

## FUNCTIONAL VISION ASSESSMENT FOR CHILDREN WHO ARE YOUNG AND/OR MULTI-DISABLED

(Partial Reproduction of the Full Paper)

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### BACKGROUND INFORMATION

The sense of sight has been purported as the primary learning avenue for most individuals. Vision guides the developing child's motor milestones, as well as takes a lead role in all other developmental domains. Known as one of the two distance senses, vision allows for immediate access of incidental learning. In essence, vision "brings us the world."

The practice of completing a functional vision assessment (FVA) is one of the hallmark features of the vision service provider's role in the education of children who are visually impaired. The information that is gathered from a FVA is often quite different from what is typically gathered from a clinical vision evaluation at a doctor's office, as it is not diagnostic or treatment oriented. The goal of a FVA is to determine what and how the child sees, and what can be done to best facilitate learning through the visual sense.

For children who experience multiple disabilities, it is vital that an accurate FVA be completed. For many children, this information will make a tremendous difference as to how their educational programming is tailored to their learning needs. In some cases, the evaluator may be in a position to detect a visual problem in time for medical corrective treatment.

This paper will review the following components of FVA for children who are very young and/or who experience multiple disabilities: (a) the philosophy of FVA, (b) the preparation process, (c) the unique assessment needs of children with multiple disabilities, and (d) assessment content and strategies.

### PHILOSOPHY OF ASSESSMENT

The individual or team philosophy of the person(s) involved in completing a FVA will guide the direction and the outcome of the assessment. The following guidelines are offered as "best practice considerations" for both parents and professionals:

1. ***Parent information and participation are vital to the credibility of the assessment results.*** The first practice involves gathering functional vision observations from the family. Parents or primary caregivers are, almost without exception, the most knowledgeable persons about their child's functional abilities. They have the opportunity to observe the child in a variety of settings and daily routines. Simply put, most parents know their child better than anyone else.

It might be helpful to provide a format to "package" parent observations within the FVA process. For example, the seemingly simple question of "What is the smallest item that your child sees?" may actually be too broad or even nebulous of a question without further explanation. The question could be restated as, "At mealtime, do you notice your child picking up small pieces of finger food?" If the answer is yes, more information can be gathered about the overall dimensions, color, and contrast of the food and its background.

The second practice involves parent participation in the assessment process. Parent facilitated activities may yield more positive results than the same activity done by an unfamiliar person. Parents can provide invaluable information as to the communicative responses and intent of the child. Sometimes these communication signals are seemingly invisible to a person who is not familiar with the child; changes in breathing or muscle tone may indeed indicate a response to a visual stimulus.

Parent involvement also ensures a partnership relationship that denotes the importance of working together as a team on behalf of the child.

2. **It takes time to learn about a child's functional vision.** The optimal FVA occurs over several sessions and possibly involves more than one environment. This is of utmost important for children who experience multiple disabilities.

In some instances, it may actually be easier for a child not to use her vision (Jose, Smith, & Shane, 1980). Therefore, it takes time to learn how to best facilitate a visual response for a child. This is particularly relevant for the child who has cortical visual impairment and/or is multi-disabled.

If it is not possible to observe and interact with child over more than one session, it is important to check with the people most familiar with the child to determine whether a true perspective was gained during the one time evaluation.

3. **A team approach provides an optimal means to gather information about the child's functional vision.** Team members should include the family, and appropriate medical and educational professionals. Each person represented on the team can offer a unique perspective of the child's development.

It is of paramount importance that team members work together in both assessment and program implementation. For example, a physical therapist might provide positioning support during the evaluation, while the vision teacher works to determine the best focal range for object presentation.

The ultimate goal is to build a program that will meet the needs of the whole child. As with the parable noted in Toni Linder's (1990) book on transdisciplinary play-based assessment, each team member brings different color and texture to what ultimately becomes the tapestry (overall program) of the child. As each of the developmental domains is interwoven, so should the work of a team model.

4. **As with all early learning skills, functional vision behaviors are embedded within daily routines of play, communication, self help, and travel.** Assessment practices should reinforce the transfer of functional vision skills into real life settings.

One of the most important areas to factor the child's functional vision skills into will be his or her communication system. Eye preference, near vision discrimination, oculomotor coordination,

figure-ground capabilities, and responsiveness to color and contrast are all necessary factors when building a communication system for a child who is multi-disabled.

5. **Each child has a unique learning style.** Care must be taken to learn as much as possible about individual preferences for types and sequences of sensory information, motivating materials and interactions, pacing and cueing needs, general temperament, and level of mastery motivation.
6. **Both quality and quantity of visual skill development should be considered when formulating a picture of the child's skill level.** Actual developmental skills and factors of consistency, visual endurance, and the ability to generalize the skill should be evaluated.
7. **A FVA begins the moment the evaluator has the opportunity to observe the child.** A considerable amount of information may be acquired by pure observation of the child in her daily environments and routines.
8. **Expectations of the child and belief in the professional methodologies being implemented have direct ties to the outcome of the assessment.** A positive regard for "the possible" should be exercised, as well as a belief that each child has promise for learning. The demonstration of this promise is either encouraged or restricted by the attitude, as well as the talents, of the adults in the child's world.

### **FACT FINDING BEFORE THE ASSESSMENT**

Depending on the time schedule before the assessment, medical, and general developmental information should be gathered with parent consent. This information will yield important insight for preparing for the assessment process, as well as developing a detailed picture of the child's global sensory and learning needs.

**Medical Information:** Ophthalmological or optometric information of importance includes the diagnosis of the visual impairment (if one has been made), the age of onset, suggested medical treatment (as indicated), and the overall prognosis of diagnostic stability and visual potential. The type of visual disorder will provide insight what the possible functional vision implications might be. For example, the diagnosis of albinism suggests sensitivity to light and reduced distance vision.

Additional medical information will be necessary to gather to gain deeper perspective of the child. Other health or medical concerns such as concomitant diagnoses (cerebral palsy and/or a seizure disorder, confirmation of a presence or absence of a hearing loss, and feeding complications) will be valuable information to the assessment process.

If medications are taken, it is important to obtain information of the types of drugs used as many have side effects. Anti-convulsant medications in particular may influence the child's level of alertness, and both ocular and auditory functioning.

**Developmental Information:** Knowing the developmental level of the child's cognitive skills will provide a wealth of information what types of materials to bring and activities to plan (Levack, Stone, & Bishop, 1991). The person who completes a FVA will have richer assessment results, if she knows how to invite and sustain the child's interaction. A motivated child is one who is engaged at an appropriate developmental level and one who will ultimately perform at her optimal level.

The child's age will often provide usable information as to the possible developmental range. With a young child, the range of cognitive skills is obviously easier to estimate than with an older child. If the

child has been enrolled in an educational program, it would be helpful to ask for information regarding her developmental status.

### **ASSESSMENT TOOLS AND MATERIALS**

The selection of a FVA protocol is typically tied to the personal preference of the person using the tool. It is common to find a vision service provider who pulls from a variety of assessment tools to compile the favored components of different protocols.

The assessment tool, whether it is a commercial protocol or a homemade one, should be user and child friendly. User friendly infers that the evaluator has a strong working knowledge of the content of the assessment and is not dependent on constantly referring back to the protocol for the next step.

Child friendly infers that the assessment content not be restricted to the baseline example often given on a protocol as "how the skill is demonstrated," but rather can be expanded to the repertoire of the many ways the skill can be functionally demonstrated.

The testing materials will vary depending on the developmental and chronological age of the child. With some ingenuity, it is possible to use materials that are considered "age appropriate" while still maintaining the specific skill being probed. For example, eye-hand coordination can be assessed with a variety of types of containers. For the very young child, a shape container might be used whereas a crayon case or a change purse might be used for an older child or youth.

Testing materials should be reflective of the normal objects within the child's world and be culturally and therapeutically appropriate. Both real life items and toy items should be included. Research with young children who are deafblind indicates that materials that are novel and have visual complexity are often the most motivating. Assessment materials that might be needed in addition to actual testing items include adaptive seating devices for the child who has a physical disability. Assistive technology materials may also be appropriate.

### **ASSESSMENT ENVIRONMENT**

***Familiar versus Unfamiliar Settings:*** Many children demonstrate different personality characteristics and even abilities between environments that are familiar or unfamiliar. A familiar environment often yields optimal performance behaviors, as the child is relaxed and cognizant of what is expected within that setting. If an unfamiliar setting is utilized, time should be provided for the young child to explore (as desired) and to feel comfortable.

As possible, the child should be observed within her natural environment(s). This allows for a realistic portrayal of functional vision skills. For example, sensitivity to light could be observed on the playground for one child whereas it might be best observed in a vocational setting for a student in high school.

***Environmental Control Factors:*** The final consideration of the evaluation environment is whether it can be designed or controlled to enhance functional vision performance. The ability to control the amount, type, and position of lighting should be considered. In addition, possible background auditory and visual distracters should be eliminated to allow for optimal success of the child's performance. Children who are prone to a startle response and/or who have cortical visual impairment are especially susceptible to over-stimulation; thus, benefiting from a subdued, more controlled learning environment.

## FVA CONSIDERATIONS FOR THE CHILD WHO IS MULTI-DISABLED

A child who has a diagnosis of a visual impairment and additional disabilities presents an important challenge to the evaluator to find the best means of accessing visual and developmental potential. As with all children, this population of special children deserves careful attention so that optimal assessment results may occur.

Common concomitant disabilities include hearing loss, physical disability, and developmental challenges. In addition, the child may have health complications such as a seizure disorder, respiratory problems, and/or overall medical fragility.

Levack and colleagues (1991) lists several guidelines for assessing children whom are very young or who have significant developmental delays. Key recommendations from her work are as follows:

**Establish Rapport:** Before physically interacting with the child, time should be allowed to establish a baseline relationship. The play-based style of assessment is designed so that the evaluator follows the child's lead. The initial part of the session is a period of free play. A familiar person such as the parent(s), a sibling, or a teacher can be alongside the child, if this increases the comfort level of the child. As the child demonstrates an interest in an object, the evaluator can ease into the interaction using the object of interest as a means of introduction.

**Type of Stimulation Utilized:** The choices for visual targets or stimulation presentation styles are different for children who have different causes of visual impairment. Bright colors, visual complexity, and novelty are typically recommended as key characteristics of visual stimuli for children who have an ocular impairment. Within the range of ocular disorders, there are variables that may be better for some children and worse for others. For example, children with albinism may not respond well to brightly illuminated targets because of light sensitivity.

Bright colors, familiar objects, and reduction of visual clutter have been recommended as key characteristics of visual stimuli for children who have cortical visual impairment. A good rule of thumb with this population of children is "less is more" when it comes to visual presentations.

Each child, of course, must be viewed for her individual needs. It is best to begin with one type of visual information and gradually add more input as it appears that the child has either a tolerance or need for more sensory information.

**Importance of Positioning:** Careful attention to the child's physical positioning will increase visual performance. Anytime the child is in a position where she is falling into gravity; her energy will be deflected from the visual concentration task at hand. Simply put, the first priority will always be postural security. It may be too great a request for a child with a physical disability to provide both self achieved motor stability and a visual response.

An analogy for adults to consider is the scenario of attempting to read a book while maintaining balance on both tiptoes. While reading may continue for a period of time, it is probable that actual comprehension will be sacrificed at some level depending on the physical ease of maintaining one's balance.

If the child demonstrates head stability, it is because he has good trunk stability. Low postural tone will influence trunk stability and thus, head control. If the child has poor head control, he will require some form of artificial support to keep his head in a neutral position. For the young child, this might be a supine position on the floor, a lap of a favorite person, or a seating device that offers good trunk stability.

General guidelines for positioning according to Yates (1989) are as follows: (a) the child should be visually symmetrical and should not fall into gravity; (b) have positioning support for the bony parts of her body for physical comfort; (c) have support where it is necessary, but not at the expense of voluntary freedom of movement; and (d) be positioned in a way that does not reinforce an abnormal muscle pattern.

Children with physical disability may present great positioning challenges. Physical and occupational therapy consultation is important for optimal results.

**Wait Time:** “Wait time” is an assessment guideline that often gets good press, but lacks strong implementation. For the child who has a physical challenge and/or cortical visual impairment, “wait time” might mean a good long wait such as several minutes between trials. The amount of wait time between trials must be balanced with the child’s need for a prompt. A trained eye will assist with this judgment call, as will the collective expertise of the people who know the child best.

Once a child has had an opportunity to practice his response, wait time is typically decreased. It’s the early learning time that requires patience.

**Subtlety of Child Responses:** Observation skills must be finely tuned when assessing a young child, especially if the child has multiple disabilities. A response to presented stimulation may be seemingly invisible; a change in respiration, muscle tone, vocalization, quieting and/or slight body movement or stilling (Jose et al, 1980). For example, the child who has hypertonicity may respond to visual stimulation by a further increase in muscle tone.

**Response Patterns:** Important information can be gathered by observing what senses are used first when a child interacts with a new object. Vision may or may not be the first sense to be engaged. Many children who are cortically visually impaired and/or who are deafblind may have a distinct pattern of sensory exploration. The child’s head might be used to touch an object before the hands or the child may bring the object to his ear and listen for a sound before embarking upon a visual examination. This is all a part of the unique learning style of each child.