2020 GETCA
Challenges of a Visually Impaired Student

**Presenter:**
Richard Svekla
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The Edmonton RCSD vision team

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Lawana Titiryn
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Braille Transcriber:
Mona Luth
Getting to Know You

Note: Glasses are to be worn throughout entire activity!

- Each participant will be provided with a pair of simulation glasses/goggles.
- Getting to know you activity

All the cool kids are wearing them!
How did it go?
Vision Continuum

- **Total Blindness**
  - No Light Perception (NLP)
- **More severe visual impairment**
- **Legally Blind**
  - Alberta Ed. Code 46: Blindness - 20/200 or worse, or visual field reduced to 20° or less
- **Legally Blind**
  - Alberta Ed. Code 56: Mild-Moderate Visual Disability
- **Low Vision**
  - Alberta Ed. Code 56: Mild-Moderate Visual Disability
- **Mild-Moderate Vision Loss**
- **20/20**
- **20/70**
- **20/200**
- **20/400**
- **NLP**

The image includes an Eye Chart with letters and numbers, illustrating the vision continuum from 20/20 (normal vision) to NLP (No Light Perception).
Types of Vision Loss - **Acuity**

Distance Vision Normal

20/20

Distance Vision 6/12

20/40
Types of Vision Loss - **Acuity**

Distance vision 6/18

Distance Vision 6/24

20/60

20/80
Types of Vision Loss - Acuity

Distance Vision 6/36
20/120

Distance Vision 6/60
20/200
...Acuity

Photo courtesy of the Cao Thang International Eye Hospital
Types of Vision Loss - Visual Field
Peripheral
Types of Vision Loss - Visual Field

Central

Typical Vision

Central Loss
Types of Vision Loss - Visual Field
One Half & Blindspots
Types of Vision Loss - Alignment & Movement

https://youtu.be/phpe_RVGqcA Blackbyrd 0:30s
What is it like to be visually impaired???
Common Eye Conditions

- Albinism
- Aniridia
- Cortical Visual Impairment (CVI)
- Glaucoma
- Myopia/Hyperopia (Nearsighted/Farsighted)
- Nystagmus (jiggling of eyes)
- Optic Nerve Hypoplasia/Atrophy/Septo-Optic Dysplasia (SOD) (underdeveloped/injured/absent optic nerve)
- Retinal Detachments
- Retinitis Pigmentosa (RP)
- Retinopathy of Prematurity (ROP)
- Strabismus (misaligned/ “lazy eye” and eye movement difficulties)
Considerations for Low Vision

• No two individuals with the same eye condition will function visually in exactly the same way.

• Individuals with low vision will have fluctuations in visual functioning from day to day and situation to situation.

• Physical and mental health factors such as medications, seizure activity, fatigue, stress as well as environmental factors such as lighting, seating, contrast, etc. will affect an individual’s visual functioning.
80 – 85% of what people know is learned through vision.

Sensory modalities

- vision
- hearing
- touch/smell
It’s a Fan!

It’s a Spear!

It’s a Wall!

It’s a Rope!

It’s a Snake!

It’s a Tree!
Impact of Vision Loss on Learning

**Incidental Learning** – Much of what children who have sight learn is learned through watching, listening or just being in the situation or incidental learning.

Vision assists in interpreting sound and movement experiences, builds motivation and anticipation, and helps organize the world spatially so that sensory information makes sense.

Growing up with low vision or blindness puts a child at risk for delays in: the meaningful organization of environmental information, development of concepts and building up experiential and background knowledge.
Impact of Vision Loss on Learning

**Language** – Children with visual impairments can acquire language without serious developmental delays.

There has to be an explicit association between language and experiences. They have to experience the world.
Impact of Vision Loss on Learning

**Motor**

- Limited Visual Motivators = gross & fine motor and sensorimotor development.
- More anxious/reluctant to explore their environment.
- Early intervention with many types of movement opportunities and lots of repetition is critical.
- Early cane use or premobility aides encourages exploration & concept development.
Impact of Vision Loss on Learning

Social Skills

- Visual information plays an important role in the acquisition and refinement of skills that are critical for positive social interactions. Vision loss may impact:
  - interpretation of non-verbal gestures
  - eye contact
  - turn taking
  - conversational skills
We Retain:

❖ 10% of what we read
❖ 20% of what we hear
❖ 30% of what we see
❖ 50% of what we see and hear
❖ 70% of what we discuss
❖ 80% of what we experience
❖ 90% of what we teach to someone else. Edgar Dale
Educational Supports

- Environmental adaptations
- Material adaptations
- Accommodations
- Modifications
- Teaching strategies
Seating

• Optimal seating
• Consider student’s visual acuity
• Consider student’s field of vision
• Access to electrical outlets if needed
• Avoid glare
Lighting

• Do not face a window/have back to lighting

• Adjust lighting as per student needs

• Time needed to adjust to changes in lighting conditions
Lighting: Avoid Glare

Students with low vision are often sensitive to glare.
Contrast in Environment

• Use of coloured tape to mark steps, variations in elevation in school/playground.

• Physical Education:
  • Use bright coloured balls, birdies/shuttlecocks, pylons,
  • Mark the top of the volleyball net, court markings in the gym
  • Use pinnies for team member identification

• Use contrasting coloured cloth, a coloured tray or a placemat to define work areas
Contrast in Learning Materials

- Contrast is as important, if not more important than size of print
- **White on black** is sometimes preferred
  - new black felt pens and clean whiteboards & Smartboards
  - White or yellow paper has great contrast
- Plain Font: *Comic Sans, Arial, Verdana, or Tahoma*
- Spacing: 1.5 line spacing, expanded character spacing
- Bold font keyboards or stickers for keyboards.
Print Access

• Consider the appropriate print size that the student requires to access information
  ▪ 14 or 18 font is the “standard” size for large print

• Provide digital and audio text

• Provide simplified maps and diagrams

• Provide uncluttered print against a simple background with good contrast
General Teaching Strategies

- Direct instruction or structured learning opportunities to counter the limited access to incidental learning
- Keep using the words “look” and “see”
- Offer visual breaks for fatigue if needed
- Address students by name
- Use clear directional language instead of “over there”
- Extra time for exams and assignments (2-½ Xs for PATS and Diplomas)
- Equivalent expectations and consequences
General Teaching Strategies

Distance Tasks:

• Allow student to move within the class to see visuals (and take pictures with the iPad), or provide an individual copy
• Teachers read out loud as items are written on boards, charts, etc.
• Provide accessible resources, i.e., large print braille, electronic
• Encourage the use of assistive technology
• Connectivity of Smart Boards to iPads/laptops
Assistive Technology:

❖ 20/20 pens/bold black felts
❖ Bold lined writing paper and/or scribblers
❖ Highlighter pens
❖ Coloured glue sticks
❖ Flat non-roll pens/crayons/pencil crayons
❖ Reading windows/typoscope
Assistive Technology: Low Tech
What Teachers Need to Know

- Look at the person first, and the disability second
- Learners with vision loss deserve expectations
- Make connections, and ask questions
- Review the student’s eye report
- Braille means literacy
- Use multiple modes of communication
- Organization is critical.
Factors Affecting Visual Performance Include:

• Stamina.
• Fatigue.
• Lighting conditions.
• Size of print – Height, width, boldness, spacing between words & lines.
• Distance to print – near and distance.
• Clarity of print – contrast, size, and background colour and images.
Three Principals for teaching students with visual impairments:

1. Provide concrete experiences
   • real objects in all environments
   • scale models when real objects are unavailable
   • expand on concepts already learned

2. Provide unifying experiences
   • to gain a sense of totality & wholeness of objects and situations

3. Provide opportunities to learn by doing
   • Make everyday experiences and concepts accessible for children with vision loss.
   • Ensure that they build onto and connect concepts and experiences already learned.
Communication Tips

• Identify yourself

• Use your student’s name

• When talking in a group/classroom, address people by name

• Explain to your student what is going to happen

• Explain sudden noises

• Don’t shout, students who are blind or visually impaired are not deaf.

• Talk about what you are doing
Tips continued

• Tell your student where you are going, who is still with them and when you will be back.

• Provide clear instructions, don’t talk about “here” and “there”

• Speak directly to your student, not through another person

• It is okay to use words like “look” and “see” and refer to colour when talking to your student or in a class discussion
Tips Continued

• Allow for hands on experiences whenever possible. Do not force your student to touch new things if he/she is unsure about them.

• Don’t leave your student unless they know where he/she is

• If visual aids are being used in the classroom, supply verbal descriptions and tactile experiences
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Activity

In your grade 1 class of 27 for the 2019/20 school year, one of your students has a severe visual impairment.

You have a math activity that involves counting pictures in 10 rows and writing the appropriate number beside it.

A. How could this activity be adapted for a child who is low vision?

B. How could this activity be adapted for a child who is a tactile learner?

Pair and Share!
Activity 1

The Sense of Smell

How a visually impaired person uses smell:

● To help them know where they are
● What’s cooking for dinner?
● To help recognize a person by their perfume or cologne
● To know if food has gone bad
● To learn about what is going on around them (smell of cut grass, rain, flowers)
Activity 2

Orientation and Mobility

- 1931 the white cane became a symbol indicating that somebody was blind or visually impaired
- the white cane is designed to be used as a device to walk with and also to help identify visually impaired people
- it helps people to walk around safely
Activity 3

The Sense of Hearing

How a visually impaired person uses hearing:

- To listen to traffic and figure out when it is safe to cross a street
- To help them walk a straight line
- To figure out who or what is in a room
- To find open doorways or hallways
- To locate objects (trees, walls, posts) in their path
Activity 4

The Sense of Sight

How visually impaired people can use their remaining sight:

- To find objects (trees, walls, chairs)
- To read signs
- To see color
- To recognize people
Activity 5

Braille

- Braille was invented by Louis Braille
- Braille is a system of raised dots called a ‘cell’
- A braille ‘cell’ is a combination of 1 – 6 raised dots arranged like the 6 on a dice
- Each letter, word, punctuation, number or musical note can be made up using different combinations of these dots
- Grade I braille is learning each letter on it’s own
- Grade II braille is groups of dots to represent combinations of letters such as ‘ing’ in the word swimming.
- Braille is can be done on a brailler, a special computer laptop or typed onto a regular computer and printed with a special braille printer called an embosser
Activity 6

The Sense of Touch

How visually impaired people use touch:

- To look at objects
- To identify money
- To read Braille
- To find their clothes
- To get information about their surroundings by using a white cane (slopes in the sidewalk, grass, pavement)
- To help cook food; cooked chicken feels different than raw chicken
Activity 7

Deaf-Blindness

- Deaf-blindness is the combination of both hearing and vision impairments.
- People with deaf-blindness have different hearing and vision impairments. A person may be hard of hearing and totally blind, or profoundly deaf and partially sighted, or have complete loss of both hearing and vision.
- A person with deaf-blindness experiences the world through any vision or hearing they have and by using touch, smell and taste.
- Deafblind people communicate through various types of sign language that can be done in the hands of the deaf-blind person.
- Deaf-blind people travel around by using a person guide or some people use a guide dog along with sound devices.
Activity 8

Example for Descriptive Drawing

The following design is a sample that could be used for the descriptive drawing. Make your own design if you wish.
O&M Activity

Activity takes places in pairs.
1. Person 1 is blindfolded.
2. Person 2 is the human guide and will lead their partner safely around the room.
3. Switch roles.
Reflection Questions

1. How did you feel being blindfolded and how much confidence did you have in your guide?

2. Did you feel safe?

3. How confident were you in guiding?

4. Other take aways?
Safe and Practical Environment

To make your classroom a safe and practical working environment ensure:

• Room is free from excess clutter
• No obstacles that can hit the head or body
• All electrical cords, frayed carpet or loose tiles are taped or covered
• Chairs are tucked in
• Open or close doors fully
• Your student is aware of any changes