Teaching children with multiple and visual disabilities

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1. History and trends in education for children with visual impairments and multiple disabilities

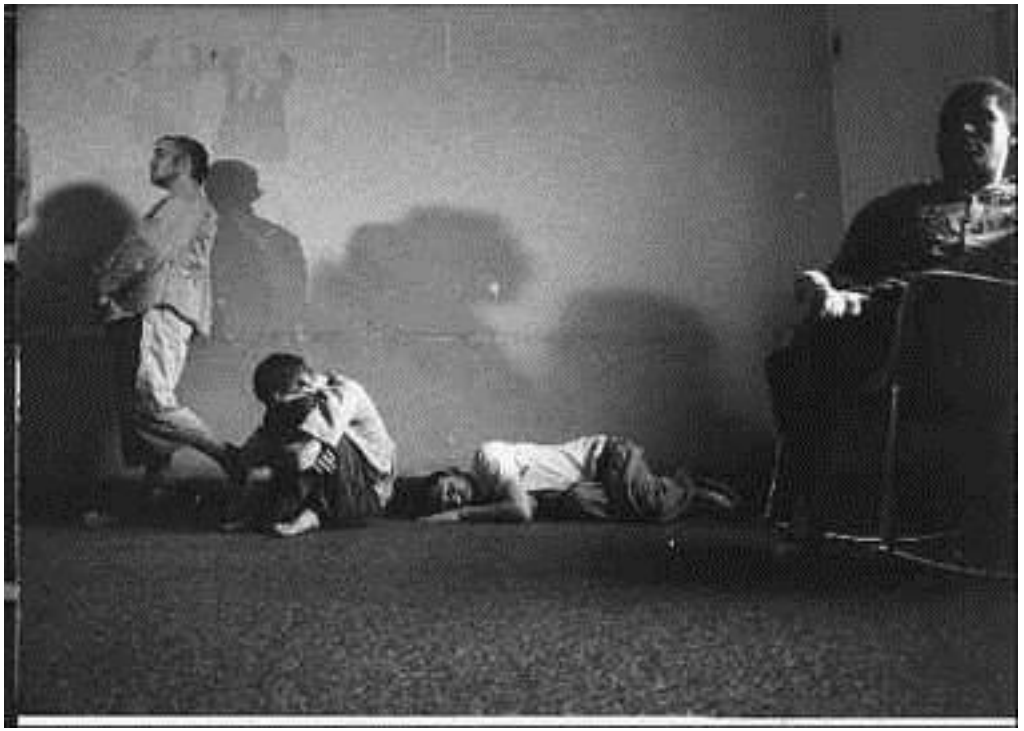
Before the 1960's, most students at schools for the blind had no disabilities except a visual impairment.

Midsummer Night's Dream, Overbrook, 1914 *(http://www.afb.org/Section.asp)*

Only intellectually capable students with deafblindness were educated at residential schools.

Deaf and Blind Students at Perkins School for the Blind, 1889 (Perkins School for the Blind)

Students with severe disabilities were often institutionalized or kept at home with no education.



Willowbrook, 1960's

Vision of students who were not in educational settings was rarely evaluated because

- accurate tests were unavailable.
- services in VI were not deemed appropriate if they could not speak, read, or write.

In 1975, The Education for all Handicapped Act was passed in the U.S.

- Students with severe disabilities began to receive educational services.
- More residential schools took on the role of serving MDVI students as VI students shifted to public schools.
- The population of VI students included more nonreaders and students whose goals were not academic.

Changing biological and medical factors increased the numbers of students with multiple disabilities.

Improved medical technology allowed more premature children and children with brain injuries to survive.

Conditions that affected only vision were modified by improved medical technology (ROP, cataracts).

Many TVIs needed to learn new skills.

51% of TVIs considered themselves unprepared to teach students with multiple disabilities

(Erin, Daugherty, Dignan, & Pearson, 1990).

Since the 1970's…
Educational trends provide new opportunities and create new challenges.

- Legal foundations
- Inclusion
- Active learning
- Functional learning
- Team services
- Technology

1. Legal foundations for special services

Advantages…

- Opportunities and access
- Public awareness
- Enforcement of rights

Limitations…

- Labels, paperwork and systems
- Professional advocacy

http://www.xtimeline.com/evt/view.aspx?id=74743

2. Inclusion with nondisabled peers

Advantages

- Role models
- Academic challenges
- Diverse experiences for peers

Challenges

- Adaptations
- Consistency and frequency of practice
- Individualization

3. Active learning….instruction that builds on student initiatives.

Dr. Jan van Dijk

https://www.drjanvandijk.org/

Lilli Nielsen

(Scottish Sensory Center, University of Edinburgh)

4. Team services

Advantages

- More experts
- Family participation
- Collaboration and mutual support

Challenges

- Communication time
- Risk of inconsistency

Australian women's swim team, 1919

http://sportsgirlsplay.com/vintage-sports-1919-australian-women-swim/

5. Functional learning

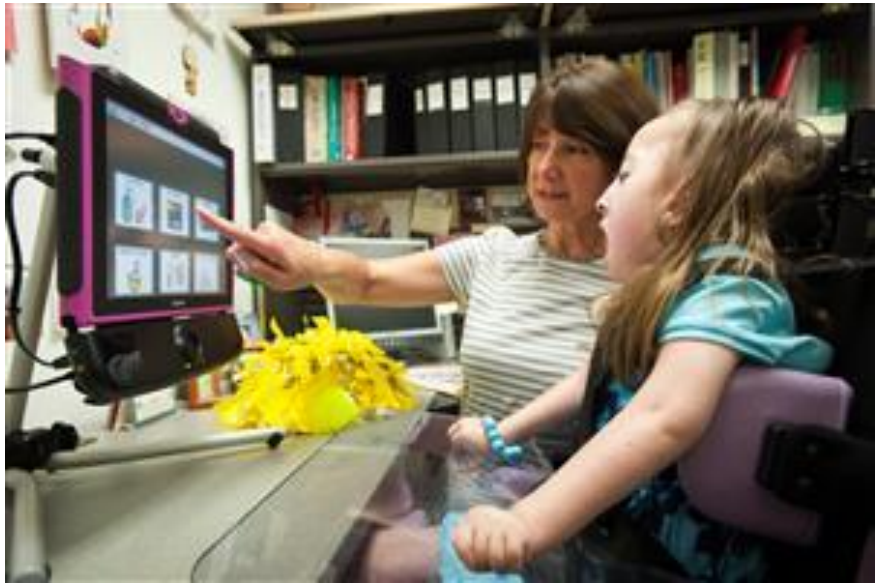
Advantages

- Related to life skills
- dependence
- Social acceptance

Challenges

- Motivation
- Limited communication opportunities

6. Technology



Western PA School for Blind Children, http://www.wpsbc.org/domain/5

Advantages

- Access to information and materials
- Increased independence

Challenges

- Cost
- Complexity
- Substitute for natural communication

One size does not fit all...

http://www.insigmaus.com/approach/best-fit-approach/

As a TVI, how can you help Sam learn?

Select your **MYSTERY** student…

Think about…

which of your students is the greatest mystery for you?

Write…

- your greatest challenges in teaching him or her
- what information you wish you had

Agenda

1. History and trends in education for children with visual impairments and multiple disabilities
2. Assessment
3. Decision making with the educational team
4. Implementing instruction
5. Essential skills areas
6. Planning for adulthood

ACTIVITY: Think and talk…

- Since you became a TVI, how has the population of children with visual and multiple disabilities changed?

- How have the trends in service delivery changed?

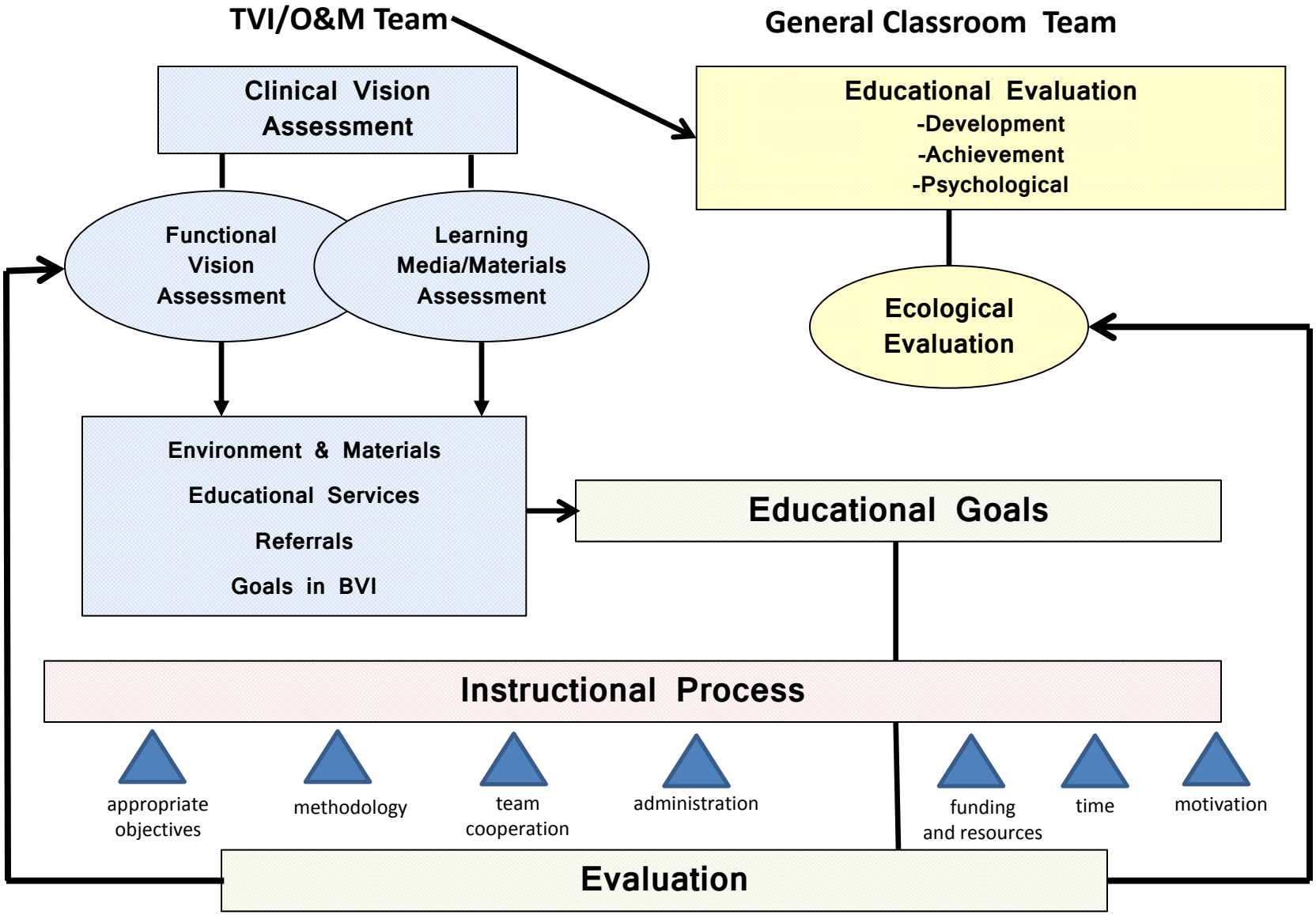
Consider what the most experienced teacher in your group said….

2. Assessment is intended to….

- Determine eligibility
- Plan instruction
- Evaluate instruction

What you do depends on the purpose of your assessment.

FROM ASSESSMENT THROUGH IMPLEMENTATION



But there's a gap between fantasy and reality…

Eligibility

Child must have an educational need related to visual impairment.

Educational needs:

Can child function better with

- Adaptations and accommodations?
- Instruction related to specialized areas (expanded core curriculum)?

Primary assessments performed by TVI for children with multiple disabilities

- **Functional vision assessment**

- **Learning media and materials, including sensory preferences**

In addition, TVIs may participate in general developmental assessment…

Example: How can the early childhood teacher evaluate object permanence in a blind child?

- Does the child visually follow people?
- Does he search for or locate an object out of sight? Concealed while he watched? After a time delay?
- Does she remember and anticipate the usual location of an object?
- Does the child react when an object disappears from touch? (Bruce, 2012)

Encourage selection of appropriate developmental assessments….

Appropriate tools….

Allow for a variety of behaviors to demonstrate a milestone (not just one behavior)

Can be adapted for students with sensory disabilities

Are not timed

Translate directly to student goals

Before conducting assessment

- Interview family and teachers
- Review results of clinical low vision assessment
  - Often underestimate visual ability in MD students
  - CVI diagnosis varies

- Observe in classroom several times, at least two hours in sequence, including a daily routine. Select processes for in-depth assessment.

What data should we take?

- Checklists
- Developmental scales with age comparisons
- Anecdotal observations
- Targeted observations (videos)
- Interviews

How do we know when we have
Too Much Information?
(a modern day risk!)

http://www.onlineuniversities-weblog.com/

To discover whether needs are related to visual disability…

1. Review medical records, current IEP
3. Assess use of vision (ISAVE, observation in functional tasks).
4. Assess learning media (Learning Media Assessment or APH Sensory Learning Kit)
4. Conduct other appropriate assessments

This is not a simple question with a child who has multiple disabilities.

- ….is he inattentive because of reduced vision or cognitive disabilities?
- ….is he asocial because he cannot see others or because he has different neurological characteristics?
- ….is she unable to respond to prompts because she cannot comprehend the language or because she cannot see the referent object?
- F:\Mason\00007.MTS

Functional vision assessment

- Interview parent and teacher if possible
- Assess best and typical vision
- Assess at different times of day, at least three different days
- Make a sample videotape during structured and unstructured activities

Elements of functional vision assessment

- Reflexes (blink, pupillary response to light)
- Formal/informal near/distance acuity
- Functional assessment of color, contrast, lighting
- Field assessment
- Oculomotor assessment (Fixation, Convergence, Accommodation , Tracking , Shift gaze, Scanning)
- Eye Preference
- Other visual behaviors
- **Summary and recommendations**

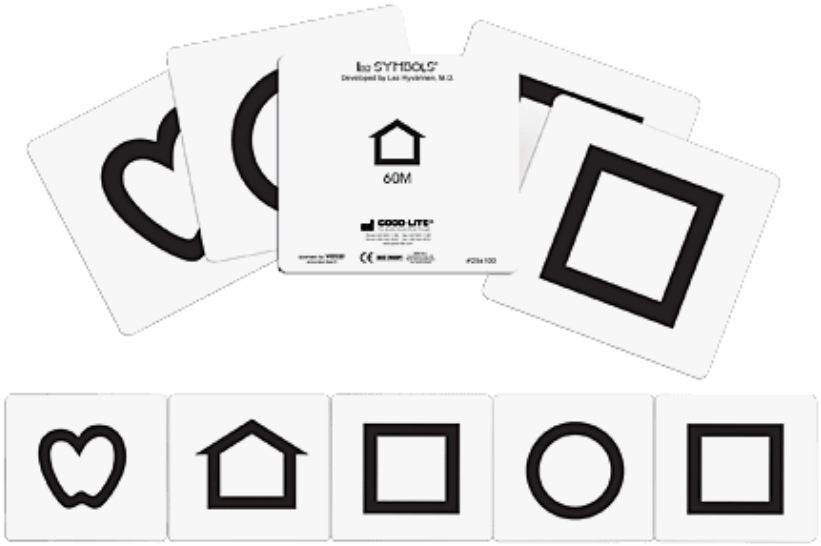
Formal assessment of acuity

Grating acuity

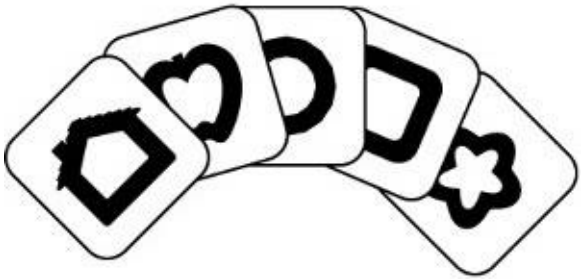
Dr. Velma Dobson with Teller cards

Grating acuity paddles

Symbol identification, distance



(**Lea Symbol Test,**
Vision Associates)



Patti Pics, Precision Vision

Informal assessment of acuity (estimated)

Presentation of desired objects at measured distances (Photos of raisings and Cheerios cereal)

Object matching and identification

Assemble two of each object.

Present one at a distance and ask child to find near equivalent.

1 inch object at 10 feet = 20/60

Photos of small red objects, including heart, bell, animal figure)

The goal is to understand what the child can see.

Brian can see a ½ inch object on a contrasting background up to five feet away

is more important than

Brian has 20/80 acuity.

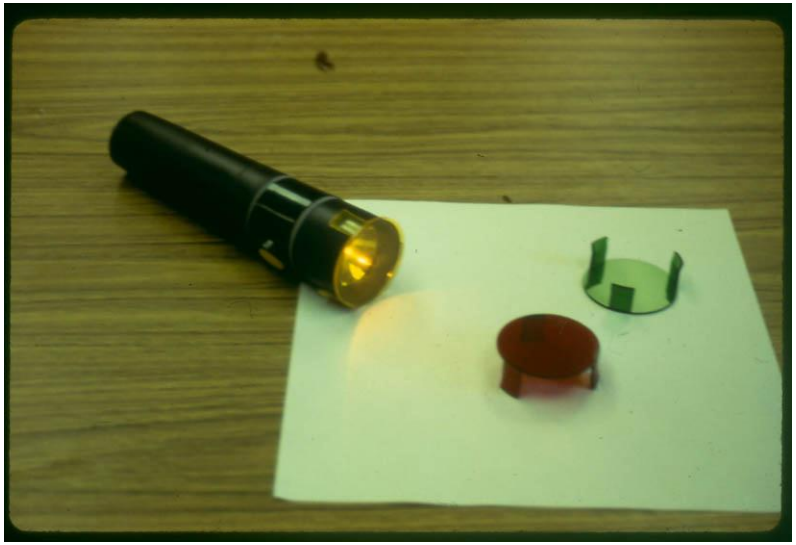
Color

Photos of the same preschool classroom in blurry and clear conditions. Many

- a **children are seated in a group, but students wering red and yellow are most visible.**

Contrast

Lighting….
Does the child enjoy lighting effects, or are they aversive?



Field assessment

Formal tests often not possible for children with multiple disabilities (Tangent screen, Amsler)

Variation of confrontation test preferred, with glasses off, one eye at a time.

At nearpoint, scanning array of small objects (look for neglect in CVI)

http://www.ssc.education.ed.ac.uk/resources/vi&multi/bowmandutton/bowmandutton2.html

Informal field assessment

- Does the child turn toward someone quietly approaching from the side?
- Does the child turn toward/reach for a quiet ball rolled from the side?
- Is the child annoyed by wearing an eye patch or a hat with a visor?
- Does the child turn toward a mobile suspended on either side, at different angles?

Oculomotor assessment

- **Scanning** scene, new setting, video or TV screen
- **Tracking** person, spoonful of food, bouncing ball, video target
- **Shift of gaze**: Faces, toys or materials in array, outdoor scene
- **Eye alignment** in different positions (Variable esotropia/exotropia)
- **Convergence** when object moved toward eyes

Eye preference

- Looking through a tube
- With one eye patched or covered
- Held tilt when observing at near or distance

Other visual behaviors

- Contrast sensitivity: Various levels of contrast on computer screen
- Light gazing, finger flicking
- Preference for moving objects over stationery and vice versa
- Reliance on peripheral or central vision
- Difficulty in recognizing/interpreting faces

How does the student communicate about vision?

Sounds

- Speech (Direct and indirect)
- Vocalization

Movements

- Body movements
- Head movements
- Eye movements (voluntary and involuntary)

During observation of environment…

- Position yourself as the learner will be positioned
- Observe changes in visual environment at varying times of day
- Assess opportunities for learner to change the visual environment
- Consider color, contrast, space, time, and lighting
- Evaluate opportunities for visual interaction with others

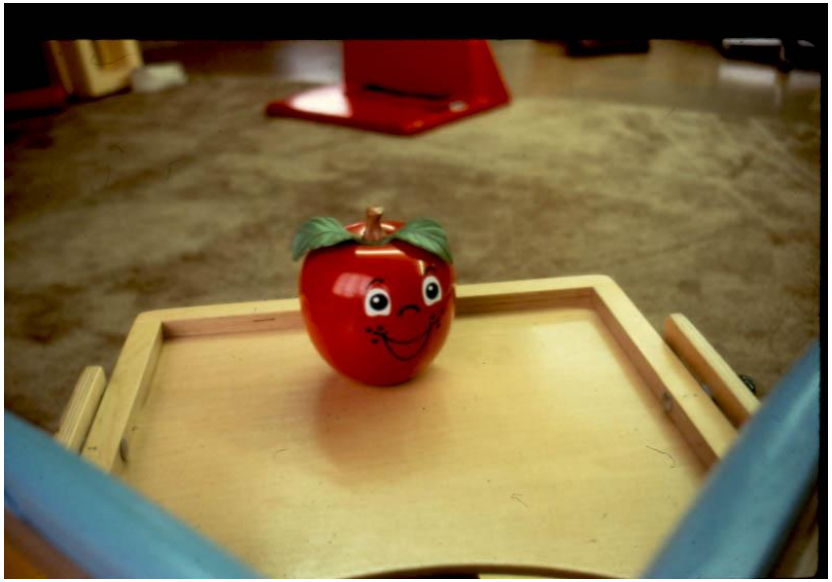
Positioning and Movement

- **Consider different student positions in collaboration with PT/OT, O&M specialist**
  - **Supine**
  - **Prone**
  - **Side lying**
  - **Sitting**
  - **Standing**
  - **Students with independent mobility**

Environment: See it from the child's perspective

Tilted head

Sidelying



Symmetrical seating

Do physical limitations affect the child's ability to understand objects and distances?

During observation of the child

Purposes for which vision is used

- Safety and security
- Locating/monitoring objects
- Getting information
- Entertainment
- Communication

- A videotape of the child during unstructured time can be helpful

During observation of child who is mobile…

- Reaction to changes in surface
- Movement toward wanted objects or people
- Movement away from undesirable conditions (noisy places, areas where there is glare)
- Differences in gait, pace, speed in familiar and unfamiliar places

During observations of the child

Note biobehavioral state

- Regular sleep
- Irregular sleep
- Drowsiness
- Alert inactivity
- Alert activity
- Crying-Irritable

Best Resource for Students who are Minimally Responsive:

ISAVE (Individualized Systematic Assessment of Visual Efficiency) (Langley, 1998)

A systematic process for formal observation of visual abilities and behaviors

Important concerns with children who are minimally responsive (Component 6)

Alternative visual behaviors

Widening of eyes

Glistening

Decreased/increased tone

Sighing

Smiling

Laughter

Gaze aversion

Eyelid fluttering

Elevated eyebrows

Behaviors that suggest presence of vision (Langley, 1998)

- Eye pressing
- Finger flicking
- Light gazing
- Visual perseveration on a moving stimulus such as ceiling fan
- Change in visual response (widening of eyes or extension of head) appearance of a visual target (e.g., light box)

Postural concerns

- Reduce postural tone by
  - Providing stable base of support
  - Establishing symmetrical position
  - Stabilizing center of gravity
  - Supporting at joints
  - Combine pressure cues and graded weight shifts

  Provide occipital support in supine position, wedge or bolster under chest for prone

Assessment of social attentional gaze behaviors (Component 13, ISAVE, Langley)

Useful for students with possible autism

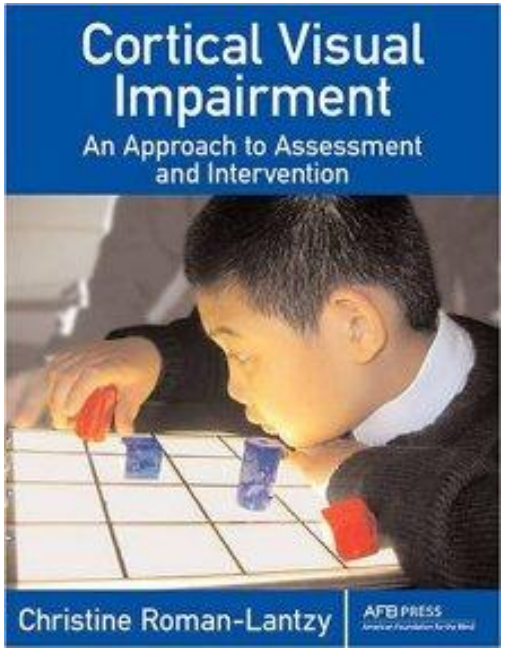
Social Skills (Orients toward face, watches speaker's eyes and mouth)

Attending behaviors (Gaze easily distracted by visual auditory stimuli)

Assessment of Vision in students with CVI

CVI range (Roman-Lantzy, AFB)

- Range 1-2: Minimal visual response
- Range 3-4: More consistent visual response
- Range 5-6: Uses vision for functional tasks
- Range 7-8: Demonstrates visual curiosity



The CVI Range: Within-characteristics assessment (Roman-Lantzy, 2007)

Rated 1-5 as **not resolved** through **resolved**

- Color preference
- Visual latency
- Difficulty with visual complexity
- Difficulty with distance viewing
- Need for movement
- Visual field preference
- Light gazing and non-purposeful gaze
- Atypical visual reflexes

Children with brain differences and CVI

- Preferences for use of peripheral vision
- Difficulty recognizing faces (*prosopagnosia)*
- Preferences for moving or stationery stimuli
- Preferences for light stimuli
- Vision while moving (surface change, distance objects)
- Difficulty seeing objects when other objects are present (*simultanagnosia)*
- Visual latency
- Novelty preferences

Learning Media Assessment with students who have multiple disabilities

(Koenig & Holbrook, 1995)

1. Conduct three observations of student using **Use of Sensory Channels**

2. Complete **Functional Learning Media Checklist** according to background records and Use of Sensory Channels document.

(Video Activity)

During Use of Sensory Channels observation

- Count the number and percentage of times that the child uses touch, hearing, vision, and proprioceptive/vestibular information
- Identify the PRIMARY and the SECONDARY learning media.

Learning Media and Materials

The choice of learning media depends on…

Level of abstraction

Familiarity

Complexity of material (Low tech/high tech)

Frequency of use

Preference and motivation

Functionality

Preference

Generalizability

Age appropriateness

For students who do not use symbols to communicate or to organize time…

American Printing House for the Blind: Sensory Learning Kit (SLK) , Millie Smith (VIDEO)

Assessment is through presentation of a variety of sensory items to determine preferences or "appetites"

- Instructor records preferences under sensory channel
  - Vestibular
  - Gustatory
  - Olfactory
  - Tactual/proprioceptive
  - Auditory
  - Visual

- Response modes are also recorded
  - Positive
  - Negative
  - Distress signals

Photos from APH

Present 4 items in each sensory channel (vestibular/proprioceptive, gustatory, olfactory, tactual, visual, auditory)

Bell bracelet, mirror, tactile roller

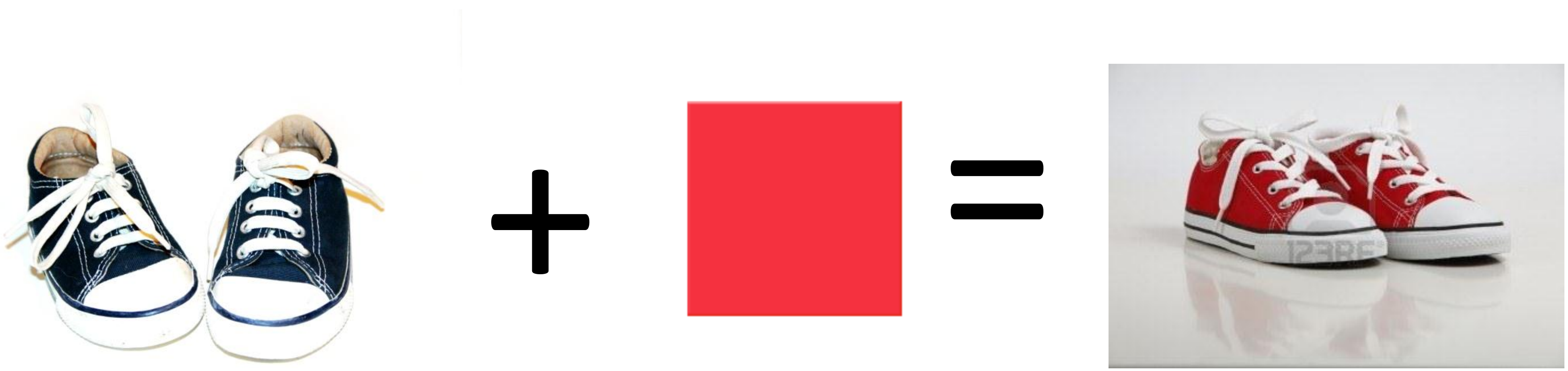
….or assemble your own kit of materials that have varying characteristics (cotton balls, measuring spoons, rubber dog toy)

Select materials based on **preference** and **frequency of use**.

1. What are the Marion's preferred materials from an object assessment?

2. What objects does Marion see every day?

Transfer qualities of preferred objects to frequently used ones.



Sensory response record (Smith)

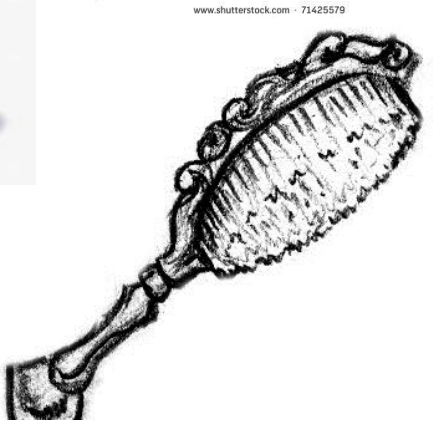
- For each item, record
  - **Appetite or aversion**: *Does the student prefer or avoid it?*
  - **Delay of response in seconds:** *How long does it take him to respond?*
  - **Intensity of orientation:** *Does she pay attention to the object in preference to other things?*
  - **Response state** (Extended, Quiet alert, Active alert, Partial participation): *How alert is she?*

  (FILM)

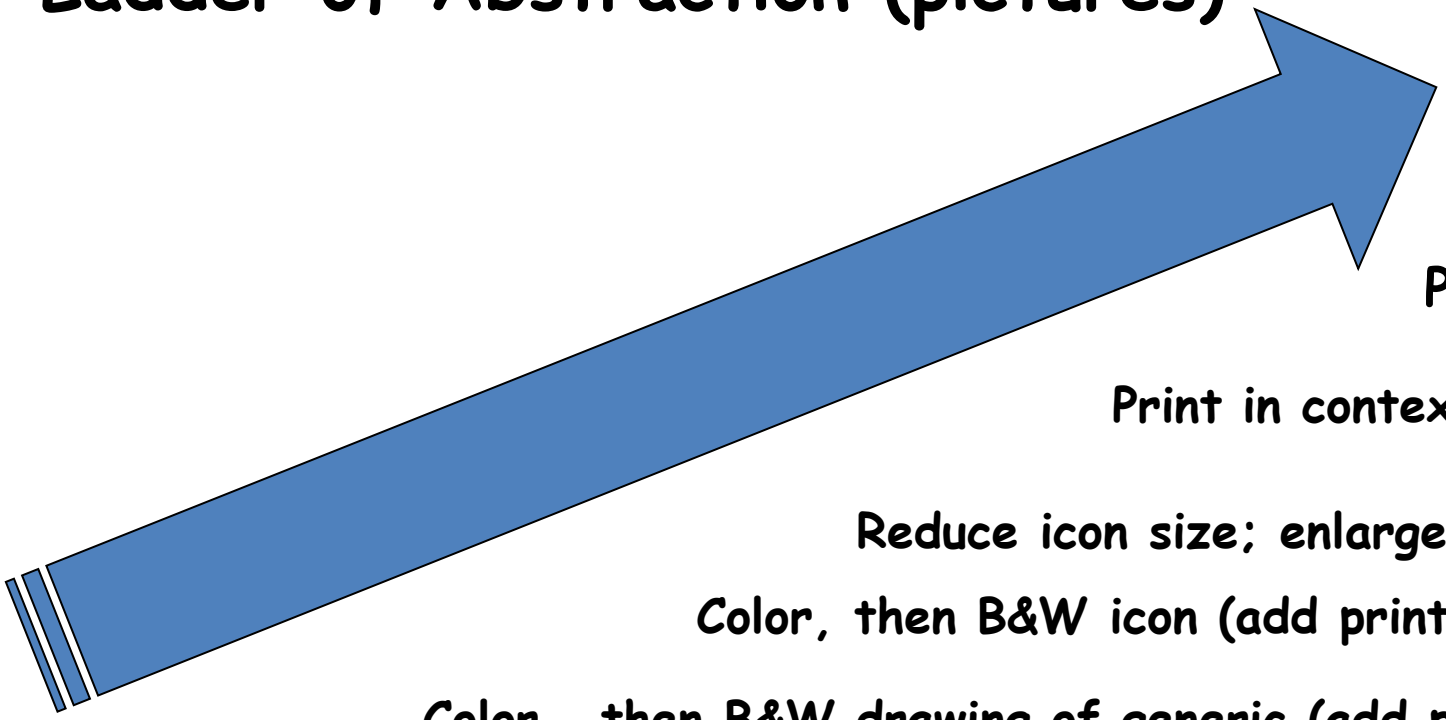
Use of pictures as learning media

- Size
- Color
- Background
- Contrast
- Level of abstraction
- Child’s experience
- Detail

  (Activity)



Ladder of Abstraction (pictures)



Print alone

Print in context

Reduce icon size; enlarge print

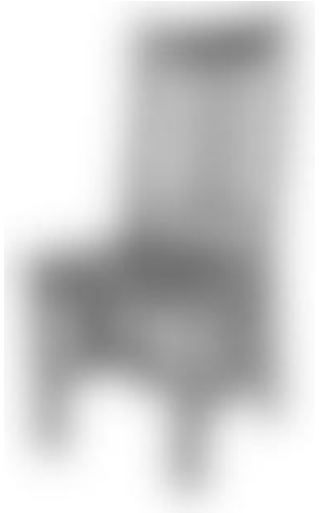
Color, then B&W icon (add print)

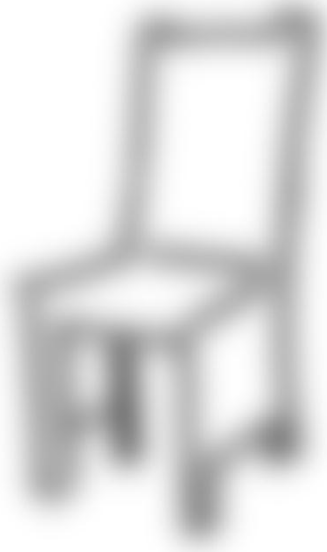
Color , then B&W drawing of generic (add print)

Color, then B&W photo of generic

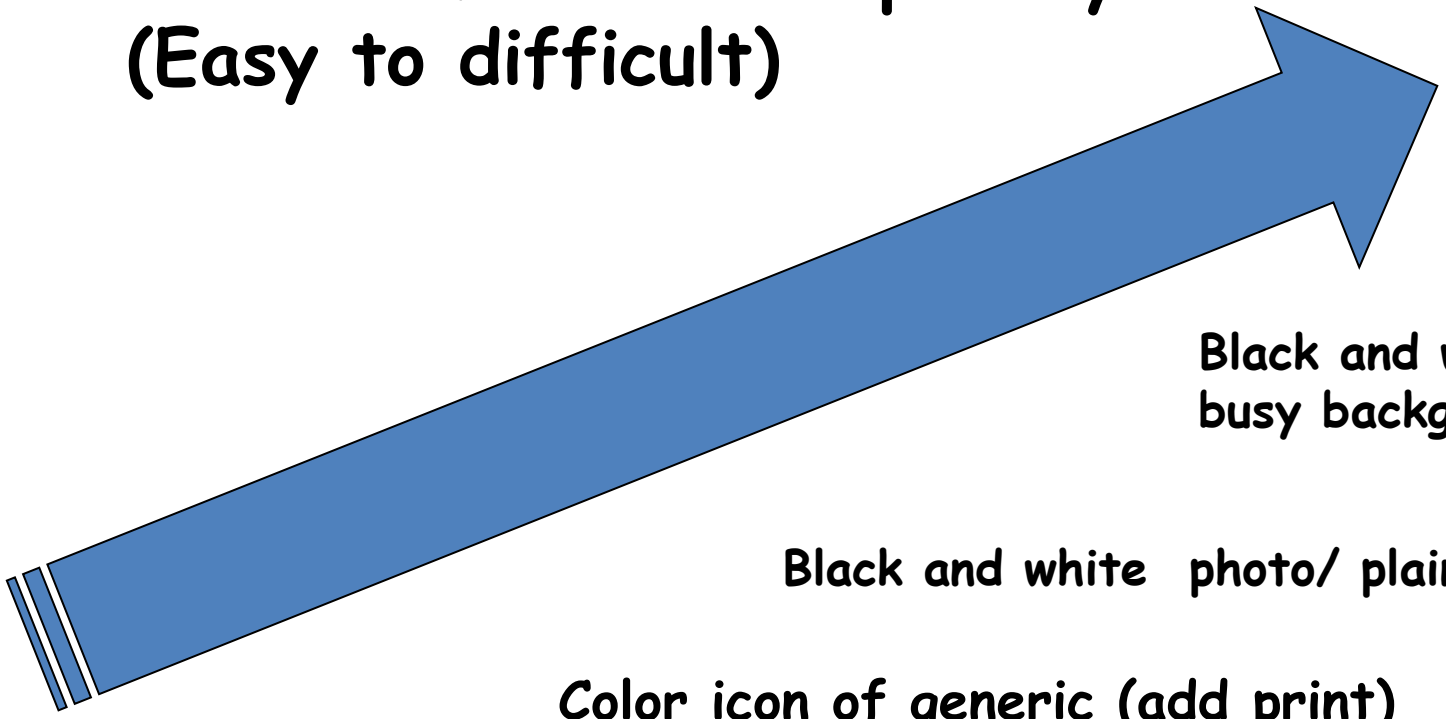
Color photo of exact item

Concrete item/action





Ladder of visual complexity (Easy to difficult)



Black and white photo/ busy background

Black and white photo/ plain background

Color icon of generic (add print)

Color photo

Real object

Line drawing with some inner detail

Line drawing with some inner detail and color

Assessing Tactual Skills
(Smith & Levack, 1996)

- **Locating objects** (Contacts, obtains, searches for object tactually)
- **Exploring objects** (Moves parts of body over object, plays with fingers/toes, uses fingertips to gain information)
- **Manipulating objects** (Shakes, bangs, moves parts
- **Recognizing objects** (Shows pleasure at obtaining object, anticipates events)

Tactual skills (continued)

- **Comparing objects** (Responds differently to temperatures, textures; matches shapes; shifts touch from object to object)
- **Using objects in functional contexts** (brushes hair; eats with spoon)
- **Using objects for communication** (Moves object toward caregiver or pulls caregiver to object)
- **Organizes objects** (Puts away; sorts; gathers material for an activity)

Think and talk…*

- DESCRIBE how you assessed your student. What was the most useful information you gained? What couldn't you find out?

- DISCUSS what approaches would help others in your group to find out the information they could not discover through assessment.

A question of reading….

- Aaron, 7 years old, blind from ROP
  - enjoys listening to simple stories and songs with rhyme
  - multiple disabilities from intraventricular hemorrhages
  - hemiplegia affects his left hand and leg
  - Uses left hand to grasp but no individual finger use on that hand
  - developmental abilities from 24 to 54 months
  - strengths in verbal communication and social skills.

Aaron enjoys sitting with classmates who are learning to read, and he can often identify the first letters of spoken words, but he does not remember spelling of words except his own name.

How will you assess him for potential to be a braille reader? If you decide that he is ready to begin some braille reading, how will you begin instruction? What adaptations might be used?

Not what media, but whether reading is possible….

Cognitively?

Functional literacy readiness….

attends to others when they read
anticipates activities and events
generalizes use of abstract symbols

Conventional literacy readiness…

Notices likenesses/ differences in spoken words
Completes sentences in book
Relates experiences to characters
(Koenig and Holbrook, 1995)

Physically?

- Object, shape, texture recognition from touch
- Raised line abstract lines and shapes
- Different symbol in a line of symbols (make it meaningful!)
- Ability to control finger tension and pressure
- Ability to follow a directional line of braille dots

Paths to Literacy, Perkins

Meet Harry

- Think and talk….
  - What assessment activities would you explore if
    - You are trying to decide if Harry is eligible for services as VI?
    - You are trying to determine what Harry can see at nearpoint and at a distance?
    - You are trying to develop a routine for increasing Harry's use of vision during communication activities?

Recommendations and Summary…. The key to implementation

- Simple, direct language
- Responsible professional is indicated
- Clearly identified as
  - Adaptation
  - Instruction
  - Referral

Sample recommendations

Adaptation: Classroom staff will present mealtime and classroom materials to Marcus on high contrast backgrounds.

Referral: The Orientation and Mobility instructor will assess Marcus' ability to travel to a destination in the classroom and school.

Instruction: The TVI and the classroom assistant will teach Marcus

- to identify pictures associated with daily activities
- to present the pictures to another person to request or to indicate anticipation

Next steps:
Making decisions with the team

http://www.all-hd-wallpapers.com/wallpaper/