Educational Accommodations for Deaf/Blind Students

Do you hear what I see?

AN OVERVIEW OF THE IMPLICATIONS AND ACCOMMODATIONS OF DUAL VISION AND HEARING IMPAIRMENTS IN THE CLASSROOM.

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- Identification of students with vision/hearing impairment
- Sharing services for Evaluations, Staff Inservice, and devices
- Sharing knowledge to accommodate the student appropriately
Syndromes Associated with Combined Vision and Hearing Loss
Cytomegalovirus (CMV)

- Sensorineural hearing loss
- Vision loss is related to scarring of the choroid (the dark brown vascular coat of the eye between the sclera and retina)
- Symptoms and severity vary greatly among individuals
Down Syndrome

- Hearing loss can be sensorineural, conductive or mixed
- Most common vision problems are myopia and "Brushfield" spots (gray or pale yellow spots at the periphery of the iris)
Kabuki

- rapid, involuntary eye movements (nystagmus)
- eyes that do not look in the same direction (strabismus)
- blue sclerae
- coloboma
- ptosis
- microphthalmia

- Difficulty tracking and focusing
- Difficulty tracking and focusing
- No visual effect
- Problems with glare, acuity, and visual field
- May impact visual field
- Farsightedness and sensitivity to glare
CHARGE - Coloboma

Coloboma – a cleft in the eye; congenital; may affect part of the eye; may affect one or both eyes

- Iris – light enters
- Lens – focuses light on the retina
- Retinal – turns light into electrical signals
- Optic Nerve – sends electric signals to the brain
Usher’s – Retinitis Pigmentosa

Retinitis Pigmentosa – RP – progressive degeneration of retina which causes the rods and cones to die

- Retina – turns light into electrical signals
- Rods – 150 million in the retina which receives low light
- Cones – in retina; provides sharp visual acuity and color discrimination
Retinitis Pigmentosa

Normal Eye Anatomy

- Cornea
- Iris
- Lens
- Pupil
- Optic Nerve
- Macula
- Fovea

Retinitis Pigmentosa

The retina has pigment deposits known as "bone spicules."
This is an example of the visual effects of Retinitis Pigmentosa.
Other diagnoses that can have the dual impairments:

- Duane Syndrome
- Norrie’s Syndrome
- Trisomy 13
- Alport Syndrome
- Leber’s Syndrome
THE EYE

- **Anterior segment**
  - Cornea
  - Iris/pupil
  - Lens

- **Posterior segment**
  - Ciliary body
  - Vitreous
  - Retina: rods & cones
    - Macula
  - Retinal vasculature
  - Optic nerve head
Low Vision is the insufficient vision to be able to do a desired task.

Low vision children have a visual disability, but are able to use their vision for functional purposes.
Specific Eye Conditions
Coloboma

- Light scatter/light sensitivity
- Glare
- Central field decreased
- Decreased visual acuity
- Slow dark-adaptation

- High contrast
- Proper positioning of materials
- Avoid light directed into eye
- Glasses or Specialized iris-occluding contact lenses
- Filters
Nystagmus

- Nystagmus – involuntary movement of the eyes - difficulty tracking, focusing, and maintaining gaze
  - Tracking – use typoscope or line guide; use a clear font style; increase font size and vertical spacing; reduce need to move from one item to another; will require additional time to access and process visual information
  - Focusing – enlarge, magnify, increase contrast, use a clear font, increase; reduce need to move from one item to another
  - Maintain gaze – student will need to find focus (null point) or not be expected to maintain gaze; will require additional time
Strabismus

- Defect in the muscles of the eye so that the eyes do not align; the brain cannot process what is being viewed so it suppresses one eye resulting in reduced acuity or lazy eye; impacts binocular vision
  - Lazy Eye – patching, vision therapy to increase acuity
  - Alignment of eyes – surgery
  - Classroom – strategies for tracking and focusing on the nystagmus slide
Ptosis

- Drooping of upper eyelid
  - Interferes with visual field - surgery
Microphthalmia

- Small eyeballs; often associated with other conditions such as cataract, glaucoma, etc
  - High hyperopia – farsightedness – accommodate for near viewing and for glare
Accommodations/Adaptations

- Students with visual impairments will use a combination of strategies to access visual information. Some will be appropriate for some near activities and conditions and others will be necessary for different conditions.
Four Elements of Vision

- Environment
- Magnification
- Contrast
- Lighting
Environment is the circumstances or conditions by which we are surrounded. It is the arrangement of our physical space within a given area. Modifying the environment can have a dramatic influence on how efficiently one uses their vision.
Factors Effecting the Environment

- Eye Conditions
- Eye Fatigue
- Fluctuating Vision
Adaptations to the Environment

- Some children need to sit closer to view specific activities and others will need to sit further away to increase their visual field.
- Organize the room so the child will predict where things will be located.
- Use low shine wax on floors.
Mirrors should be placed where they will not create the illusion of another room or another person or reflect other lighting.

To avoid a half-open doors and safety hazard, close or open doors completely.

A glass door can be marked with decals at eye level.

Familiarization with the environment can ease awkwardness and help to anticipate distances and heights.
Use of recommended devices such as glasses or telescopes will help to enhance their visual performance.
Magnification

- Enlarge an object
- Bring the object closer to view
- Use a magnifier or telescope
- Projection of image on a screen increasing it's size
CAUTION

Bigger is not always better!
The Mystery
Everyone turned to stare as a black hooded figure whizzed by on a skateboard.
It was a mystery because no one knew who the talented person was.
Ken saw the skateboarder slide down the library railing and disappear into the alley.

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Contrast

Contrast is about how much something appears to stand out from its background.

It’s harder to see things that are similar in color to the background.
Contrast for Print

• Use a light uncluttered background and dark print.

• Use a clear font, such as Arial. Readability and point size differs among typefaces. This is Times New Roman.

• APH Large print is 18point print. This equals 2.5mm letter size. An example of this size would be children’s books grades 1-3.
Examples of Contrast

- This is an example of inappropriate contrast.
- This is somewhat better.
- This is even better.
- And this is the best for this background.

- Light (white or light yellow) letters on a dark (black or blue) background are more readable than dark letters on a light background.
- Use a colored cloth, a colored tray or a place mat to define area
- Avoid standing in front of a busy background or wearing busy patterns
• Use uncluttered walls or information boards.

• Highlight handrails or edge of first and bottom step to indicate their presence.

• Tape or paint edges of work surfaces and shelves in a contrasting color to make edges easier to see.
For persons with low vision, the amount of lighting for comfortable viewing may be related to many individual factors, such as the extent and location of a visual impairment, the time of day, and/or personal preference.
Types of Light

Artificial / Incandescent or Fluorescent
- Direct or indirect
- Overhead or lamp
- Natural lighting from the sunlight through the windows
Glare

- Caused by bright light reflecting from shiny surfaces (such as highly polished floors, metal objects, mirrors, and tiled or enameled floor and walls)
- Caused by certain types of light entering the eye to “bounce around” rather than come into focus
Factors Effecting Light

- Eye condition
  - Photophobic
  - Visual field
  - Adaptation time-light to dark or dark to light
Adaptations for Light

- Use floor or desk lamps with adjustable arms for the student to be able to direct the lighting appropriately over materials.
- Dimmer switches and rheostats so that light can be adjusted to the appropriate level.
- Alternate rows of light so that the appropriate lighting is over the students work area.
Symptoms and Solutions

- Squinting
- Eyes moving
- Eyes not aligned
- Looking down when walking
- Eyes that don’t move together when following an object
- Crossed eyes, eyes that turn out or in, eyes that flutter from side to side or up and down, or eyes that do not seem to focus
- Eyes that bulge, dance, or bounce in rapid rhythmic movements
- Pupils that are unequal in size or that appear white instead of black
- Repeated shutting or covering of one eye (as noticed with Julian)
- Unusual degree of clumsiness, such as frequent bumping into things or knocking things over
- Frequent squinting, blinking, eye-rubbing, or face crunching, especially when there’s no bright light present
- Sitting too close to the TV or holding toys and books too close to the face
- Avoiding tasks and activities that require good vision

Solutions:

- Glasses; magnifiers
- Typoscopes
- Strabismus
- Field Restriction
- Coloboma or Blind Spot
- Julian
How many Deaf Blind Students do we service?

How many are we missing?

<table>
<thead>
<tr>
<th>Disability Category</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>2011-12</th>
<th>2012-13</th>
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<tbody>
<tr>
<td>Cognitive Disability (MR)</td>
<td>23,510</td>
<td>22,122</td>
<td>20,696</td>
<td>18,963</td>
<td>18,765</td>
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<td>Orthopedic Impairment</td>
<td>2,203</td>
<td>2,053</td>
<td>1,930</td>
<td>1,772</td>
<td>1,657</td>
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<td>Specific Learning Impairment</td>
<td>130,813</td>
<td>124,414</td>
<td>116,966</td>
<td>108,386</td>
<td>105,338</td>
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<td>Visual Impairment</td>
<td>1,199</td>
<td>1,185</td>
<td>1,189</td>
<td>1,176</td>
<td>1,175</td>
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<tr>
<td>Hearing Impairment</td>
<td>3,385</td>
<td>3,368</td>
<td>3,308</td>
<td>3,262</td>
<td>3,238</td>
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<tr>
<td>Deafness</td>
<td>707</td>
<td>667</td>
<td>667</td>
<td>599</td>
<td>621</td>
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<tr>
<td>Deaf-Blind</td>
<td>35</td>
<td>39</td>
<td>33</td>
<td>22</td>
<td>31</td>
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<td>Speech/Language</td>
<td>71,307</td>
<td>68,213</td>
<td>64,469</td>
<td>61,685</td>
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<td>Emotional Disturbance</td>
<td>24,969</td>
<td>23,876</td>
<td>22,152</td>
<td>20,747</td>
<td>20,205</td>
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<td>Other Health Impairment</td>
<td>26,219</td>
<td>26,556</td>
<td>27,045</td>
<td>28,081</td>
<td>29,477</td>
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<tr>
<td>Multiple Disabilities</td>
<td>1,827</td>
<td>2,014</td>
<td>2,139</td>
<td>2,288</td>
<td>2,423</td>
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<tr>
<td>Developmental Delay</td>
<td>17,719</td>
<td>22,044</td>
<td>25,081</td>
<td>27,246</td>
<td>29,890</td>
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<tr>
<td>Autism</td>
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<td>15,224</td>
<td>16,432</td>
<td>17,895</td>
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<td>Traumatic Brain Injury</td>
<td>804</td>
<td>758</td>
<td>723</td>
<td>722</td>
<td>733</td>
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<td>Total</td>
<td>318,461</td>
<td>312,533</td>
<td>302,830</td>
<td>292,844</td>
<td>292,492</td>
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</table>
What is the Definition of Deaf Blind

- **Deaf-Blindness**
- means concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational needs that they cannot be accommodated in special education programs solely for children with deafness or children with blindness.
What is the definition for Deafness

- **Deafness**
  - means a hearing impairment that is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification, that adversely affects a child's educational performance.

- **Hearing Impairments**
  - means an impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance but that is not included under the definition of deafness.
What are the definitions of visual impairment and blindness

- **Visual Impairment**
- means an impairment in vision that, even with correction, adversely affects a child's educational performance. The term includes both partial sight and blindness.
So, what does this mean for transitions?

- We need to make sure that we are involving the entire IEP team.
- We need to make sure that everyone understand how each area affects the other one and constantly keep tabs on which one or both that are impacting educational progress and look at them from both disciplines.
- As parents, you may need to be the “expert” in the room and educate each new member about the unique needs of your child.
When do “transitions” occur?

- We know plans are developed at 14 ½ but, they occur at each new “environment” each new person that joins and leaves the team.
- 0-3 to pre-school
- Pre-School to kindergarten
- Elementary to Middle School
- Middle School to High School
- High School to Career/College
- Daycares, sports, churches, YMCA’s, park departments camps etc...
What are some easy ways to keep track...

- Pamphlets
- Video/vlogs, blogs
- Pictello type Experience stories,
- Pictures with captions
- Smart devices can really revolutionize this for parents and caregivers
You can create a team like our in your own setting.....

- Be creative
- Use technology if everyone cannot meet easily
- Use Statewide resources:
  - ISRC
  - Chicago Lighthouse
  - Project Reach
  - ISBE
  - ISD/ISVI
  - HVEIO
How can we help YOU???

- Thanks for coming!
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