Collaborative Psychoeducational Assessment of Students with Vision Impairments

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With gratitude to Marnee Loftin, Steve Goodman, Stuart Wittenstein

- Collaborative Assessment Pathways to Literacy, Perkins School for the Blind, March 2021
- Making Evaluation Meaningful (TSBVI, 2006, under revision)
- Collaborative Assessment – Working with Students who are Blind or Visually Impaired, including those with Additional Disabilities (AFB)

And, for their foundational work

- Joan B. Chase, Retrolental Fibroplasia and Autistic Symptomatology: An Investigation into Some Relationships Among Neonatal, Environmental, Developmental and Affect Paperback – June 1, 1968 *“The mother of us all.”*
- John L. Morse (1983), Psychological aspects of low vision. In R Jose *Understanding Low Vision.* NY: AFB

And, for their foundational work (cont.)

- Sharon Bradley-Johnson (Central Michigan University, Retired)
  - Psychoeducational Assessment of Students Who Are Visually Impaired or Blind: Infancy Through High School Mar 1, 1994

Agenda

1. Describe the role of a teacher of the visually impaired as it relates to psychoeducational assessment
2. Discuss issues and caveats associated with conducting psychoeducational assessments
3. Identify contributions that the teacher of the visually impaired makes within the context of a psychoeducational assessment

Note:

While the focus of this presentation is intelligence testing, the principles apply to all types of psycho-educational testing in which an individual with vision loss may participate:

- Academics
- Speech/Language
- Occupational Therapy …

So, the child with a vision impairment is being considered for an evaluation…

What needs to happen?

Who are the key players?

What are the considerations?

What needs to happen?

An evaluation planning meeting –

1. Be clear on the purpose of the evaluation
2. Make sure the key team members are present, including parents, teacher of the visually impaired, classroom teacher, special education teacher

Reasons Children with Vision Impairments are Referred for Evaluations

Reasons for assessment
(same as for other students)

1. Establish a baseline at time of medical diagnosis of vision impairment or referral to special education
2. Identify patterns of strengths and weaknesses in cognitive processes and academic skills

Reasons for assessment (cont.)

3. Determine presence of additional disabilities
   - Learning Disability
   - Communication Disorder
   - Orthopedic Disability
   - Intellectual Disability
   - Autism Spectrum Disorder
   - etc.
4. Design remedial and compensatory strategies
5. Provide additional documentation for needed classroom accommodations.

Who are key players when evaluating children with visual impairments-may include all of these depending on the reason for referral?

- Child
- Parent
- Teacher of the visually impaired
- Orientation and mobility specialist
- Speech language pathologist
- Occupational and physical therapist
- School psychologist

School Psychologist

- Trained to understand the strengths and limitations of various assessment measures and methodologies
- Understanding of development
- Trained to integrate findings from all available sources and evaluations conducted

Teacher of the Visually Impaired

- Should be included in the evaluation planning meeting
- Can provide team members with information:
  - Review material about and implications of the eye condition
  - Developmental History, Early Intervention
  - Share information from the Functional Vision Assessment and Learning Media Assessments and implications on learning

Teacher of the Visually Impaired (cont).

- Review the appropriateness of the testing materials in advance of administration
- Demonstrate use of low vision devices and technology regularly used by the child
- Offer to conduct vision simulations for examiners
- Collaborate within testing sessions

Clinical Information about VI

- Etiology
- Visual Acuity (near and distance)
- Field Restrictions
- Lighting Needs
- Contrast Sensitivity
- Prognosis
- Medical treatment to date
- Medical treatment recommended for future

So before ever evaluating the child the examiners should…

- Sit down with the TVI to review the test materials to see whether they are accessible and how to adapt them to make them accessible, how to present the stimuli (e.g., lighting requirements), etc.
- Consider inviting the TVI into the testing session to
  - *record observations of visual/general behavior*
  - *assist with behavior management if needed*

Implications of Current Population of VI

- Many children with VI complex population – e.g., severe VI – apt to have developmental delays
- Children with neurologically based vision impairments are at increased risk for additional difficulties (risk 60%, need for further diagnostic evaluations)
- Issue of stable vs. deteriorating conditions

A QUESTION…

Given no intellectual assessments currently on the market have been developed specifically for children with vision impairments, can intellectual assessments provide teams with meaningful information?

THE ANSWER from the Task Force…

"IQ tests can provide meaningful information to individuals who are blind and visually impaired, as well as to their instructors, families, and decision makers … provided that all tests be administered with key points that reflect the uniqueness of the population, as well as appropriate cautions …"

What to administer?

- Two cognitive measures if possible, especially if first test is in Intellectual Disability range
- Verbal and memory components
- Visual-perceptual-spatial – when and why?
  - Cautions re: visual fatigue
  - Cautions re: reporting scores

What do most cognitive assessments include in their batteries? What do we do/omit for VI?

- Verbal Reasoning
- Visual-spatial abilities
- Fluid Reasoning
- Working Memory (verbal, visual)
- Processing Speed

Verbal Reasoning

- Visual experiences impact their vocabulary development, visual memory, ability to identify something described (e.g., RIAS-2 “Guess What?”)

Caution with verbal items:

- Cultural and experiential differences
- Vocabulary
  - What is a clock?
  - What is a window?
- Comprehension
  - What should you do if you find an iPad on a bench in the park?
  - Why do soldiers wear uniforms?

Visual-spatial Reasoning

- Subtest selection - depends on the child's level of visual acuity and function
  - Mild, moderate (e.g., LP, magnification)
  - Significant, profound (e.g., Braille, tactile representation)
- Implications for reporting scores - qualitative interpretation ONLY!!

Fluid Reasoning

- Depends on level of low vision available, magnification required/technology access required (iPad Pro, video magnifier)?
- Consideration of time constraints
- Qualitative interpretation ONLY!!

Procedural

- Results from visual subtests must NOT be computed into a Visual Spatial, Fluid Reasoning, and Processing Speed Indices and/or a Full Scale IQ
- Interpret visually influenced subtests qualitatively

Working Memory

- Administer auditory
- Consider visual memory depending on level of low vision available (and keep in mind that visual memory items are often timed and will impact scores for children with VI)

Processing Speed

- Depends on level of low vision available
- Consider for qualitative interpretation only!!

Accommodations to Items and Methods of Presentation

ISSUE 6: ADAPTATIONS

Guideline 6: Adaptations, which include accommodations that do not change the concepts tested nor the difficulty level of the test items, should be planned in advance in collaboration with the visual impairment and/or rehabilitation professional and the test developer, and be well-documented in the final report.

Visual-Spatial items or tests may be administered if:

- The individual uses vision for learning
- The FVA and LMA support the presence of adequate vision for specific items
- Both the VI professional and Evaluator agree that results provide meaningful information AND support the referral question
- They include such things as extended time, use of video magnifier, iPad Pro, etc.

ACCOMMODATION OR MODIFICATION?

- Accommodations do not affect basic concept or level of difficulty, e.g., braille or LP
- Modifications affect basic concept or level of difficulty, e.g., use of calculator
- Either change increases the need for caution in interpretation of results

ISSUE 7: TACTILE AND SYMBOLIC REPRESENTATIONS

Guideline 7: Symbols, tactile graphics, and miniature objects must be carefully considered and used with caution to represent pictorial or graphical information. Real objects should be used whenever feasible.

Visual stimuli must be carefully analyzed to determine

- Relevance to the concept being assessed
- Stimuli that can be made accessible
- Any changes or eliminations
- Appropriate use of miniature objects if familiarity with both the real object and the miniature is ensured

How it looks with low vision …

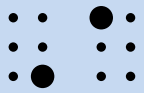
One solution: Video magnifier (CCTV)

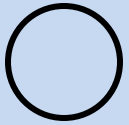
Newer versions, one of many …

Tactile Representation of Visual Stimuli

Letter-Word Identification

A





Letter-Word Identification Uncontracted

another

large

different

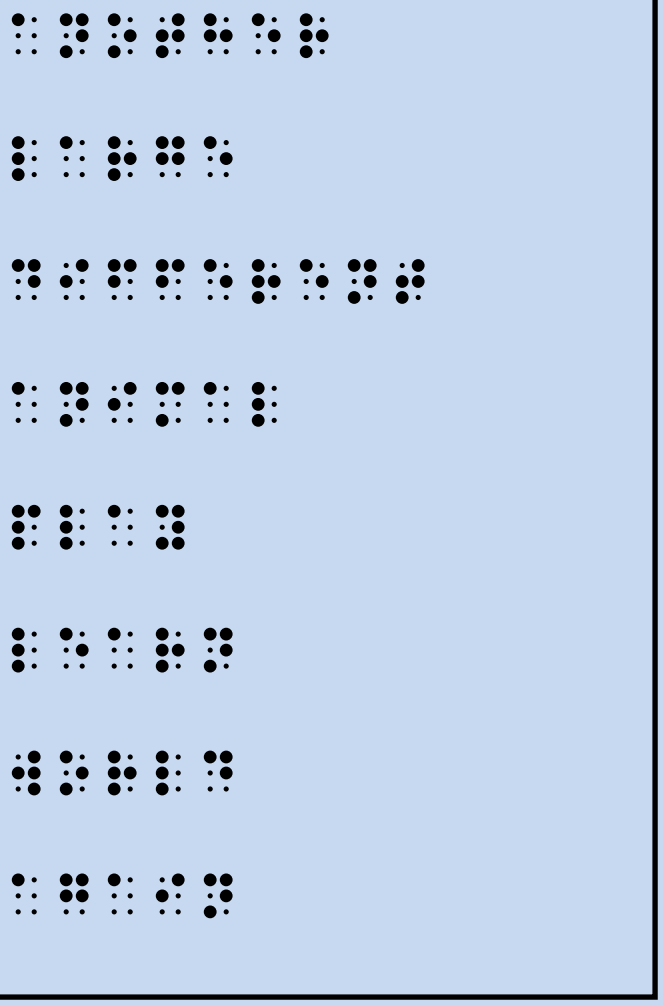
animal

play

learn

world

again



Letter-Word Identification Contracted

another

large

different

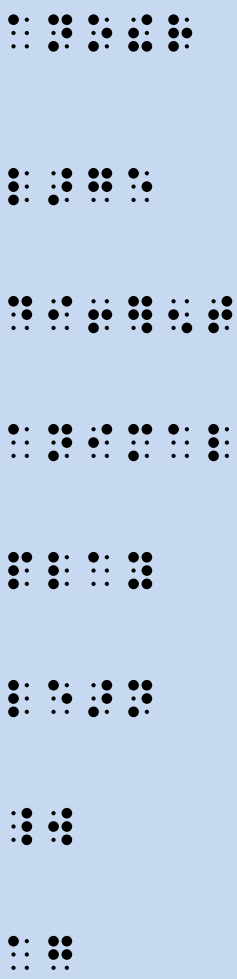
animal

play

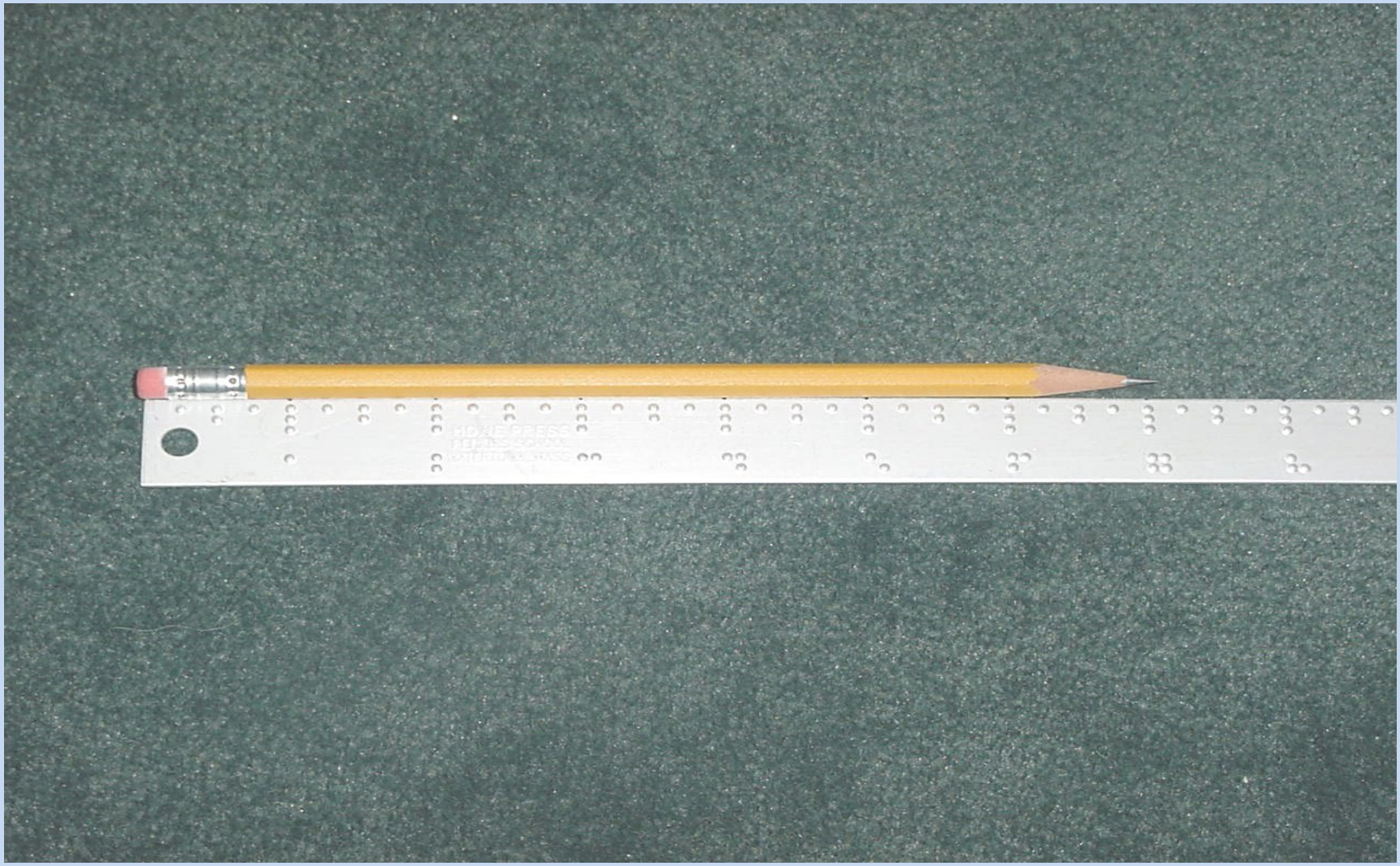
learn

world

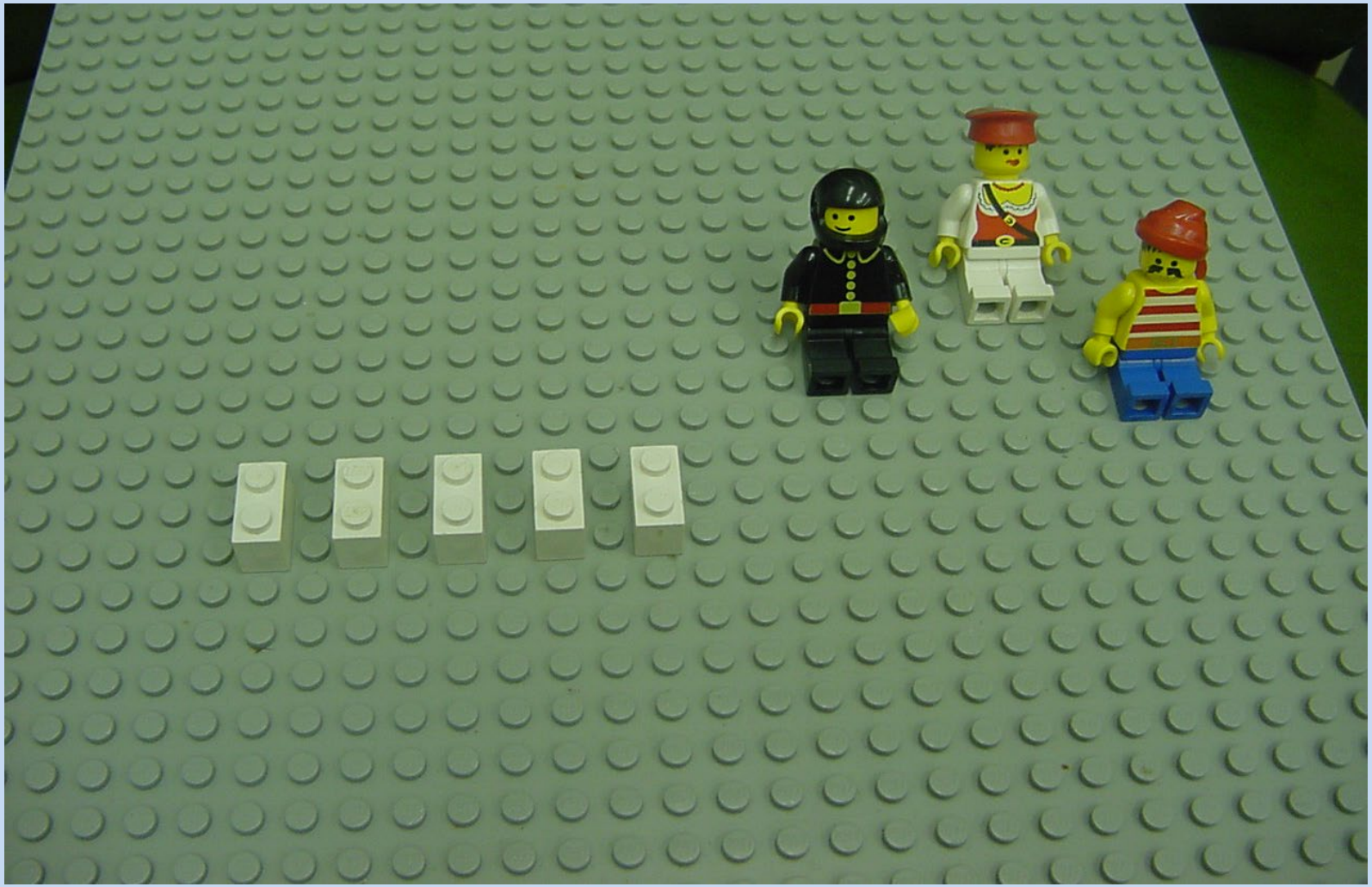
again



Tactile Representation of Visual Stimuli (pencil)



Tactile Representation of Visual Stimuli (LEGOs)



Cautions in assessment
(particular to kids with VI)

- Inadequate consideration of the implications of the vision impairment on the assessment process and interpretation of the results

More cautions in assessment
(particular to kids with VI)

- **(at one end of the continuum)**
  - Attribution of all learning and behavior problems to the vision loss, ignoring other needs
- **(at the other end of the continuum)**
  - Attribution of nothing to the vision loss
    - Underestimating cognitive ability
      - » Inappropriate classification
      - » Inappropriate placement

Caution

Erroneous belief that co-occurring diagnoses are excluded by virtue of the regulation

LD – Federal Regulations

ii. disorders not included …

Specific learning disability does not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or environmental, cultural, or economic disadvantage

This is not to say that a learning disability cannot co-exist in a child with a visual impairment – in fact, the children with neurologically based visual impairment are at increased risk for learning disabilities

https://www.tsbvi.edu/e-rate-items/120-guidelines-for-documenting-ldvi Marnee Loftin

Cautions …

- Inappropriate administration of full battery and reporting of Full Scale IQ, Composite, or other Total scores, leading to underestimates of cognitive ability
- Verbal IQ alone paints an incomplete picture of students who use their vision for learning

WHY use visual items?

"To document the extent to which performance declines when excessive demands are made on a faulty visual system."

Richard Russo, School Psychologist,
California School for the Blind, Retired

Testing is done, now what?

- Psychologist and TVI to review the results and discuss them in light of the vision impairment and the child's life experiences
- Report accommodations, modifications employed
- Caveat statements

Outcome of evaluations should support children with BVI in the mainstream:

- *Swimming?*
- *Floating?*
- *Or drowning?*

The Evaluation should not be used as the sole determinant of:

- Cognitive abilities
- Presence of additional disabilities
  - Must include adaptive behavior measures if intellectual disability is suspected.
  - Useful with BVI to estimate independence skills
- Eligibility for special programs

CAVEAT STATEMENTS

Caveat statement for all reports

There are no measures developed for children with visual impairments, therefore this child's performance is being compared to the sighted population on whom this measure was developed. The results should be considered conservative estimates of the child's cognitive abilities given their life experiences have been different from birth than those in the normative group.

Caveat statement (cont.)

Caveat: Precise determination of the cognitive ability level of individuals with visual impairments is particularly challenging. It is necessary ***to interpret findings in this report with caution*** for two reasons…

- The instruments used were **standardized on a sighted population,** and
- certain adaptive procedures were required in administration to allow for access to the materials:
  - *Enlargement/magnification*
  - *Braille, tactile representations*
  - *Score without bonus points for rapid completion*

EXAMPLES OF QUALITATIVE INTERPRETATIONS FOLLOW FOR YOUR READING PLEASURE

1. Qualitative interpretation

At some point, it may be necessary to decide whether to continue to attempt to administer items with visual stimuli. For example, Arthur persisted in calling the sample item on the WISC-V Picture Completion a banana because of its color and was unable to identify correctly any other pictures on this, or any of the other subtests. He was unable to identify objects in my office by sight, but was able to identify all of them by touch. This finding suggests a profound limitation in functional vision and supports the Functional Vision and Learning Media Assessments, which stated that touch is his primary learning channel. It also seems to explain why Arthur is currently having great difficulty in learning to read print.

adapted from Sattler & Evans, 2006

2. Qualitative interpretation

Carlos correctly completed some of the more difficult items on the WISC-V Block Design subtest, but required about 50% more time than is standard for sighted children his age. These results suggest that he can do visual construction tasks accurately when given adequate time to complete the work.

adapted from Sattler & Evans, 2006

3. Qualitative interpretation

Although Laura's performance on the WISC-V Symbol Search and Coding subtests was accurate, she worked slowly and very carefully on these subtests of processing speed. Laura has nystagmus (rapid involuntary movement of the eyes) and photophobia (extreme response to light) associated with albinism, and these typically cause her to need more time for detailed visual work.

adapted from Sattler & Evans, 2006

4. Qualitative interpretation

Despite his severe visual field loss, Leon completed all the WISC-V Block Design items within the time limits. To accommodate for his need to scan to see all the blocks in the pictures, these were scored without bonus points awarded for rapid completion. Leon stated that he loves puzzles and works on them for relaxation.

adapted from Sattler & Evans, 2006

5. Qualitative interpretation

Olivia was unable to respond accurately to items on the WISC-V Picture Concepts subtest when wearing her glasses. She was able to see the details of pictures when items were presented on the video magnifier. She also stated that she finds it easier to read fluently when using the machine.

adapted from Sattler & Evans, 2006

6. Qualitative interpretation

Karma, a college student dealing with increasing vision loss from glaucoma, struggled with the tasks on the WAIS-IV Picture Completion subtest. Early items, where the missing parts were large and obvious, were fairly easy for her. Later items, with more complex pictures, and smaller, less obvious critical details were very difficult. When viewing the pictures under video magnification, and given enough time to search for the details, she was able to complete several more items.

adapted from Sattler & Evans, 2006

7. Qualitative interpretation

Marshall, a student with moderate vision loss (visual acuity = 20/250) secondary to optic nerve dysplasia, presents an unusual cognitive profile for a student with visual impairment. His efficiency with visual tasks is more highly developed than are his verbal skills. Difficulties with Vocabulary and Similarities (particularly problems with extending responses to queries of one-point answers) led to a WISC-V Verbal Comprehension Index score of 86 (low average). …

7. Qualitative interpretation (cont.)

These results are supported by below average scores in academic measures of reading and listening comprehension. By contrast, with the use of a video magnifier Marshall was able to appreciate subtle details of pictures on the subtests of the Perceptual Reasoning Index, achieving a score of 112 (high average). Results suggest that despite his significant visual impairment, Marshall is primarily a visual learner, and that vision represents a significant learning channel strength for him.

Additional disabilities by eye disorder: Intellectual Disability more prevalent in these groups…

- Retinopathy of Prematurity
- Cortical Visual Impairment
- Etiologies with specific neurological involvement

Autism Spectrum Disorders
(subgroups of these have ASD)

- Retinopathy of Prematurity
- Optic Nerve Hypoplasia
- Anophthalmia/Micro-opthalmia
- Norries Syndrome
- Lebers Congenital Amaurosis
- Rubella Syndrome
- Peters Anomaly
- CHARGE Syndrome
- Alpert's Syndrome
- Albinism

Learning Disabilities

- Albinism
- Aniridia
- Cortical Visual Impairment
- Stargardt's Disease
- Retinopathy of Prematurity

Intelligence Testing Of Individuals Who Are Blind Or Visually Impaired: A Position Paper

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Debbie Willis, MA, APH

AER International, Bellevue, WA
July 20, 2012

http://www.aph.org/accessible-tests/position-papers/intelligence-testing/full/

Additional Resources

- *Psychoeducational Assessment of Students who are Visually Impaired or Blind, 3rd Edition,* Sharon Bradley-Johnson, Region 4 Education Svcs. Texas.
- *Making Evaluation Meaningful,* Marnee Loftin, TSBVI (under revision)
- *Collaborative Assessment,* Goodman & Wittenstein, AFB Press

Further Information:

- Carol Evans visionpsych@gmail.com
- *http://www.aph.org/accessible-tests/position-papers/intelligence-testing/full/*
- *http://www.myschoolpsychology.com/disability-information/visual-impairments/*

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