FUNCTIONAL VISION AND LEARNING MEDIA

Keys to Accessing Information

VMI

MI

• Learner’s with symbolic skills (preoperational and up)
  – 98% of professional development in sped
  – Target group for policies and strategies developed by federal and state education agencies

• Learner’s with pre-symbolic skills (sensorimotor)
  – .5% of professional development in sped
  – Included in policies developed with others in mind
  – Strategies esoteric, implemented sporadically, may have very limited research base

VMI

• Eligibility
  – Serious vision loss after correction
  – Visual impairment adversely affects educational performance
    • Cognitive level not used as differential
    • Etiology still an issue for some
Sensorimotor level VMI

- High proportion of VI caseloads
  - CVI leading cause of visual impairment in children
- Highest risk related to cognitive development
  - Sensory exploration is primary learning style
  - Access to sensory information is very limited
    (FVE/LMA)
  - Additional auditory/tactual impairments, SNP problems
- Without intervention, predictable cognitive delays in early development become permanent cognitive disabilities

Cognitive delays and early development

- Cognitive development is sensory dependent
  - Process
  - Experience

Cognitive Process

- Acquisition
  - Taking in sensory information (LMA)
- Storage
  - Memory (long term)
- Retrieval
  - Need to know (curiosity and motivation)
- Use
  - Application (action required)
Experience

• Quantity
  – Billions of sensory experiences are required for adequate cognitive development in 1st year of life
• Quality (LMA)
  – Sensory characteristics of media correspond to unique capacities of sensory neural processing system
• Result
  – Brain doubles in weight in 1st year of life
  – Development is life long, but pace slows

What do typical FVEs contain currently?

– Eye medical summary:
– Observation summary (near vision, distance vision)
– LMA
  • Channels: primary and secondary
  • Media
  • Functionally blind/braille
– Recommendations: clinical low vision, O&M
– Accommodations
– Eligibility
– Services: Time and type

What do you need to do differently?

Depends on what you are trying to do
Typical (2 hrs, 2/3 places)

- May suffice
  - To establish eligibility
    - Educational performance adversely affected
  - To establish primary and secondary learning channels
    - When vision is used rarely or globally and there are no additional sensory issues
- Not sufficient
  - For determining specific accommodations/modifications/supports
  - For determining relative strengths of all sensory channels for different tasks in different environments and best learning media related to each

Accommodations modifications supports

- IDEA 300.323(d)(2)(ii)
  - Agency must ensure availability to all team members
  - Specific accommodations, modifications, and supports that must be provided for the child in accordance with the IEP

Change: Eye medical

- Currently
  - Examination by generic specialist
  - Information about refractive error, visual acuities, visual fields, oculo-motor function, and accommodation left blank or noted "unable to test"
  - Aids not addressed (glasses)
- Need
  - Examination by specialist familiar with alternate procedures
  - Information provided in all standard areas
  - Prescriptive lenses addressed
If the generic eye specialist cannot do a complete exam covering the standard areas, a clinical low vision examination by a specialist with experience in the use of alternative methods is needed.

**Change: Observation Procedure**

- **Currently**
  - Based on about two hours of observation (new students)
  - Two or three environments observed
  - Procedure: teacher observation, brightly colored objects and lights

- **Need**
  - On-going observation
  - Different days, over time, fluctuations in performance due to health, seizure activity, etc.
  - All frequent environments
  - Procedure based on use of structured observation tools

**Change: LMA**

- **Currently**
  - Primary secondary channels listed
    - Primary often auditory
  - Media grid filled in
    - Real objects, multisensory objects and toys, pictures, music, recorded stories
  - If functionally blind
    - Tactual learner/NA

- **Need**
  - Analysis of relative strengths of all channels
  - Media: Assessed appetites/aversions
  - Tactual learner: specify compensatory strategies (van Dijk, Nielsen, Chen & Downing)
Change: Recommendations

- **Currently**
  - Clinical low vision rarely
    - "student is non-reader and does not need optical devices"
  - O&M if ambulatory or capable of self-propelling wheelchair

- **Need**
  - Clinical frequently
    - Alternate procedures for acuities and fields
    - More attention to muscle function and accommodation
    - Areas not usually included: contrast sensitivity, color perception, etc.
  - O&M maybe not
    - Spatial relationships yes!

Change: Accommodations

- **Currently**
  - Items copied from menu in shell
    - Preferential seating
    - Present materials in preferred visual field
    - Use bright colored, light reflecting materials
    - Use hand-under-hand assistance
    - Provide multisensory input

- **Need**
  - More detail
    - Preferential seating becomes "Johnny sees people and objects best when they are on his left side"
  - Need tied to context
    - "In morning circle, Johnny's chair needs to be on right side of the circle"

Change: Eligibility/Service

- **Currently**
  - Usually yes: educational performance adversely affected
    - Consult
    - 2x's monthly, 30 min.

- **Need**
  - Type: Collaborative
    - Includes hands on
      - Diagnostic teaching
      - Visual skill teaching
      - modeling
  - Amount: Based on needs of student and team
    - More intense when setting up program, cross training team
What tools are available?

• Developmental perspective (D)
  – Visual skills compared to normal development
  – Scales include mixture of visual attending skills, visual perceptual skills, cognitive skills, and motor skills

• Ocular perspective (O)
  – Blink, pupil reactions, acuities, fields, ocular-motor functioning, distance/near functioning

• Neurological perspective (N)
  – Color, movement, contrast, latency, complexity, etc.

New books full of information and tools

  • (D and O)
  • (N)
  • (O)

Assessments tools for sensorimotor level VMI

• FVE
  – ISAVE (D and O)
  – CVI Range (N)
  – CVI Resolution Chart (N)

• LMA
  – The Sensory Learning Kit (N)
  – Every Move Counts (N)
Unique contributions

<table>
<thead>
<tr>
<th>ISAVE</th>
<th>Positioning and visual functioning component for VMI with motor impairments</th>
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<tbody>
<tr>
<td>CVI Range</td>
<td>Ratings of characteristics to determine functional range</td>
</tr>
<tr>
<td>CVI Resolution Chart</td>
<td>Intervention guide, 3 skill phases and 3 adaptation levels</td>
</tr>
<tr>
<td>SLK</td>
<td>Analysis of relative strengths of sensory channels, appetites/aversions for learning media</td>
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Time efficient/effective reports

- FVE shells
  - Components
    - For students with ocular impairments
    - For students with cortical impairments
- LMA shells
  - Components for sensorimotor level VMI

FVE components: ocular

- Corn and Erin
  - Medical
    - Ophthalmological
    - Observation
      - Eye structure and reflexes (alignment, pupils reaction to light, blink, nystagmus)
      - Eye preference (best acuity)
      - Near vision
      - Distance vision
      - Area of vision (field)
      - Color and perception
    - Recommendations
    - Summary/eligibility
- Lueck
  - History
  - Evaluation procedure
  - Distance visual acuity
  - Visual fields
  - Contrast sensitivity
  - Color vision
  - Visual behaviors
  - Summary
  - Recommendations
Suggested change: ocular

- Medical
- Ophthalmological
  - Eye structure and reflexes (blink, pupil response, etc.)
- Procedure
  - What (tools), where, when (different times and days)
- Observation
  - Eye preference, distance, near, fields, color, perception
- Recommendations
- Accommodations/Modifications/Supports
- Eligibility

Components for CVI shell based on Roman-Lantzy material

- Procedure
  - CVI Range (for observation), CVI Resolution Chart (for interventions listed in A/M/S section)
- Observation
  - Color, movement, latency, visual fields, complexity, distance viewing, visual novelty, visual motor
- Recommendations
  - Phases for visual skill teaching
- Accommodations/Modifications/Supports
  - Environmental and media adaptations

Components for sensorimotor level LMA

- Sensory system prevalence
- Present levels of sensory performance
  - Response levels: attention, exploration, function
- Highly effective learning media (Appetites/aversions)
- Accommodations (Response delays by channel, pacing of instruction, tactile strategies, positioning)
- Referrals
## Observation/Accommodation Guide

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<thead>
<tr>
<th>Activity</th>
<th>EPA</th>
<th>Media</th>
<th>Acc/Mod/Sup</th>
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## Use in daily instruction

- Not a chance if your findings are vague
- Not a chance unless you are an active, frequently participating member of the team
- Best chance if
  - A/M/S are listed in ARD document (Guide?)
  - You help design instructional activities
  - You model VI strategies
  - You monitor, revise, and expand activities as needed