Every Child has Potential: Child-guided Strategies for Assessing Children using the van Dijk Framework

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Five year old Joseph was born with bilateral anophthalmia or no eyes and a severe hearing loss. He has hearing aids but they are generally not worn. He also has cerebral palsy but can walk using a walker. Joseph does not use symbolic language at this time but has many presymbolic communications. In order to determine his ability to learn as well as his knowledge base, the school psychologist at the school he was slated to attend attempted a formal assessment. The school psychologist asked his mother to bring him into the assessment room and then requested that she leave. Joseph sensed her absence and swung his arms around in effort to find her. When he was not successful, he began to cry. His breathing became rapid and his skin coloring appeared mottled as his stress increased. The psychologist ignored the crying and began the assessment by handing him two objects and asked him which was larger. Joseph put the objects into his mouth one at a time, rotated them and rubbed each across his lip several times. He did not respond to the question that he neither heard nor understood. The psychologist tried to take the objects from his mouth but Joseph screamed and clamped down on the object. The psychologist then tried to have him sort plastic shapes that were intended to be placed in holes of the same shape. Joseph felt the shapes, selected the circle and put it into his mouth. The psychologist firmly said, "no" and pulled it away. Joseph began to yell and slap his own face. The psychologist attempted to see if he could respond to different sounds but Joseph continued to cry and scream until he was given back the shapes. He felt each one and then picked up the circle and rubbed it across his lip until he seemed to be asleep. The psychologist wrote a note describing Joseph as "untestable" and functioning at a very "low level."

In recognition that assessments such as the one described above not only fail to provide accurate or useful information but are also very stressful to children with multiple disabilities, an alternative assessment framework was developed and refined by Dr. Jan van Dijk and Dr. Catherine Nelson. This framework known as the "Child-guided Assessment for Children with Multiple Disabilities using the van Dijk Framework" follows the lead of the child as it attempts to discover the processes a child uses to learn rather than what he or she knows. It builds upon child strengths as interventions are developed based upon the findings of the assessment (Nelson, van Dijk, Oster & McDonnell, 2009; Nelson, van Dijk, McDonnell, & Thompson, 2002). It is important to note that each assessment is unique and occurs in a holistic manner rather than a linear one such as is seen in traditional assessments. Therefore, the learning areas described are not assessed one at a time in any particular order but rather are explored as they emerge within the child-guided assessment routines. There is no set protocol nor predetermined assessment materials. The child's interests guide the selection of assessment activities and materials and the child determines the course of the assessment.

Although the approach is very fluid and requires skill and sensitivity on the part of the assessor, a recent study demonstrated that with training, teachers can facilitate the assessment with fidelity to assessment guidelines and reliably interpret the results (Nelson, Janssen, Oster, & Jayaraman, 2010). In order to introduce readers to the Child-guided Assessment, this chapter contains a description of the child-guided assessment techniques, an example of an assessment using the child-guided techniques, and a description of the observation areas examined in the framework.

Assessment Techniques

Preparation

In order for an assessment to be successful, it is important to gather information from teachers, parents, and caregivers about the child's likes and dislikes, perceived strengths, and the communication forms the child uses. This information will help in the selection of materials that might be used in the assessment and in the establishment of initial routines and activities. Important also is to ask parents and caregivers what they are hoping to learn from the assessment because parental priorities may be different from educational ones. It is hoped that by the end of the assessment, information useful in day to day living will be gleaned. Finally, observe the child while talking to parents. This observation will provide insight into the child's attachment

relationships with the parents and will give information on skills the child exhibits with others. Such observational information will also provide ideas for assessment routines and activities. An important tenant of the assessment is to always respect both the child and the family throughout the process-from the initial interview through discussing assessment results and planning intervention.

Assessment

For the child to feel comfortable, it is important to assess in an environment that is comfortable and/or familiar to the child. This could be in the classroom or home. If it is not possible to assess in either, take time to familiarize the child with the new environment. Allow time for exploration and consider involving parents or persons familiar to the child in the assessment process. The parent or teacher can even facilitate the assessment with guidance from the primary assessor if they are comfortable with the process.

Begin the assessment by following the child's movements and interests. Watch what attracts the child's interests and build upon such interests. Remember to build from child strengths using the information learned in the interviews described above and always return to child strengths when the child reaches a point of frustration. Adapt your emotional level to that of the child but also assist in the modulation of his or her emotional level. For example, if a child gets excited about an activity, become excited with her but if she is upset or nervous, reduce the level of stimulation and use a calm, quiet voice as you help her regulate her emotional state. Throughout the assessment, respond to each of the child's behaviors as communication. Is the child communicating that he or she wants to continue the routine, take a break, or move to a new activity? The behaviors the child uses communicate this information and it is crucial in the child guided-process to respect these communications.

Central to the assessment is the establishment of *routines* that are interactive and of interest to the child. To establish such routines, the assessor begins by joining in or imitating what the child does. The child's reaction to this imitation is responded to as communication and turn-taking begins. This turn-taking conversation is the foundation of a pleasurable routine from which the assessment builds. Once the routine is established and a few turns are taken, stop the routine in order to elicit a signal from the child that routine continuation is desired or the child wants to move to something new. The child's communication is promptly responded to. By using this technique, you are following the child's lead and also providing opportunities and reinforcement for communication. By pausing or stopping routines, you allow the child to demonstrate anticipation of the next steps of the routine. The discovery of the unique *mirror neuron system (MNS)* in 1996 by Rizzolatti, Gallese, Fadoga. and Fogassi reinforced the principles of the Child-Guided Approach. It was discovered that through "resonating" with a person (e.g., imitating his actions) a system of neurons is triggered in the brain of the observer that is like those of the person who is executing the action. Similar findings were reported within the auditory system, for example, the mirroring of a person's laughing or crying triggers the same emotional response in the observer. When observing that a person is being touched, the observer feels a similar experience (Keysers, 2004). Therefore, we see that this process is fundamental to understanding an individual's emotions. In the assessment process, try to elicit the Mirror Neuron System for every sense. For example, imitate vocalizations for the auditory MNS, facial expressions for the visual MNS, movements for proprioceptive and vestibular MNS, and mutual touching for the kinaesthetic/ tactual MNS. The use of various Mirror Neuron Systems contributes to the understanding of which sensory avenues are most suitable for interaction, communication, and learning.

After a routine is established, making *modifications* to it allows many observational opportunities. To see if a child will imitate new steps, add information, one sensory modality at a time. By adding information slowly, you can observe the child's responses to each piece of sensory information and avoid sensory overload. At times, insert a surprise element to observe the child's ability to anticipate the old routine and respond to change. Discontinuing the routine and then coming back to it later in the assessment allows you to see if the child remembers and anticipates the old routine.

Throughout the assessment, *create learning experiences* based on child interests that allow the child to demonstrate existing skills, adaptation and accommodation of information, and the ability to learn new skills. An example of an assessment using the above techniques follows. As you read it, see how it contrasts with Joseph's assessment.

Ten year old Jessie was diagnosed with severe Autism and cortical visual impairment. She communicated at a presymbolic level and was able to walk independently. Her parents and teachers reported that she enjoyed music and engaged in repetitive self-stimulatory activities with certain toys. They believed that she was mostly in "her own world" and seldom interacted with others. Through the assessment, they hoped to learn how to increase her social interaction. This Child-guided Assessment was conducted by the music teacher, Emma, at the school Jessie attends. Music class was a favorite activity of Jessie's and it was felt that Emma would be best able to facilitate Jessie's assessment.

Emma began the assessment by having Jessie sit beside her at the piano. She gave her a box that held several small instruments including Jessie's favorite clear plastic "rainmaker." Jessie promptly picked out the rainmaker and began rubbing it on her lips and turning it on end several times. She held it very close to her eyes as she watched the small discs inside move to the other end. Emma began playing a lively tune on the piano and singing "Hello Jessie." Jessie responded by wiggling her body and shaking the rainmaker in time to the music. She briefly touched Emma's face and her hand. When Emma slowed the music down, Jessie slowed her shaking down. When she stopped shaking the rainmaker and again rubbed it on her lips, Emma began playing high notes with her right hand only. Jessie took Emma's left hand and put it on the middle of the key board and Emma returned to playing the lively music. Jessie responded by again shaking the rainmaker in time to the music. This routine was repeated several times. At one point, Jessie took Emma's hand and put it on her own back. Emma then scratched Jessie's back and this new change was incorporated into the routine.

When Jessie appeared more interested in her self-stimulatory activity with the rain maker than in the piano, Emma took the box of instruments out again and tried to interest Jessie in a new one. She handed Jessie a shaker but Jessie would not take it. Instead, she took Emma's wrist and hand with the shaker in it and began to shake it. Emma began shaking the shaker and Jessie resumed shaking the rainmaker in turn-taking fashion. When Jessie stopped taking turn-taking, Emma returned to the box of instruments and selected a rolling rasp-like toy that made a noise similar to the one made by the rainmaker. When she heard the new instrument, Jessie put down her rainmaker and listened intently. When Emma stopped rolling it, Jessie took a turn rolling it and engaged in several turns with Emma then picked up the rainmaker again. Emma returned to playing the lively music and singing Jessie's name. Again, when Jessie turned to more solitary activities, Emma played the one-handed high notes and Jessie returned Emma's left hand to the key board. At one point, Emma did not resume playing and Jessie lifted Emma's hand up and down on the key board to get the music going again. As the assessment ended, Emma requested that Jessie return the rainmaker to the box as was the custom at the end of music. Jessie initially refused and hid the rainmaker behind her but Emma kept holding the box out and Jessie finally put it back in.

During the course of this assessment, Emma allowed Jessie's interests and emotions to guide the process. Through her piano playing, she mirrored the speed and rhythms of Jessie's play with the rainmaker thus gaining an understanding of Jessie's emotions. She established turn-taking routines with the piano playing and the rolling rasp toy. When Jessie wanted her to return to two handed piano playing mid-keyboard, Emma responded positively to her communication. When Jessie stopped turn-taking, Emma again responded to the communication that Jessie was finished with that activity and moved on to a new one. Jessie was allowed to make choices throughout the assessment and her strengths were built upon. Clearly, the process was enjoyable to Jessie, but what was learned?

In the next section, we turn our attention to the assessment framework. This framework provides an overview of important information that can be gleaned, with facilitation, throughout the assessment process. The framework examines what the child approaches or likes and what he or she withdraws from, the sensory channels a child uses to take in information and learn, information processing, social interaction, communication, and problem solving. Specific questions asked in each area are contained in Table 1.

The van Dijk Framework for Assessment of Individuals who have Severe Multiple Disabilities

Approach-Withdrawal

- What are the individual's engagement cues?
- What are the individual's disengagement cues?
- What appears to motivate the individual?
- What does the individual seem to turn away from?

Sensory Learning Channels

- How does the individual appear to take in information?
- How does the individual react to sound?
- How does the individual react to vision?
- How does the individual react to touch?
- Does the individual use more than one sense at a time?
- Does the individual exhibit engagement or disengagement cues in response to particular sensory information?

Biobehavioral State

- What is the individual's current state?
- Is the individual able to control or modulate his/her state?
- How much time does the individual spend in an alert state?
- What range of states does the individual show and what is the transition pattern between states?
- What variables affect the individual's state?

Orienting Response

- What factors elicit an orienting response?
- How does the individual exhibit an orienting response?
- What sensory channels appear to be associated with orienting response (sensory information that triggers the response and the senses utilized)?

Memory

- Does the individual habituate to familiar stimuli?
- How long, or how many presentations of stimuli are necessary before there is habituation?
- Does the individual attend again if the features of the stimulus change?
- Are reactions differentiated?
- Does the individual react differently to familiar and unfamiliar people?
- Does the individual appear to have object permanence (understands that something still exists even if it is not currently visible)?
- Does the individual associate a preceding event with one that follows?
- Does the individual appear to anticipate an upcoming event?
- Does the individual react when there is a mismatch to expectations?
- Is the individual able to learn a simple routine?
- Is the routine learned, remembered?

Social Interactions

- Does the individual orient to a person?
- Does the individual exhibit secure attachment with important individuals in his/her life?
- Does the individual engage in turn-taking when he/she begins the interaction?
- Does the child engage in turn-taking when others begin the interaction?
- How many turns are taken before disengagement?
- In response to partner's interaction, does the individual add more to turn-taking interaction?

Communication

- Does the individual demonstrate communicative intent through the use of signals, vocalizations, gestures etc.?
- Describe the communications used.
- Are signals used with consistency?
- Does the individual use differentiated communications? Describe the communications and their probable meanings.
- When presented with options, does the individual make choices?
- Does the individual use conventional gestures?
- Can the individual use one item or symbol to stand for an activity or object?
- Does the individual demonstrate understanding of communication symbols (auditory, visual, or tactual)?
- Does the individual use symbolic communication? Describe.

Problem Solving

- Does the individual demonstrate cause and effect?
- Does the individual demonstrate an understanding of means/ends or the use of an intermediate step to solve a problem?
- Does the individual demonstrate understanding of the function of common objects?
- How does the individual approach a problem?
- Does the individual maintain attention and persist?

Adapted from: Nelson, C., van Dijk, J., McDonnell, A.P., & Thomson, K. (2002). A framework for understanding young children with severe multiple disabilities. In: Research to Practice for Persons with Severe Disabilities, 27, 97-110

Assessment Framework

Approach-Withdrawal

Discovering what a child likes and dislikes is important both to the success of the assessment and to intervention that is planned based on the assessment. The interviews before the assessment provide this information as well as careful observation and the following of the child's lead throughout the assessment.

During Jessie's assessment, it was noted that she enjoyed more lively music and disliked the music played by one hand in the upper tonal range. She liked having her back scratched and preferred the rainmaker over the other instruments. She would use the rolling rasp but only with Emma's involvement.

Sensory Learning Channels

In the area of sensory learning channels, the assessment looks at how a child uses sensory information. This may be demonstrated through the types of sensory input the child appears to like or dislike. It can also be demonstrated by employing the mirror neuron systems of each sensory area as was described in the section on routines. Building routines one sensory avenue at a time allows the observer to see which piece of sensory information the child responds to and how he or she responds to the information.

Jessie appeared to like both auditory and visual components of the rainmaker. She held it very close to her eyes to observe the falling discs and could turn it in time to the piano playing. She appeared to prefer musical notes in the mid- range to high notes. She also repeated rolling the rasp in order to make sound. She seemed to like the tactual sensation of having her back scratched. In planning intervention, educators should build educational routines using these sensory preferences and also use preferred sensory input to positively reinforce desired behaviors. Less preferred learning channels might be strengthened if paired with preferred ones.

Information Processing

In order for sensory information to be processed in the brain and utilized in learning, many things must occur. First, the individual must be an alert enough *biobehavioral state* to allow stimuli to be taken in, then he must *orient* to the information and compare it to what he already understands. Because he cannot simultaneously pay attention to all of the many pieces of information that bombard him, he must "tune out" or habituate to information deemed irrelevant or not needing his immediate attention (McCall, 1994). When certain stimuli occur over and over within routine activities, the entire chain of events is integrated and becomes "hardwired" in the brain. It thus stored in the brain as a whole experience or scheme rather than as separate fragments of information and is *remembered* for later recall (Kellman & Arterberry, 2000; Luria, 1996; van Dijk, Klomberg, & Nelson, 1997). This storage of integrated schemes allows the individual to *anticipate* what is coming because he knows the chain of events. He learns to accommodate for changes in his expectation of what will come, and learns that he influence the unfolding events in the chain.

These learning processes are the foundation of the child-guided assessment as the assessor examines the child's

- biobehavioral state,
- the orienting response and
- memory (including habituation and anticipation).

These processes then are utilized in social interaction, communication, and problem solving.

Biobehavioral State

Biobehavioral state is an individual's state of arousal. Alert states are necessary for learning to occur but all of the sleep states are also important. Nine levels of biobehavioral state are described in the Carolina Record of Individual Behavior (CRIB) (Simeonsson, Huntington, Short, & Ware, 1988). These states are:

- Deep sleep in which there is a lack of responsiveness and body movement
- Quiet sleep in which there is a general lack of movement and regular respiration
- Active sleep with irregular respirations, movements of the eyes and face, increased responsiveness

- Drowsy with slow responses and glazed, heavy lidded eyes
- Quiet awake seen as minimal body activity, attentive to stimuli, and increased facial tone
- Active awake with a lot of body activity and much sensitivity to stimuli
- Fussy awake with general fussiness, irregular respiration, and heightened sensitivity to stimuli
- Mild agitation seen as increased fussing and crying
- Uncontrollable agitation with crying, changes in body color, and very irregular respirations

Biobehavioral state can be controlled both internally by the needs of the child and externally by the environment (Barnard & Kelly, 1990). Children with central nervous system impairments often have difficulties making smooth transitions between states (Guess et al., 1988; Siegel-Causey & Bashinski, 1997). They may stay in a drowsy or sleep state for long periods of time and have difficulty arousing (Als, Tronick, Adamson, & Brazelton, 1996; Richards & Richards, 1997). If they have difficulty controlling or modulating their level of arousal, they may become over-stimulated with increased levels of agitation or, in an effort to protect themselves from overload, move into a sleep state (Richards & Richards, 1997; Spangler & Grossman, 1993).

Assessment techniques in this area include asking parents in the interview about the range of states, including both sleep and wake states that the child exhibits and how they are controlled. Make sure that during the assessment, the child is in either quiet or active awake states and watch the child's level or stimulation and how well he or she controls it. If the child is over-stimulated, decrease the level of stimulation to one that is more easily handled.

During Jessie's assessment, we saw that she was in both quiet and active alert states. She had periods of mild agitation when the music changed and when it was time for music to be over. She controlled her state internally by turning her attention to self-stimulatory activities such as rubbing the rainmaker on her lips. It was controlled externally by the rhythm of the activity. In her intervention it would be important to assist her in modulating her state by respecting her need to take a break and changing activities as needed.

Orienting Response

Once an individual is aware of a stimulus, he or she must orient to it. The orienting response directs attention to allow maximum information gathering. This might involve eye focusing and widening, turning toward the stimulus, becoming still, or reaching and touching the stimulus. The ability to orient is very important to learning (Als et al,. 1976; Richards & Richards, 1997; van Dijk et al., 1997). A child in a low state such as sleep or drowsy much of the time might orient infrequently. A child with severe sensory impairments might not perceive outside stimulation in a manner that is strong enough for the orientation response to occur. However, other children with multiple disabilities might have an orientation response that is too intense and they withdraw into a sleep state (Richards & Richards, 1997). If outside stimulation is either too stimulating or not stimulating enough, the child might turn to his body and action in self-stimulatory behaviors (van Dijk et al., 1997).

Jessie oriented to the visual stimulus of the discs falling, the sound of the rainmaker, the piano playing, the rolling rasp, and the feel of her back being scratched. She also showed a strong reaction to the change in the piano playing. Jessie oriented by opening her eyes widely, turning to the stimuli, and holding the object close to her eyes, perhaps in an attempt to block out other stimuli. Most orientation to Emma was seen in taking her hands and moving them. She did, however briefly touch Emmas's face and hands when the music first began. As mentioned above, when overwhelmed, she engaged in self-stimulatory behaviors.

Memory

The next steps in information processing involve encoding information in the brain for storage and retrieval. Major components of this process are habituation and anticipation and routine learning.

Habituation: Once a stimulus is perceived as no longer novel or has been deemed to be non-threatening or not reinforcing, habituation or the turning of attention to a new stimulus must occur because we cannot pay attention to all of the varird stimulation that is coming in to the brain (Colombo & Mitchell, 1990; McCall, 1994; van Dijk et al., 1977). We must be able to "tune out" irrelevant information in order to discern that

which is currently important. However, vital to the process is also the ability to return our attention if something about the stimuli changes. This is called dishabituation. As we observe habituation and dishabituation, we see an individual's abilities to perceive and conceptualize specific stimulus features (Ciechetti & Wagner, 1990). We can also get a picture of the individual's ability to discriminate and categorize based upon important stimulus features (Xu, Carey, & Welch, 1999; Younger & Fearing, 1999). For example, if unable to recognize small changes in a stimulus and come back to attention (dishabituation) when shown two different but similar line drawings in a picture communication system, the child might not be able to recognize subtle differences between the pictures and thus would not be able to functionally conceptualize and use such systems (Remington, 1996). Habituation also allows discrimination among familiar and unfamiliar people. When an infant finds that his mother provides his food, her particular face and smell become stimuli that are reinforcing and in need of continued attention as social attachment is built.

In the course of Jessie's assessment, we saw that she habituated to the lively music and the rolling rasp and turned her attention back to her rainmaker. She also dishabituated when the music changed. We saw that she shifted attention between the instruments but we don't know if she could do it in response to more subtle changes. This would be important to pursue if future intervention will include alternative and augmentative communication systems.

Anticipation and routine learning: The ability to anticipate next steps and learn and remember routines is essential to learning. An infant learns that when he hears his mother approach his crib, she is likely to pick him up. Using this knowledge of a routine, he reaches up to her as she approaches his crib. If she is interrupted by the doorbell ringing, he figures out that if he cries she will come back to his crib. Through this action, he learns the power of communication in environmental control (Morse, 1992; van Dijk et al., 1997) and learns he can develop strategies to solve problems as he accommodates new information to his existing mental scheme. As his mother appears, disappears, and reappears, he begins to develop object permanence or the ability to hold an image in memory over time (Kellman & Arterberry, 2000). These mental images will be key to learning symbolic thought as the child has a need to symbolize that which is in his mind but cannot be seen.

In order to assess anticipation and memory, it is important to establish predictable and enjoyable routines based on child interests. Once a routine is established, pause to see if the child anticipates the next step and will signal whether the routine should be continued or stopped. Adding a surprise element to a well-established routine will also provide information as to the child's understanding of the next steps in the routine and give the child another opportunity to communicate his surprise at the routine change. To assess short-term memory of the routine, discontinue an established routine and come back to it later in the assessment process.

Jessie was able to learn several routines. She learned the routine of turning the rainmaker on end to get the discs to come down repeatedly, she learned to turn it upside down in time to the music, and learned to roll the rasp in turn-taking with Emma. She learned to move Emma's hand to get her to return to her more favored tunes and learned she could move Emma's hand to scratch her back. She also appeared to have an idea that the box of instruments meant it was time to put the rainmaker away and go back to class. At this time, the transition from music class might be easier if a calendar system was implemented. In such a system, pictures or actual objects from activities of the day are arranged in order of their occurrence and the child is provided a clear way to predict which activity will come next and when an activity is finished. It also provides a joint referent which allows child and teacher to communicate about upcoming events.
For example, music time in Jessie's calendar might be represented by a picture of the rainmaker in the instrument box and her next class, cooking, might be represented by a picture of her favorite wooden spoon. Before music class, the teacher could help Jessie take the picture of the rainmaker off the Velcro schedule and she could pantomime the use of the rainmaker with Jessie. At the end of music, Emma could again show Jessie the entire schedule, help her return the picture symbolizing music to the calendar and then take off the cooking picture and pantomime the use of the wooden spoon. In this way, Jessie would know that although music was ending, another event would begin and she could prepare herself for the change. In addition to helping provide smooth transitions and providing a basis for conversations, schedule

systems help the child move to symbolic language (Blaha, 1997;MacFarland, 1995; van Dijk, et al., 1997; van Dijk & Nelson, 1998).

Social Interactions

Within social relationships, children develop secure attachment with their caregivers which then provides the base from which they are able to explore their environment (Shore, 1997). If children have secure attachment, they see their caregivers as responsive and available and view themselves as loveable and worthy (Bowlby, 1973). Secure attachments are built through reciprocal interactions between children and their caregivers. Through these interactions, children learn about their relationships with other people and their environment and this leads to the development of their self-concept (Ainsworth, Blehar, Waters, & Walls, 1978; Bretherton, 1992, 1995). In order for such secure attachments to be build, caregivers must be responsive and sensitive to all of the child's communications and the child must in turn, respond to the caregiver. These turn-taking routines develop into intricate dances with each partner reading the cues of the other and adjusting his or her behavior accordingly. Through such routines, children learn the rules of social turn-taking (Barnard & Kelly, 1990). As was seen in the section on mirror neurons, the brain of a typically newborn infant comes equipped to begin such turn-taking interactions as each MNS is ready to mirror the actions of another person. Unfortunately, there are many threats to the building of secure attachments in children with multiple disabilities including long periods of time hospitalized and thus separated from givers, low arousal with not enough alert time to spend in social interactions, or too high of arousal leading to over-stimulation. The child might have unusual or difficult to read communications and sensory impairments might limit the child's ability to read caregiver cues (Janssen, Ricksen-Walraven, & van Dijk; van Dijk, 1999; Vervloed, van Dijk, Knoors, & van Dijk, 2006).

In the child-guided assessment process, begin by observing the child with his or her caregiver. Does the child orient and show interest in human faces and voices? Does the child seem to have secure attachment with his caregiver? This can be observed by first watching the child with the caregiver during the interview and then asking the caregiver to leave for a short time and then return. When the caregiver returns, a child with secure attachment will typically greet the caregiver positively upon his or her return. A child with more insecure attachment might seem angry, resistive, or passive when the caregiver returns (Ainsworth & Bell, 1970; Ainsworth et al., 1978; Bretherton, 1992). During the assessment itself, look at the child's ability to engage in turn-taking interaction by building conversational routines and observing the child's ability to take turns both when he begins the routine and when others begin the routine. Also look at the ability to maintain turn-taking routines and add new information to them.

Jessie engaged in turn-taking both when she began the interaction and when Emma began it. She also added new information to the turn-taking. She seldom oriented to Emma's face during the assessment but there was a brief touch to Emma's face and hands at the beginning of the piano playing and singing of "Hello Jessie." She focused most of her attention on the objects. She showed little reaction to her parent leaving or returning. An intervention goal might be to increase her response to the faces of others by using the "Hello Jessie" music. Holding visual objects she does orient close to the faces of people might also be useful. When interacting with the rainmaker, Jessie turned the rainmaker over in time to the piano, but it was simultaneous rather than in reciprocal turns. Intervention might involve trying to increase the reciprocal manner of turn-taking. For example, the back scratching could be turned into a more reciprocal activity.

Communication

Communication is an exchange of information between two or more persons. It has both receptive and expressive components and may be nonsymbolic or symbolic. Nonsymbolic communications include engagement cues such as smiling or reaching and disengagement cues such as crying or turning away. Also included are facial cues, body movements, gestures, postures, assuming positions, acting on and with objects, depictive actions, withdrawal, and aggressive or self-injurious behaviors (Siegel-Causey & Guess, 1989; Siegel-Causey and Bashinski, 1997). Symbolic communications include oral language, sign language, and print. Important to both types of communication are a motivation to communicate, turn-taking, and joint attention (Bruce, 2005; Siegel-Causey & Guess, 1989; van Dijk & Nelson, 1998).

In assessing communication using the child-guided approach, ensure that the child has a need and multiple opportunities to communicate. Starting a routine and then stopping it is one technique to provide communication opportunities. Others include offering choices, pausing to allow the child to take a turn, and providing adequate wait time for turn taking. All interactions should be pleasurable and motivating. In the course of the assessment, try to interpret what the child is trying to communicate by looking the context and the antecedents and consequences of the communications. Look both at the consistency with which a child uses a given communication to convey a particular idea and his or use of different communications to convey different meaning. It is important in the assessment to look at both receptive and expressive communication as the child's level of receptive communication might be quite different than the expressive level.

Jessie communicated via nonsymbolic communications including wiggling, briefly smiling, touching Emma's face and hands, taking Emma's hand to move it on the keyboard and taking her hand to her own back for a back-scratch. She also communicated that she didn't want the activity to end by hiding the rainmaker behind her back. She made choices between the instruments and communicated interest by stopping her rainmaker activity and closely examining the rolling rasp. At this time Jessie seems to be ready to use representational pictures such a photograph of her rainmaker in the instrument box to symbolize music. This is obviously a pleasurable and motivating activity for Jessie. Nonsymbolic communications should be responded to in order to increase their frequency.

Problem Solving

Problem solving involves attending to a problem, integrating what has been previously learned, and accommodating it to the new problem (Kellman & Arterberry, 2000). As children encounter problems and attempt to solve them, they learn that they can cause something to occur (cause and effect). They also can develop means-end or the use of an intermediate step or tool to solve a problem. In problem solving activities, children also learn relationships between people and objects and parts of objects to their whole (Linder, 2008).

Again the technique of starting a routine and then stopping it allows for observation of problem solving. It creates a need for the child to find a way to begin the routine again. Another technique is to add a dilemma that must be solved. However, this should only be done when the child is comfortable with the assessment. If the child is unable to solve the dilemma, help her with it and then move back to where she was comfortable. Observe to see whether the child attempts to solve a problem, what techniques are used to solve it, and if the child persists in trying to solve the problem.

Jessie demonstrated problem solving when she took Emma's hand and put it on the keyboard and when she took Emma's hand and put it on her back. Moving Emma's hands showed both cause and effect and means-end. She also demonstrated some persistence in her problem solving. She tried to solve the problem of being asked to put the rainmaker away by attempting to hide it behind her back. Intervention in this area would involve refraining from solving problems for Jessie too quickly. She should be allowed time to formulate her own solutions. She also should be involved in all phases of an activity from getting materials out through putting them away in order to increase her independence and understanding of her world.

Summary

The Child Guided-Approach to Assessment using the van Dijk Framework for Assessment presents an alternative to traditional assessments that are often not useful to children with multiple disabilities. Too often traditional assessments result in endings such as was seen in the scenario of Joseph's assessment at the beginning of the chapter. The Child-Guided Approach, on the other hand, allows the child to demonstrate his or best skills in environments and routines that are non-stressful and that build on child strengths. Assessments conducted using the approach are by nature unique and assessors must become very attuned with the children they are assessing as they create routines together. The assessor who uses the Child-Guided Approach must understand how children learn and become a careful observer of child behavior in order to gain useful information from the assessment. However, what is learned from the assessment can be easily used within intervention because teaching in motivating routines actually occurs

throughout the assessment. The assessor can discover what motivates the child, through which sensory avenues the child learns best, routines the child enjoys, and the strategies the child uses to learn.

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