduction
This is a condition in which the brain does not process visual information appropriately. This can be due to trauma or malformation of brain structures. CVI qualifies as a diagnosed visual impairment. As a result, a functional vision assessment may be completed and eligibility must be determined based on adverse effect and educational need. CVI typically falls within the purview of services provided by a Teacher for the Visually Impaired (TVI).

It is important to assure that services are in place to adequately address the unique needs of the student with CVI who may initially appear blind. Unlike students with an ocular impairment, visual functioning may improve through intervention. These students often benefit greatly from environmental and educational adaptations. All services, including those from other professionals, must be adapted to meet the needs of their unique visual processing which are indicative of a CVI. It is essential that a TVI is involved in team decisions and planning related to how services are provided by the educational staff addressing student needs.

Role of the IEP Team
The Teacher for the Visually Impaired (TVI) typically begins with a review of the medical history relevant to cortical visual impairment (e.g. ophthalmology, neurology). When appropriate, a TVI completes a functional visual assessment (FVA) for the purposes of learning 1) how the students uses his or her vision and 2) what environmental factors and supports are most helpful for the student.

The visual abilities of students with CVI vary greatly from student to student. An FVA should include those components typical for all students with a visual impairment as appropriate (see chapter 2). In addition, tools specifically designed for those with CVI should be incorporated (e.g. Roman-Lantzy CVI Range). A comprehensive FVA will provide in-depth information that can inform services as provided by the entire educational team. The results

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can then be used to determine classroom modifications, guide ongoing programming related to visual needs, and show progress in visual efficiency over time. For further information see http://www.tsbvi.edu/cvi-exercise/cvi-intro

**Role of the Educational Team**

It is critical for the educational staff to be in-serviced on CVI and its impact on functioning in all aspects of life. This training needs to be done early in the student’s classroom placement and continually throughout the year. If a student changes educational settings, it is imperative that this training is repeated for all individuals working with the student. This teaming is crucial for the educational success of a student with CVI.

The student’s engagement and success is highly dependent on the team providing embedded strategies throughout the school day and across all environments. (See example chart, Embedding Strategies in a Student’s Day at the end of this chapter.) Such strategies provide the student access to the curriculum as is required by mandates within IDEA to meet FAPE.

The TVI needs to be part of the team that determines the implementation of a new strategy that is visual in nature (e.g. PECS, assistive technology). Visual needs must be considered and adaptations made to meet the student’s needs.

**Determining Appropriate Amounts and Levels Of Service**

When determining the amount of time that a TVI should plan to work with a student with CVI and the supporting classroom personnel/educational team, several factors must be considered.

Direct service allows the TVI to
- use diagnostic teaching to continually assess and refine strategies and environmental supports for students and
- model techniques and strategies for staff, peers, and/or parents.

Consultative services provide coaching for staff members who
- integrate strategies into the student’s daily routines
- have built a rapport with the student,
- and are trained to take data on student visual behavior.

It should be noted young students and students that acquire CVI through injury or illness often benefit from intensive services. In these cases, the intervention strategies may need to be applied at higher level of intervention throughout the day. Diagnostic assessment will be used to determine when ongoing intensity and/or need for training in compensatory strategies.

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Considerations to Help Make the Education Environment Successful

While the educational team works to help students achieve goals as set forth in the IEP document, the TVI must work with the team to discover necessary adaptations to help the student engage with these efforts. While all students are different, some basic strategies that are often important to consider when working with students with CVI might include:

● Vision often functions as a secondary sense. This will impact whether a student focuses on objects when other senses are engaged.

● Most people use vision as their primary source for taking in information. For students with CVI, auditory input becomes the preferred mode of sensory input. For some students, if auditory stimulation occurs simultaneously with visual input, (i.e. alongside music or talking) the student’s performance may be compromised. Signs of this may be closing their eyes, shutting down completely, or attending only to the auditory stimuli.

● Motor performance paired with visual attention is often extremely difficult for students with CVI. To increase visual attentiveness, it is crucial to reduce motor demands. i.e. looking and reaching may need to be taught in isolation. Head, trunk, or limb support may improve a student’s visual performance.

● Because CVI affects the ability to understand visual information, students with CVI work best with repetition of the same instructional strategy, materials, and colors. Introducing new items often increases anxiety and decreases performance.

● CVI affects a student’s ability to make sense of their visual environment. For that reason, they have difficulty interpreting complex visual stimuli such as multi-colored objects, busy backgrounds, and low contrast. Those working with students should consider the environment and simplify visual information to enhance processing, i.e. presenting single colored objects on a contrasting solid background will drastically improve performance.

● Students with CVI often require more time to respond to a visual stimulus. This is often referred to as “visual latency”. Those working with students who have CVI should anticipate this need and provide calm and quiet wait-time giving the students time to respond.

This is only a sampling of some adaptations that a teacher for the visually impaired may suggest. It is extremely important that needed accommodations are included across the student’s curriculum. To ensure this happens, it is beneficial to use a team approach when planning for the students.

References And Resource Books (also listed in the reference and resource section)


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Websites
http://www.tsbvi.edu/seehear/fall98/cortical.htm  Fact sheet related to cortical visual impairment including myths and teaching strategies.
http://littlebearsees.org  Website oriented to parent education and resources. Houses a description of CVI as well as offering products such as apps for students with CVI. A resource tab provides links to many helpful websites.
http://strategytosee.com  Website dedicated CVI. Includes an in-depth discussion of the CVI characteristics.
http://www.tsbvi.edu/cvi-exercise/cvi-into/3893-cortical-intro  This site offers a definition of CVI with visuals to help describe the impact on brain structures.
http://lburkhart.com/handcvi.htm
http://cviteacher.wordpress.com  Site intended for teachers to share strategies and ideas related to working with students with CVI.
http://www.pinterest.com/holly3028/school-cvi/  Pinterest page by a teacher of students with CVI

Professional Development
http://wvde.state.wv.us/osp/vi/cvi/  Training series with helpful videos and practical ideas.
http://perkins.org/resources/webinars/  Check in for new webinars added periodically.

(See Next Page for Embedding Strategies Chart)
## Embedding CVI Strategies in a Student’s Daily Routine

<table>
<thead>
<tr>
<th>Objective</th>
<th>Switch Talk</th>
<th>Calendar</th>
<th>Mobile Prone/iPad</th>
<th>Free Time</th>
<th>Adapted Swing</th>
<th>Sensory Room</th>
<th>Get Ready for Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Use red switch on black background</td>
<td>iBabySee Or Ruby App</td>
<td></td>
<td>Position Fully supported gaze at lightbox</td>
<td></td>
<td></td>
<td>Single Red or Silver Object</td>
</tr>
<tr>
<td>Movement</td>
<td></td>
<td></td>
<td></td>
<td>Swing to and from 8” circle</td>
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<tr>
<td>Visual Latency</td>
<td></td>
<td></td>
<td></td>
<td>Wait Time</td>
<td></td>
<td></td>
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<tr>
<td>Visual fields</td>
<td></td>
<td></td>
<td></td>
<td>Alternate standing to left and right of student.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Complexity</td>
<td>Block out visual clutter</td>
<td></td>
<td></td>
<td>No Sound</td>
<td></td>
<td></td>
<td>One Object</td>
</tr>
<tr>
<td>Light gaze</td>
<td></td>
<td></td>
<td></td>
<td>Face away from lights/windows</td>
<td></td>
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<td></td>
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<tr>
<td>Distance Viewing</td>
<td>Tactile Objects</td>
<td></td>
<td></td>
<td>Turn Overhead lights off</td>
<td></td>
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<tr>
<td>Visual Reflex</td>
<td></td>
<td></td>
<td></td>
<td>Touch red rope lights to bridge of nose</td>
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<tr>
<td>Visual Novelty</td>
<td></td>
<td></td>
<td></td>
<td>Preferred items</td>
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<tr>
<td>Visually Guided Reach</td>
<td>Hand under hand to touch switch</td>
<td></td>
<td></td>
<td>Hand under Hand touch silver pom-pom</td>
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</tr>
</tbody>
</table>

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CHAPTER 12
DEAF BLIND

ISBE guidelines state that if a student who has multiple disabilities and is also diagnosed as visually impaired, deaf or hearing impaired, and/or deaf blind, the sensory impairment must be stated as the primary, secondary, or tertiary impairment. The sensory impairment must be separate from the multiple disability label. (A. Richards, ISBE, personal communication, June 16 2016).

A student with deaf-blindness is entitled to the same rights and same opportunities as all other students. Information in other chapters of this guide may be applicable for students with deaf-blindness, even if not discussed in this chapter. Modifications should be made for access due to student disability and the needs generated by that disability.

Effective teaming, which would include the parents, is critical to both assessment and programming. Ideally, the teacher of the visually impaired (TVI), the teacher of the deaf and hard of hearing (TDHH) and the teacher of the deaf-blind (TDB) or deaf-blind specialist e.g. Project Reach, will work collaboratively to support the student, family and educational team. Administrators will provide the necessary support to ensure that this communication, collaboration and training will occur.

Together, the TVI and TDHH will assess the impact of the visual impairment on visual language systems (ASL, cued speech, speech reading). They will also need to determine if and when tactile forms of manual communication, such as tracking and tactile sign, should be used (during dark assemblies, after a winter evening basketball game) and develop a plan to transition to more tactile modes of communication if the student’s vision changes over time. The TVI may play various roles for a student with deaf-blindness. The TVI will have information and techniques to offer fellow team members, especially in the role of consultant and trainer to other services providers (e.g. teachers, therapists, instructional aides, deaf-blind interveners). The TVI can provide direct instruction to the student, conduct appropriate vision assessments, and help other team members understand how a student’s visual impairment can impact language and academic access, concept development, and social awareness. The TVI can also give suggestions for adaptation of materials, use of specialized equipment, and train other staff in order to support the student in the use of his/her vision throughout the school day.

Assessment
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Comprehensive and appropriate assessment plays a critical role in the determination of educational programming for students with deaf-blindness. All current and pertinent information from relevant sources should be reviewed prior to the assessment. Such sources can include parents, teachers, therapists, doctors, audiologists, etc. Observation of the student prior to assessment is also important to determine appropriate tools, approaches, relevant tasks, and environments. The use of sign language interpreters, as appropriate, greatly facilitates the information gathered by optometrists and/or ophthalmologists. Input from a TVI, with help from the educational team, may be of great assistance in planning/completing the clinical assessment, especially if the student with deaf-blindness has additional disabilities.

For a student with deaf-blindness and residual vision, assessments such as a functional vision assessment or learning media assessment should be considered as addressed in Chapter 2, “Identification and Visual Evaluations” In addition, if the student has additional disabilities, the considerations addressed in Chapter 6, “Multiple Disabilities with a Visual Impairment”, will be relevant.

The assessment approach will necessarily be eclectic, choosing appropriate procedures, activities and materials from a variety of relevant formal and informal techniques and instruments, as well as from the student’s daily repertoire of tasks and environments. Upon completion of the assessment, educational goals and strategies will be determined. Assessment should be an ongoing dynamic process insuring that the student’s progress, changing needs, environmental variables, etc. will lead to appropriate modifications in his/her educational program aligned with best practices in progress monitoring.

**Programming Priorities**

A student with deaf-blindness can be educated in a variety of settings. Whatever the setting, attention must be given to ensuring the student has access to the curriculum, the environment, and peers/social experiences. This can be accomplished a number of ways, and often varies depending on the setting.

As a team, it is important to consider strategies that will enable successful access. The common characteristic among all persons with deaf-blindness is that they have difficulty gathering information. No matter their cognitive, physical, and sensory functioning level, a person with deaf-blindness does not benefit from incidental learning. This makes concept development, building the foundations for language (both auditory and visual) and understanding social cues extremely challenging.
To understand and meet the many and varied needs of the student with deaf-blindness, it is essential that all teachers, therapists, parents, and private providers must work together. Ample time for communication among team members, including the TVI, is critical and must be provided. Programming must ensure that all areas of the student’s needs are being addressed. These programming priorities include the following:

- **Deaf-Blind Intervention** – A TVI may be responsible for directing and supporting a student’s deaf-blind intervener. The national definition for intervention notes that “…intervener services are provided by an individual, typically a paraeducator, who has received specialized training in deaf-blindness and the process of intervention. An intervener provides consistent one-to-one support to a student who is deaf-blind (age 3 through 21) throughout the instructional day provide access to information and communication and facilitate the development of social and emotional well-being for children who are deaf-blind” (National Center on Deaf-Blindness, p. 1, 2013). Interveners become the eyes and ears for a student, and when trained well, do not promote dependence. Instead, a well-trained intervener
  - provides consistent access to instruction and environmental information that is usually gained by typical students through vision and hearing, but that is unavailable or incomplete to an individual who is deaf-blind;
  - provides access to and/or assist in the development and use of receptive and expressive communication skills;
  - facilitates the development and maintenance of trusting, interactive relationships that promote social and emotional well-being; and,
  - provides support to help a student form relationships with others and increase social connections and participation in activities (National Center on Deaf-Blindness).

- **Communication/Language Systems** – Students with deaf-blindness use a wide variety of communication/language methods and tools, and may be anywhere along the communication spectrum from pre-intentional to full language users. The student’s placement may, but is not required to, align to his or her communication or language system (e.g. a student using ASL does not necessarily need to be placed in a self-contained program for students who are deaf and hard of hearing).

- **Collaborative Teaching** – If the student with deaf-blindness has multiple professionals on his or her team, opportunities for specialists to work together are essential. Orientation and mobility specialists need the facilitation of any assigned interpreters or interveners, and need the information from teachers of the deaf/hard-of-hearing (TDHHs). TVIs will also need the assistance of any assigned interpreters and interveners (Clyne, 2015; Kennedy, 2015). When TVIs provide and demonstrate the skills within the classroom
(rather than using a pull-out model), they can collaborate with other staff. In addition, when the student receives educational vision services within the classroom, the instructional strategies can more easily be replicated in all aspects of the student’s day.

- **Orientation and Mobility** (O&M) – If the student uses an interpreter, lessons must often be paced so that communication, demonstration, instruction and movement occur sequentially rather than simultaneously. This is especially true for students who use tactile sign or watch sign at distance (due to tunnel vision).

- **Social Interaction Skills** – Students with deaf-blindness often miss social cues. Direct instruction in this area is crucial (Miles & Riggio, 1999).

- **Transition** – A student with deaf-blindness requires a highly planned and structured transition to adulthood, whether the goals include volunteering, competitive employment, vocational training, or college. Fifth-year programs, such as those available at Illinois School for the Visually Impaired/Illinois School for the Deaf (ISVI/ISD), are often appropriate for students with deaf-blindness who require direct teaching of daily living, transportation, and social skills needed in university/work environments. National programs like Helen Keller National Center may be considered as a summer program, prior to or after graduation. As part of a transition plan, schools might consider informing families and students of the after-graduation services available at Illinois Center for Rehabilitation and Education-Wood (ICRE-Wood) through the Illinois Department of Human Services.

**Strategies For Programming Priorities**

- **Multisensory Approach** – Many students with deaf-blindness benefit from a multisensory approach to instruction. Providing information through more than one sensory channel – either simultaneously or in a deliberate sequence – can help to fill in the gaps left by inadequate visual and auditory information. The Learning Media Assessment (Chapter 2) will be helpful in determining whether vision, hearing, or touch may provide the most information for a student. However, smell, taste, proprioception and vestibular inputs also offer valuable information for the student with deaf-blindness.

- **Low Vision Accommodations** – It is critical to help the student with low vision maximize his/her visual functioning through various means. This may include the use of varied adaptive aids and equipment, placement of materials, and positioning if the student has additional physical needs. Of special concern is the impact of both acuity and field loss on the reception of visual sign language. The TVI is instrumental in helping teachers of the deaf/hard-of-hearing, interpreters, interveners, and others modify the presentation of sign language so that the student with deaf-blindness can perceive all of the signs and

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additional information that may be delivered within the face and body during ASL or speech reading. Download the corresponding manual (The Assessment of Deafblind Access to Manual Language Systems) using the link found in the Appendix: Web Links and Resources.

- **Auditory Skills** – Students with deaf-blindness who use hearing aids or cochlear implants may undergo a period of aural habilitation. The TVI may be needed to help modify the visual components of the standard listening curricula; help determine visual or tactile landmarks that would be relevant when identifying or recognizing environmental sounds and cues (especially as they relate to mobility and safety); and helping other team members consider other sensory factors (tactile) that might impact the student’s synthesis of auditory information in various environments. If the student has difficulty understanding electronic speech, the TVI can help the team consider other tools that use natural speech or make a transition from listening to speech to receptive braille on a refreshable braille device.

- **Tactile Skills** – The TVI is a critical team member to provide instruction in effective skills of systematic searching, the ability to tactually identify objects, locations and people (as appropriate), and to use objects functionally. In addition, the IEP process must include a discussion in respect to the appropriateness of braille instruction. If the student’s vision and/or hearing changes or fluctuates, decisions must be made regarding transitions from listening and print to sign and/or braille.

- **Technology Options** - The options to support the student should also be explored with the team. The TVI will have a valuable perspective to share with the AT team, especially in regard to visual and tactile component of equipment being considered. In addition, schools should inform families of the FCC’s National Deaf-Blind Equipment Distribution Program (NDBEDP, also called ICanConnect) program. This provides equipment needed to make telecommunications, advanced communications and the Internet accessible to Americans with deaf-blindness who meet income requirements. Installation, training and other technical support, including individual assessments of each consumer’s specific accessibility needs, are also available. Ongoing service fees are NOT covered (Federal Communications Commission, 2015).
WEB LINKS AND RESOURCES

General Resources:
American Foundation for the Blind - www.afb.org
American Printing House for the Blind - www.aph.org
Family Connect Website: http://bit.ly/1gFlBdW  For parents of children with visual impairment
IDEA partnerships - www.ideapolicy.org
Texas School for the Blind and Visually Impaired - www.tsbvi.edu

Assistive Technology Resources:
eLearning Unit for iPads in the classroom: http://bit.ly/21cqc8r
Technology Website from Texas School for the Blind and Visually Impaired
http://www.tsbvi.edu/general/1076-principles-of-assistive-technology-for-students-with-visual-impairments
TechVision: http://www.yourtechvision.com
Technology Website from American Printing House for the Blind: http://tech.aph.org
Technology Website from Perkins School for the Blind: http://www.perkinselearning.org/technology
Website dedicated to technology for the blind: http://www.applevis.com
Canadian website with lesson plans, resources: http://www.setbc.org

Educational Material Resources:
Bookshare www.bookshare.org
Criteria for materials from Illinois Instructional Materials Center
http://chicagolighthouse.org/program/illinois-instructional-materials-center
Eligibility for access to quota funds www.APH.org/federal-quota
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National Library Service https://www.loc.gov/nls
More information on accommodations and modifications: http://bit.ly/1pv1a8R

Cortical Visual Impairment:
Information on Cortical Visual Impairment http://www.tsbvi.edu/cvi-exercise/cvi-intro
Fact Sheet: http://www.tsbvi.edu/seehear/fall98/cortical.htm
In-depth discussion of the CVI characteristics http://strategytosee.com
CVI visuals to help describe the impact on brain structures
Website dedicated to CVI with a wealth of resources http://www.aph.org/cvi/
Information on developing skills http://lburkhart.com/handcv.htm
Teaching strategies for CVI: cviteacher.wordpress.com
Adapting literacy for CVI: http://www.pathstoliteracy.org/cvi-and-adaptations-literacy
Pinterest Pages for CVI: http://www.pinterest.com/holly3028/school-cvi/
Christine Roman Lantzy eLearning series from American Foundation for the Blind
      http://www.afb.org/store/Pages/ShoppingCart/ProductDetails.aspx?ProductId=eCVIfoc
      usSERIES&ruling=No
Training Series on CVI: http://wvde.state.wv.us/osp/vi/cvi/
Webinars added periodically: http://perkins.org/resources/webinars/

Deaf Blind:
The Assessment of Deafblind Access to Manual Language Systems ADAMLS is one tool
to help with this process http://documents.nationaldb.org/products/ADAMLS.pdf
FCC’s National Deaf-Blind Equipment Distribution Program (NDBEDP, also called
ICanConnect) program https://www.fcc.gov/general/national-deaf-blind-equipment-
distribution-program

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IVLC website: https://sites.google.com/site/ivlc20200/ This website contains reference documents that are from OSEP, ISBE, IVLC and AOA on pertinent topics regarding a student with a visual impairment.

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