Chapter 12: Learners with Blindness or Low Vision
Important Terms

**legally blind** - visual acuity of 20/200 or less even with correction, like glasses, or has severely restricted peripheral vision (p. 332). Field of vision is no greater than 20 degree.

**low vision** *(partially sighted)* - visual acuity between 20/70 and 20/200 (p. 332). People can usually read print with help of magnification.

**braille** - system of raised dots by which people who are blind read with their fingertips (p. 333)
Fact

Blindness is primarily an adult disability, with fewer than .05% of students ages 6 to 17 identified as visually impaired.
Snellen Chart

Used to measure visual acuity, with rows of letters.

- Limitations
  - Vision can differ in natural settings
  - Only measures distant objects

- Functional Vision Assessment
  - Takes environment into account
    (pg. 335)

- Another Snellen Chart 'version' for young children shows shapes instead of letters; i.e., house, apple, heart.
Common Causes of Eye Problems

Myopia: nearsightedness
Hyperopia: farsightedness

Astigmatism: blurred vision

(pg. 336)
Glaucoma - A group of eye disease that damages the optic nerve, often occurs with no symptoms (nicknames 'sneak thief of sight), and is more frequent in older people and African Americans.

Cataracts - clouding of the lens of the eye that results in blurred vision. Surgery can usually correct the problem.
Diabetic Retinopathy- interference with the blood supply to the retina for diabetics.

Retinitis pigmentosa- hereditary condition resulting in degeneration of the retina. It can start in early infancy, early childhood, or teenage year. Can cause tunnel vision or night blindness. (p. 336-7)
Affecting Children:

Cortical visual impairment (CVI)- leading cause of visual impairment in children, results from damage to brain, avoidance of looking at new visual information, preference for near objects, nonpurposeful gazing, color preference, attraction to rapid movements, abnormal visual reflexes, etc.

Retinopathy of prematurity (ROP)- abnormal growth of blood vessels in eye then causes retina to detach, can result from factors related to being born prematurely

Optic nerve hypoplasia (ONH)- underdevelopment of optic nerve often associated with brain abnormalities, cause unknown (p. 338)
Strabismus- one or both eyes directs inward (crossed eyes), or outward, can result in permanent blindness, can be corrected with eye exercises or surgery.

Nystagmus- rapid involuntary movements of the eyes, results in dizziness and nausea, at times sign of brain malfunction or inner-ear problems.
Psychological and Behavioral Characteristics

- Lack of vision does not have a very significant effect on understanding and using language. Language is auditory more than visual.

- Does not result in lower intelligence.

- Infants and young children lag behind sighted peers because they rely more on touch, whereas sighted infants and young children rely so much on visual aids and cues.

- Teachers and parents must provide intensive instruction, including repetition, in order for the student to develop their conceptual abilities.

- Most are socially well adjusted, but can be difficult because:
  1) Interactions with the sighted based on visual cues (smiling).
  2) Society has discomfort with blindness. (p. 338-44)
"Nearly every time I smile, I am conscious of it...Why is this? It must because there is no reinforcement. There is no returning smile...Most smiling is responsive. You smile spontaneously when you receive a smile. For me it is like sending dead letters. Have they been received, acknowledged? Was I even smiling in the right direction?"
(Hull, 1997)
Orientation and mobility (O&M)- ability to sense where one is in relation to people, objects, and landmarks and to move through the environment

Cognitive mapping- map depicting general relation of various points in the environment

Doppler effect- helps people who are blind sense objects (obstacle sense). Much to sighted individuals speculation, obstacle sense is not a 6th sense. It's only the heightened ability to detect things around us.
Braille

Literary braille- used for most everyday situations

Nemeth Code- math and science symbols

Unified English Braille- combines codes into one

Perkins Brailler- 6 keys, 6 dots of the cell.

Slate and stylus

(p. 345)
Academic achievement

-Most professionals agree that direct comparisons for the academics of sighted students and those who are blind must be interpreted cautiously because the two groups must be tested under different conditions.

-A few studies that have been done have shown that low vision and blind children are sometimes behind their peers in academics. pg (340)
- Lack of sight can severely limit a person's learning because obtaining information is frequently visual in the classroom.

- Teachers must learn to modify their teachings to be sensorized for the blind student.

1. Braille
2. Use of remaining sight
3. Listening skills

(pg. 344)
Educational considerations

-Federal law requires that braille be available if any member of the IEP team thinks it necessary, including parents.

-Large print books are useful, although the need for storage space is a drawback.

-Emphasizing listening skills is important.

-Human guides can be helpful at times, but not a main means of mobility.  (pg 364)
THE BRAILLE ALPHABET

a b c d e f g h i j k l m

n o p q r s t u v w x y z

NUMBERS

# 0 1 2 3 4 5 6 7 8 9

Literary Code

Nemeth Code

# 0 1 2 3 4 5 6 7 8 9
Using remaining sight:
- large-print books
- magnifying devices
- many new technologies

Mobility Training:
- long cane
- guide dogs
- tactile maps

(p. 349-50)
Technology

Kurzweil 1000 - reads material on scanner with voice or puts it in braille

Braille notetakers

NFB-Newsline - access magazines and newspapers over telephone

Descriptive Video Service - narrated description of visual features on television

Screen Readers

Itinerant Teachers
Testing

- Professionals can assess academic outcomes using braille versions of standardized academic tests.

- Testing accommodations often include testing in braille, large-print tests, or an extended testing period for the student.

(pg 364)
Early Intervention

- Intensive intervention should begin as early as possible.

- Inclusive setting can be beneficial, but it is important that the teacher facilitate interactions between visually impaired students and sighted students.

- Important to involve parents.

- Authorities recommend that preschoolers be taught cane techniques. (pg. 364)
Most Importantly

...People who are blind can lead very independent lives!

-Erik Weihenmayer
-AJ Faxon Jr
-Stephen Kuusisto