Introduction to the Holistic Communication Profile: Integrating Pivotal Social and Cognitive Milestones in Communication Programming

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Communication development does not happen in isolation. There are a select number of cognitive and social milestones that share a strong relationship with achievements in communication. Further, there is evidence that direct instruction of these milestones yields greater gains in communicative development than communication intervention alone. In addition, there is a strong relationship between play and communicative development. For example, symbolism appears in play and communication at about the same time and this understanding of symbolism is essential to the development of language. Effective communication programming is grounded in an understanding of how communication development is influenced by achievements in other areas of development. Holistic communication profiles provide teams with a structure for assessing and then recording a child's current level of performance in communication and on milestones in other areas of development that have been demonstrated to influence communicative achievements. Such profiles support teams to more fully address the complex communication instruction needs of children who are deafblind.

A prototype of the *Holistic Communication Profile* is included below. The four aspects of communication (form, function, content, and context) are addressed within the profile. Although this prototype was developed for children who are deafblind, it may be used with children who have other disabilities. Completion of the profile can be based on day-to-day knowledge of a child's communication, observations, and/or interviews of those who know the child well. The items shared within the profile can be shaped into questions to be posed within an interview as part of a structured informal assessment. Note that some of the sections or sub-sections may not be relevant for a particular child (such as the expressive form of verbalization, for example). In such cases, those sections may simply be deleted when creating an individualized profile. A sample *Holistic Communication Profile* (on a young boy with CHARGE syndrome follows the prototype. A full explanation of the components of the holistic communication profile, references for further reading, and a different sample profile (also on a boy with CHARGE syndrome) can be found in the following article:

Bruce, S. M. (2010). Holistic communication profiles for children who are deafblind. *AER Journal: Research & Practice in Visual Impairment & Blindness, 3*, 106-114.

Prototype: Holistic Communication Profile: Integrating Pivotal Social and Cognitive Milestones in Communication Programming

Child:

Date of Birth or Age:

Etiology/ies/Syndromes:

Visual Condition(s)/Vision Status:

Hearing Condition(s)/Hearing Status:

Other Sensory/Perceptual Issues:

Motor Skills Status (gross and fine):

Psychological:

Placement:

Level of Communication: [Note that one could describe the child's level of communication based on findings from the *Communication Matrix* (Rowland, 2004). (Available at http://www.communicationmatrix.org)]

Expressive Forms:

Body language/facial expressions:

Vocalization:

Objects/partial objects:

Textures:

Photographs:

Line drawings:

Gestures (include contact gestures, proximal gestures, and distal gestures):

Signs:

Verbalizations:

Speech Generating Devices(s) (SGD) (switches & other speech generating devices used to express verbalizations):

Receptive Forms:

Body language/facial expressions:

Vocalization:

Objects/partial objects:

Textures:

Photographs:

Line drawings:

Gestures (include contact gestures, proximal gestures, and distal gestures):

Signs (initiated and imitated):

Verbalizations (initiated and imitated):

SGD (switches & other speech generating devices used to express verbalizations):

Mental representation—use of icons, indices, and symbols:

Intents/Functions Expressed and in what form(s):

Calls for attention:

Answers:

Protests/refuses:

Requests for action:

Requests for object:

Labels/names:

Comments on action:

Comments on object:

Greetings:

Other intents/functions:

Rate of Intentional Communication Acts and/or High Frequency Rate Contexts (contexts in which the child most often initiates communication):

Sharing Joint Attention (may include sharing affective states with others, gaze shifts, and/or tactual shifts for children who are visually impaired):

Sharing Affective States:

Imitation (other than words)**:**

Evidence of Memory:

Object Permanence:

Means-End/Cause-Effect/Problem Solving:

Discrimination/Categorization:

Self-recognition/Individuation:

Repetition/Repair (measures of persistence)**:**

One-to-One Correspondence:

Object Handling or Level of Play:

Communication Context Considerations:

> *Physical Environment (environmental characteristics that best meet the child's needs):*

> *Individual's Characteristics (disability and non-disability characteristics that may influence communication):*

> *Communication Partners (knowledge, skills, and desirable behaviors of adult and peer partners):*

> *Activities and Routines:*

> *Process of Communication:*

Summary and Recommendations for Communication Programming Emphasis:

Sample
Holistic Communication Profile: Integrating Pivotal Social and Cognitive Milestones in Communication Programming

Child: David

Age: 7 years, 10 months

Etiology/ies/Syndromes: CHARGE syndrome

Visual Condition(s)/Vision Status: David functions monocularly (better use of right eye). He has chorioretinal colobomas, intermittent left esotropia, and a restricted superior field. No distance measure of acuity is available. His near-point acuity is near normal in the good right eye. The prescription is +.50 D both eyes, but he often refuses to wear his glasses.

Hearing Condition(s)/Hearing Status: David has a severe bilateral hearing loss.

Motor Skills Status (gross and fine): Good gross motor development (ambulates, climbs), typical use of arms and hands for his age

Psychological: Developmental delays

Placement: Private day school, Deafblind Program

Level of Communication: David's levels of communication were determined by assessing him using the *Communication Matrix* (Rowland, 2004).

> *Refuse:* David expresses at Level VI. He produces single signs and he expresses communicative repairs (not just repetitions) when expressing refusals. He uses pictures of objects and activities with meaning (accomplished at Level V).
>
> *Obtain*: David uses single signs to make requests (Level VI). When he does not know a sign for what he wants, he uses a combination of gestures. If misunderstood, he will repair his requests by using gestures and signs, and when necessary, by physically guiding adults.
>
> *Social:* David directs the attention of others through his signs and gestures (Level VI). He pairs this with social behaviors associated with Level IV.
>
> *Information*: David communicates the information function at Level VI. He is actively labeling/naming and he shows interest in learning new labels.

Overall: David is expressing at Level VI. He demonstrates emerging symbolic expression.

Expressive Forms:

Vocalization: David expresses laughter, happy sounds, and occasionally, whining sounds (when he is ill). He may cry when a preferred object is lost. His vocalizations are not word-line and are vowel-like sounds.

Objects/partial objects: David understands how to use objects in communication, but he seldom needs to use this form. His daily schedule includes the use of pictures, photos, and line drawings only.

Pictures/Photos/Line Drawings: David uses a variety of object and line drawing representations and he easily learns new representations (too many to list). Thus, he has mastered representations that are more abstract in nature.

Gestures: David demonstrates varied and extensive use of gestures. He expresses contact, proximal, and distal gestures.

> David *reaches* to request a plate for snack, to request help (including help with manipulation of objects), to request a picture from his teacher, to find out what's in the basket at morning circle, and to request objects he desires. He also reaches for his teacher's hand to request assistance. He performs a two hand/arm upward reach to request that an adult pick him up.

> David *pushes* unwanted objects away (to express refusals).

> David *pulls on* adults and then guides them to a location so that he can then point to make a request.

> David *points* to choices on a game board. He points to objects that he desires.

Signs (initiations and imitations):.

> David *initiates* the following signs: waffles, helicopter (during a game), giraffe (during a computer game), more (to request more of an object or activity), finished (used to indicate when he wants to be finished as well as a comment), more waffle help (3 sign utterance), school (when hears word in song), basket (in response to "What's next?"), the basket (2 sign utterance), drink, more chips (2 sign utterance), ketchup, car, paint, paint on the paper (4 sign utterance).

David *imitates* the following signs (in addition to the signs that are listed above that he initiates and imitates): open (signed to request that the refrigerator be opened at snack time), cost, pouring syrup, me, hi, want, circle, boat, want to eat waffles, hungry, work, red, orange, yellow, want help (2 sign utterance), speech (class), house, more butter (for waffles), tree, eye, eyebrow.

Receptive Forms:

Pictures/line drawings: David clearly understands the sequence of his daily schedule. He can locate the next activity without prompts and then he goes to the appropriate area independently. A combination of photos and line drawings are used in the schedule. The only time he selects the "incorrect" picture/line drawing is when he occasionally wants to do something different. This is easy to discern, because when thwarted, he will briefly whine or cry.

Signs: David understands signs in at least single and two sign utterances. Examples follow:
His teacher asks him to sit down in sign (with or without voice) and he does.
David can answer the signed question, "What's next?" within established routines.
He hands objects to his teacher, places objects in the finished box (of his daily schedule), takes shoes and socks off, all upon the signed request of his teacher.
When asked to pass the puzzle book to his peer, he does.
When asked to roll dice, he does.

Verbalizations: While most verbalizations are paired with sign, on occasion verbalization is used alone and David demonstrates understanding. Examples follow:
David's teacher asks him to put a bee on the poster and he sticks it on.
His teacher tells him that he needs to clean up and he walks his plate over to the sink and turns the water on. (This also indicates that he draws inferences.)
He turns to his teacher when his name is verbalized.
He responds correctly when his computer teacher asks him to "find the same."

Mental representation—use of icons, indices, and symbols
David is communicating at an early symbolic level. He selects photos of what he wants for lunch and then goes directly over to refrigerator. When shown the photo card for snack time, he gets up and gets a plate and fork, then picks the waffle card off the menu of choices. He initiates signs that are both iconic and symbolic.

Intents/functions expressed:

Requests: David communicates a variety of requests for objects, actions, affection, help, pictures, activities.
Answer: David can answer questions within established routines, in sign and through physical actions that demonstrate his comprehension.
Protest: David seldom protests, but when he does, it is usually by crying. He also refuses objects by pushing them away.
Labeling: Most of David's labeling behaviors occur in the context of structured lessons, and especially during his computer lesson (naming objects and animals in a game context).
Comments on actions: David signs more and finished.

Rate of communication/minute (most frequent rate recorded and context):
David's most frequent rate of communication occurs during snack time (14 initiations in 12 minutes and 16 initiations in 17 minutes). This is a preferred activity.

Sharing Joint Attention: David shares joint visual attention with another person and also over an object. He gaze shifts appropriately.

Sharing Affective States:
David shares a variety of affective states with adults in his classroom. When he is sad (because he can't find something), he seeks out his teacher.
He initiates hugs with his teacher.
He puts his arm around the computer teacher and hugs her.
He laughs with two adults during a new game.
He shows interest in the emotions expressed by peers who are close in physical proximity.

Imitation (other than words):
David imitates his teacher's fingerspelling during 1:1 lessons. He imitates his teacher's printing and tracings.

Evidence of memory:
David remembers where his belongings are located and also where objects associated with his daily activities are located. He demonstrates memory of pictures, photos, line drawings, and signs. He remembers his daily routine. Perhaps the most interesting example of his memory follows. In the morning, David requested a particular snack from his teacher. She told him he had to wait until later. She was then called away on an emergency and a substitute came into the classroom. David brought the substitute to the area (where the snack had been put away (high in a cupboard), made a request to be picked up (in gesture), and then used additional gestures (pointing to the correct cupboard and then to the correct snack). This is also an example of problem solving.

Object Permanence: David has completely resolved object permanence. He remembers where everything belongs in the classroom. He enjoys tossing small objects down the stairs and then retrieving them when at the bottom. He hides objects and then becomes upset if the object is not where he left it.

Means-End/Cause-Effect/Problem Solving: David has resolved cause-effect understanding. He is engaging in means-end (which introduces barriers into cause-effect problems). He also solves problems. He systematically experiments with the properties of objects. For example, he turns mechanical toys on their side to see if they function the same way. He engages in these behaviors without any demonstration or prompting. He understands the effect of using the computer mouse in different ways. When he wants to reach something that is way above his head, he will select an object (such as a sitting cube), move it to the correct location, and then climb up.

Discrimination/Categorization: David discriminates objects, pictures, photos, line drawings, signs, verbalizations, physical settings and their associated activities. He also associates materials with routine activities. David engages in sorting and matching lessons on the computer. He can find the "same." He sorts images (on the computer) by color. He can match shapes. He can match an object to its picture. He is working on early categorization skills in his school program.

Self-recognition/Individuation: David knows his name when it is voiced. He is working on learning the sign for "me." He does not yet recognize or express pronouns.

Repetition/Repair: David not only repeats when misunderstood, he is quite creative in his repairs. He will use a different form of communication to repair. For example, he signed "more." His teacher thought he wanted more chips, but he actually more ketchup. So, he pointed to the refrigerator and then approximated the ketchup sign. This is significant because he is using a combination of signs and gestures to repair communication.

One-to-One Correspondence: David demonstrates some one-to-one correspondence behaviors by using his communication representations correctly (a helicopter is a helicopter). He also uses this knowledge when completing puzzles.

Object Handling or Level of Play: David's level of play was assessed using the Play Assessment Questionnaire (PAQ). His teacher and parent(s) rated 41/45 exactly the same. Thus, David is probably demonstrating similar play skills across settings. David has already mastered object manipulation, examination of objects, purposeful use of objects, imitation of how others use objects and play things. He associates one plaything with another in early play schemas. He conducts three or more steps in using playthings. He performs multiple actions on a single object. He puts objects together (such as nesting). He engages in some pretend play on self and on objects (such as feeding a stuffed animal).

The following items were not yet accomplished (as rated by both teacher and parent(s)):
	#9: Use particular sound with specific toy
	#19: Treat a doll as a baby
	#20: Has done something to one person or object and then repeated on another
	#21: Do two related play actions
	#22: Bring all parts to game or activity
	#24: Used same action with two different toys or tools
	#26: Using same action with two different people or objects
	#30: Act for doll or stuffed animal-assuming actions of people
	#31: Use sound effects when playing
	#32: Used two different actions or props in sequence

Note: This profile on David's communication was completed prior to the addition of the components of the aspect of context (physical environment, individual's characteristics, communication partners, activities and routine, and process of communication).

Recommendations:
David should continue to be reinforced for prompted greetings with a goal of eliciting unprompted greetings, an area of typical delay in all the study children who are deafblind. He should also continue to learn names and characteristics of objects. He already demonstrates early categorization skills. This can be enhanced by ample opportunities to group objects by like characteristics—color, size, shape, and texture. Efforts to build his categorization skills were evident in his school program. Grouping like objects by a variety of characteristics will support him to learn to express comments on objects, which he should be ready to do because he already demonstrates comments on actions and has a growing vocabulary.

David is engaging in some remarkable repairs when his communication is misunderstood. When repetition alone doesn't work and he goes on to try alternative forms (such as gesture), he can be complimented for this additional effort.

David's skills at grouping and categorization can be enhanced through play. He should be gathering materials for specific activities and play schemes. He can be prompted by asking, "What do we need?" He should also work on performing the same action on more than one person. This can be accomplished by three person play groups (adult, peer, and David). He can also work on imitating sequences of play actions. This should start by the imitation of real life actions, such as pretending to comb the hair or brush the teeth. The play assessment results can be a guide for interventions that will improve not only his play skills, but his language. There is a high correlation between symbolic play and level of language, making this an area of importance.

<div align="center">References</div>

Bruce, S. M. (in press). Holistic communication profiles for children who are deafblind. *AER Journal: Research & Practice in Visual Impairment & Blindness, 3,* 106-113.

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