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Developing Concepts With Children Who Are Deaf-Blind

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Introduction: The Challenge

There is an old familiar story that sheds light on the challenge of helping deaf-blind children develop meaningful concepts. The story goes like this: Four blind men touch an elephant. The one who touches the trunk says, "An elephant is like a thick wiggling vine." The one who touches an ear says, "No, an elephant is like a big leathery fan." The one who touches the body says, "No! An elephant is like a big brick wall!" And the one who touches the tail says, "How could you all be so wrong?! An elephant is like a hanging, swaying rope!"

This story teaches us that concepts are related to individual experiences. **Concepts are the ideas that give meaning to our world.** We develop concepts based upon our particular experiences. Each of the blind men had an entirely different experience of the elephant and, therefore, each had an entirely different concept of "elephant." None of the concepts were wrong if we understand them as the products of individual experiences. Each idea of "elephant" makes sense from the perspective of the man who touched a different part of the elephant.

Like the blind men in the story, each deaf-blind child develops their own unique concepts based on their personal experiences. Here are some ideas that make sense from the perspective of the deaf-blind people who had them, but that might seem "odd" to someone with sight and hearing:

- ◆ a boy thought "going home" meant the feel of a bumpy road and a series of turns in the car
- ◆ a boy experiencing snow for the first time thought it was ice cream and asked for chocolate
- ◆ a girl touched a wet leaf and signed "cry" (it felt like tears)
- ◆ a girl thought food came from a mysterious place up high (it was always set down on the table from above)

- ◆ a young man didn't know, even after many years, that his family's pet cat ate (he had never seen it or touched it as it ate, and no one had ever told him)

What each of these examples teaches us is how important it is to always be sensitive to and curious about a child's perceptions of the world. We need to continually ask, "What idea might she have or be developing about this experience, object, person, or place?" If we want to help a child develop meaningful concepts, we must be willing to **enter into a relationship and seek to understand the child's concepts.** Most importantly, we must **take the responsibility of providing experiences that will maximize the child's opportunities to develop useful and meaningful concepts of the world.** If we think for a moment about the elephant story, for example, we see that we can help a child to develop a well-rounded concept of "elephant" if we show as many of the parts of the elephant as possible. Children who lack sight and hearing or who have significant impairments in these senses, need to be consciously given continual access to the world and the society around them.

How Concepts Develop

In children, concepts develop in a spiral, with the child at the center. A positive self-concept begins within a responsive caregiving environment. In a mother's arms, a baby learns that she can influence another human being. She learns that she can cry and be fed or comforted, that she can take turns with another person. Gradually, as the child grows, her experiences expand. She learns about her own body and her mother's body. She learns that objects exist as well as human beings. She learns about what her hands can reach, what her eyes can see, and what she can hear. A child learns that she has a family, a home, a neighborhood, and a town. She learns that people communicate with language and comes to see herself as part of that language-using community.

Concepts build upon one another. The more ideas and memories that a child has about the way the world and relationships work, the easier it is to develop further ideas. Once a child realizes, for example, that when he claps his hands, his father is likely

to clap too, he begins to understand the concept of cause and effect. An understanding of one kind of cause and effect concept makes it easier to learn others. Having mastered the first concept, a child is more likely to understand another. Next, for example, he may learn that if he squeezes a particular toy it will make a sound. Turn-taking is another general type of concept that children come to understand through specific repeated experiences. Once a child can take turns with another child in a game, like rolling a ball back and forth, he is more likely to realize that he can take turns with words. Concepts build upon one another, just as skills build upon one another.

When relating to a child who is deaf-blind, it is important to distinguish between concepts and skills. Having certain skills does not mean that a child will necessarily understand related concepts. Carolyn Monaco, a consultant and educator in the field of deaf-blindness, uses an example of doing the laundry to illustrate this difference. A child who is deaf-blind may be able to do laundry—put clothes in a machine, transfer them to the dryer, and fold

them—without necessarily understanding the concepts of “clean” and “dirty” which are so central to this task.

Such learning happens quite naturally for a child who can see and hear well. Long before a typical child enters school, she has many ideas about the world around her and how it works. She knows that dirty clothes smell bad. Water comes from a tap. When you pull the plug, water goes down the drain. Switches turn lights on and off. People and things have names. People sometimes leave, but then they come back. Flushing a toilet is a great occurrence. Beds are for sleeping and sometimes jumping. Milk is kept in a carton in the refrigerator. The carton of milk came from a store and father paid money for it. The milk in the carton came from a cow. Plants grow in the spring. Winter is colder than summer. Animals have little babies and the babies grow up to be big animals.

When a child is deaf-blind, you cannot take any of these concepts for granted. Deaf-blind children must be consciously and continually provided with experiences that enable them to develop a gradually expanding view of the world.

Each experience that a child has contributes to concept development. Each experience “teaches” concepts in some way even if the people interacting with the child are not consciously teaching. Here are some typical experiences of deaf-blind children, along with some concepts that might be formed as a result of these experiences:

Repeated Experience

A child moves and someone responds by moving with her, by imitating her movements, or by taking turns.

A child touches a spoon, along with her mother, before eating. Her mother gestures with the spoon as if she were eating.

A person eats alongside a child and invites the child to see (through touch or vision) that she is eating.

A child with cortical visual impairment spends some time in a simplified visual environment with a plain background and single colored objects.

A child with cortical visual impairment spends time in an inappropriate environment, one with overly complex visual stimuli.

A child explores objects with his hands and eyes and a partner explores with him, touching alongside and pointing, looking, and smiling.

It may be useful to think of some of the repeated experiences of a deaf-blind child that you know and try to imagine the concepts likely to have developed as a result. This perspective may help you to create opportunities for experiences that will help the child develop accurate concepts about the world.

Possible Concept Being Developed

My movements communicate. Taking turns and communicating is fun.

When mother shows me a spoon, I am about to eat. Objects and gestures can communicate.

Other people eat and chew and drink. People enjoy eating together.

It is interesting and fun to look at things. I can get information with my eyes.

It is too overwhelming to look at things, so I will just close my eyes.

It is fun to explore. Other people are interested in the things I like. The world is fascinating. I want to keep exploring.

The Importance Of Relationships

All concepts begin with relationships. **A deaf-blind child will have difficulty developing accurate ideas about the world unless she has at least one trusting, significant, meaningful relationship to serve as a center from which to explore the world in gradually widening circles.** The process of developing concepts is a shared adventure between a child and the child's communication partners. It involves the co-creation of meaning. The child does not make meaning by herself; she and her communication partners make meaning together (Nafstad & Rodbroe, 1999).

Let us consider an example of how a trusting relationship can co-create meaning. Imagine that a father has developed a trusting relationship with his 4-year-old deaf-blind daughter Anna by spending time with her and sharing experiences, many involving movements that Anna enjoys. One day they go to the park, the father pushing Anna in her stroller. It is a fine spring day and for the first time her father takes the stroller to a short steep hill. After yelling "wheee!," he pushes the stroller down the hill (carefully holding on to keep her safe). Anna feels the quick downward movement, laughs, and raises her arms as the stroller descends. The father repeats the experience with her, over and over. Each time, Anna laughs and raises her arms. After the second or third time, her father pauses at the top of the hill and before he pushes her down he kneels by the stroller and lifts his own arms, inviting her to feel his arms as they go up, and he says "wheee!" again. They repeat this routine ten or twelve times.

That evening, at home, after Anna is ready for bed and they are sitting on the couch together, the father reminds her of their shared experience through gestures. He lifts his arms with the same excitement that Anna expressed when she rolled down the hill, and he says "wheee!" in the same tone of voice. Anna is sitting close to her father. She feels his arms rise and hears the tone of his voice. She laughs, confirming that she understands. This gesture of lifting the arms with that particular excitement has a shared meaning for the two of them. They have created this meaning together. For them, the gesture means the rolling-down-the-hill-in-the-stroller-game. Anna's concepts about her ability to communicate and participate in the world have been greatly strengthened. Even though she may not think about it in words, Anna is likely to have the idea that "I can have fun with someone and communicate about it later." Without the trusting relationship, this shared meaning could not develop.

One can imagine this experience being repeated with the story developing further as time goes on.

On another occasion, after her enjoyment of the movement down the hill, Anna's father might show her a nearby bush. She might touch it, and he might share her interest by touching with her. They might flutter the leaves in a unique way with their fingers. They might bring home a leaf as a remembrance. That evening's conversation about the day's experience might then include the sound "whee!," the raised arm gesture, the mutual touching of the leaf, and the fluttering of the leaf with their fingers. A story is developing, to which they are both contributing. Concepts are growing, naturally and enjoyably.

Types Of Concepts

There are a number of categories of concepts. An understanding of these will positively effect a child's life experience. These include:

- ◆ how the world works (routines, what things are used for, cause-and-effect)
- ◆ how the physical environment is arranged and how to navigate it (orientation and mobility)
- ◆ where things come from (the natural world and its cycles and laws)
- ◆ how things are sequenced (time, order of activities)

When a child is repeatedly involved in experiences that involve these things, concepts develop over time in a gradual way.

Equally important, and often overlooked, is the development of positive **self-concepts** and **social concepts**. If asked, "What are the most important concepts for children to learn?," anyone who has had the good fortune to know a number of children who are deaf-blind is likely to answer by stressing the importance of self concepts and social concepts. **All children who grow up with positive self-concepts, whether they are deaf-blind or not, enjoy a better quality of life as adults.** They view themselves as competent communicators in whatever communication modes they are able to use—verbal or non-verbal. They see themselves as part of a social group that accepts them for who they are. They are curious about the world around them, each in his or her unique way. The following are social and self concepts that are particularly important:

- ◆ I can communicate my needs.
- ◆ I have unique ideas about the world.
- ◆ Communication is about taking turns and sharing interests.

- ◆ I have feelings and I can share my feelings.
- ◆ I belong to a family or group.
- ◆ I belong to a community.
- ◆ I know how to interact with people in the community in enjoyable ways.
- ◆ I can contribute to my community.
- ◆ The world is interesting, and I can explore and learn, both by myself and with others.

We cannot teach these concepts through discrete lessons, but we can **offer children experiences to help them develop these concepts**, experiences that will enable them to make sense of the world and respect themselves as valuable members of the world.

Attitudes, Environments, And Techniques That Promote Concept Development

It is important to cultivate attitudes, environments, and techniques that enable deaf-blind children to learn concepts all day long—from the time they wake up in the morning until they go to bed at night. It is essential that they have many opportunities every day to make up for what they miss due to limited or distorted sight and hearing. More formal lessons that teach specific concepts and associated vocabulary are also necessary, but these lessons must always be taught within an environment that naturally, moment-to-moment, cultivates the development of positive social and self-concepts and gives deaf-blind children access to their surrounding environments.

You can promote concept development through communication and conversation, by helping a child access the world around him, and by enhancing his participation in activities and the routines of every day life. Below are some suggestions that describe how to do this.

Communication and Conversation

Be a skilled, caring conversation partner. Taking turns in meaningful ways and sharing interests and feelings are the basic elements of conversational interaction and relationships. Children who are deaf-blind need available conversation partners who understand this. A skilled partner will interact with a child using his own language, which is often a language of movement and touch. She will reflect the child's feelings and communication efforts so that he knows he has been "heard" and that his natural responses to the world have been understood. Remember the example of Anna and her father. They were conversing meaningfully.

Countless meaningful conversations are the foundation for all concept development (Miles & Riggio, 1999).

During conversations, use opportunities that arise to establish mutual attention. Once you and a child are focused on the same thing—a feeling, a movement, an object, a person, or an activity—you can begin to help her explore and expand her focus of attention, and thus, her concepts. Pointing is typically used to establish mutual attention with children who can see normally. Often, with children who are deaf-blind, mutual attention needs to be first established through touch. This is likely to be true even if a child has some usable vision, because residual vision may not initially be a reliable channel of information.

Sharing a feeling, a movement, a sound, a rhythm, or an activity will let the child know that you share his interest. When exploring or touching an object, put your hand alongside his or gently under his last two fingers (not on top of his hand). This allows you to explore with him rather than force or direct his movements. (See *Talking the Language of the Hands* for ideas about interacting with the hands of a child who is deaf-blind, Miles, 1999). Shared interest, achieved over and over with a child, becomes a basis for concept and language development.

Sounds and rhythms can become the objects of shared interest if you are alert to natural opportunities to join with a child's own rhythms or imitate his sounds. You can tap the rhythms of environmental sounds gently on his knee or back as a way to let him know that you hear what he hears. Often, sharing rhythms is a good way to share feelings. When a child feels confirmed in his feelings, he will develop a stronger self-concept.

Use language to talk about a concept at the moment you think the child has that concept on his mind. Language can help to expand concepts greatly. If you are interacting with a child and you can tell that he has an idea or is thinking about an action, that is the time to use a word—in a mode that is appropriate for the child—to express a related concept. Sign and/or say "jump" when you know he is likely to be enjoying that action. Sign and/or say "cat" when you and he have just touched the cat together. Sign and/or say "happy" when the child is obviously happy, and invite him to touch your smile, as well as his own. Do this with other feelings, too — give him the language to name his own feelings of sadness, boredom, frustration, and others, at the moments when he is feeling those feelings. Both the timing and the use of accurate vocabulary are crucial. Begin with simple language and use words you think the child himself would say if he could talk (Miles & Riggio, 1999).

Encourage anticipation and memory by gesturing, signing, and talking about things you have experienced together. Use memory boxes and memory books as concrete references to help facilitate conversations about shared experiences. Memory and concept development are inseparable, so it is very important to cultivate the child's memory through natural conversations that refer to shared experiences. The story about Anna and her father in which an emotionally significant gesture was used to capture the memory of an experience is a good example. Other possibilities for sharing memories with a child include the use of objects or pictures associated with special shared activities or making a memory box or memory book together. A trip to a park might be remembered by a leaf. A meal at a restaurant, by a straw. A trip to the zoo by pictures of the animals the child liked best. The key is to notice what the child finds interesting in a given situation (a gesture, an object, a texture, an image) and use her interest as a guide to what will be memorable. Having the concrete object as a reference can enable children and conversation partners to "talk" about shared experiences out of context. In addition, things remembered together can be referred to before the experience is repeated, as a way of building anticipation.

Become curious about the child's concepts and the stories he has to tell. Every child has stories to tell and his communication efforts whether verbal or non-verbal are often his best attempts to tell these stories. Because deaf-blind children need so much help in the world, conversation partners typically interpret a child's attempts at communication as expressions of needs or requests for help, rather than attempts to tell stories or make statements. If a child signs "mother," for example, he might not be asking for his mother, but rather wishing to tell a story about an experience with his mother (Nafstad & Rodbroe, 1999). One can imagine that Anna might move her arms up and laugh the next day in school as an attempt to tell her teacher about the experience with her father in the park. A sensitive teacher, although she might not understand the story, would confirm Anna's enthusiasm by repeating her movement with the same energy and smiling and nodding while inviting Anna to feel her gesture. The teacher might later ask Anna's parents whether this gesture had any particular meaning for Anna and learn the story of the ride down the hill in the park. Then the teacher would truly be able to converse with Anna about this experience that was so meaningful for her (Kristensen & Larsen, 2004). By regarding a child's movements and vocalizations as attempts to tell stories and by responding respectfully, you encourage her to express herself further. You co-create meaning and greatly aid her concept de-

velopment. And you will learn fascinating things about her experience of the world.

Access to the World

Invite the child to have access to what is going on around him. At very young ages, providing a connection to the world might involve carrying a child who is deaf-blind on your body in a sling or a backpack so that he can experience the rhythm of walking, environmental smells, tactile experiences, and sounds. Later it might involve moving him in a stroller or wheelchair, or inviting him to sit nearby or walk along with you as you do everyday tasks. It might be as simple as letting him sit in the kitchen as you prepare dinner or nearby as you talk with others. You can invite him to touch people, things, and you during your activities. Do this by putting your hand gently **under** his hand and moving your hand toward what you want to show him. If you do this repeatedly, and leave him free to choose whether or not he wants to touch, he is very likely to become more curious about the world. If you are careful to avoid forcing him to touch things by manipulating his hands, then defensive withdrawal reactions are not likely to develop.

Access to the environment can often best be facilitated by being alert to what the child is missing due to a lack of sensory information. Seek to supply as much missing information as possible by interpreting the world in whatever way works for each individual child. When a child can benefit from a sign-language interpreter, the interpreter should be trained in the specific aspects of interpretation for people with vision limitations. This will include interpreting visual information and other signed conversations, as well as supplying additional incidental information (Smith, 1994).

Demonstrate actions that you want the child to do before you ask him to do them. Children who can see and hear learn and are motivated to do things by seeing those around them model all types of actions and activities. A child learns to tie his shoes, for example, because he sees his big brother or father tie shoes. When a child is unable to see actions being performed, he has no concept of what is possible. Models must be provided in a thoughtful way. Using the hand-under-hand invitation described above, let the child feel as you do things or invite him to observe you closely if he has usable vision.

Make experiences tactual and close-up. Many concepts are learned first with reference to the child's own body and involve touch. "Big" and "little" can be learned by comparing adult hands and feet with a child's. "On" and "off" can be learned by getting on and off a swing. A building may be understood as "tall" because it takes a long time to climb the stairs. In order for objects to be meaningful, most children who are deaf-blind need to actu-

ally touch and explore them. They need to be given opportunities to feel animals, walk around rooms, reach up into trees, and roll down hills. As a child becomes more curious about the world, materials should be adapted so that they convey information tactually as well as visually. Aspects of visual information (typeface, size, lighting, color, etc.) should be adapted so that they are appropriate for a child's particular visual abilities.

Provide interesting materials that encourage exploration. Concepts broaden and develop through curiosity. Be alert for materials that excite a child's curiosity and stimulate further exploration. Watch carefully as he interacts with objects and seek to understand the source of his interest. Does he like a particular color, texture, sound, or movement? This information will help you select other objects with similar qualities that are progressively more challenging.

Document your observations of a child's understanding of concepts and his ways of expressing himself so that this knowledge can be shared with others. Careful observation of the ways that a child interacts provides a key to understanding how he thinks. Videotaping is a particularly valuable tool for documenting the interactions of children who have little or no formal language and communicate using body language as a main form of expression. Videotapes of a child interacting, communicating, and participating in activities provide valuable images and information for people who are just beginning to get to know a child and are often more conducive to fostering an understanding of concept development in children than are reports or simple lists of skills. They help others become familiar with a child's unique ways of thinking and interacting and stimulate curiosity about the stories that the child has to tell.

Activities and Routines

Include the child in the whole process of activities. Rather than having things "magically" appear or disappear (as it may seem to a deaf-blind child when objects or people suddenly come or go), invite her to come with you as you get things. Let her accompany you as you get food from the refrigerator or materials for a project from a cabinet. Show her as you put your coat on to get ready to leave. Let her feel as you bend over to pick up something she has dropped. Including a child in the full process of activities will likely mean that she participates in fewer activities throughout the course of a day, but each one will be more meaningful and full of learning.

Use the child's own interests as a basis for concept development. The advantage of choosing activities that you know are of interest to a child is that you will already have his attention when you begin. A child's interest in lights, for example, can

be used to further concept development about how things work. Explore the parts of a flashlight with him, alternating in taking it apart and putting it back together again, over and over. If he likes rough textures, find a variety of toys with these textures for him to play with. Share his enjoyment by touching and playing with the toys together (Miles & Riggio, 1999).

Use family and school routines as natural opportunities for learning. Mary Morse, a consultant for deaf-blind children, likes to use the word "ceremony" to describe the way she involves a child in routines. A simple activity like preparing a snack can become an enjoyable ceremony with ritualized steps: going to the cabinet; opening the door together in a particular way; getting crackers, peanut butter, and a knife, one item at a time; closing the door (listening for the sound); carrying the items to a place at the table (perhaps on a lap, if the child is in a wheelchair); and placing each item carefully on the table and hearing the sound it makes. Each step is enjoyed together—deliberately, playfully, ceremonially—and is an opportunity for learning concepts and skills. Concepts of place, sequence, time, cause-and-effect, turn-taking, language, social conventions, and actions can all be learned during repeated routines. Daily, weekly, and seasonal routines such as baths, meals, swimming lessons, family rituals, holidays, and birthdays, provide wonderful opportunities for developing concepts.

Use pictures, especially drawings, to enhance concepts with children who have usable vision. Drawings that are closely related to objects, actions, or people that you and a child have experienced together have vast potential to expand concepts. With the child present, put an object that he likes on a piece of paper and draw around it, letting him feel your arm as you draw. It will help if you do this in a playful way. Performing this activity over and over may become meaningful for him. After awhile, he might want to help you draw. As he becomes curious about the pictures, a whole new world of possibilities will open for him. You can draw pictures of things you have experienced together or he may learn to draw on his own to express concepts. You can also look at accessible books and pictures together. Remember, pictures may be visual or tactual.

Use play to develop concepts. Play is a way to experiment and to express ideas. Many children who are deaf-blind need encouragement to play, especially to use dolls, dollhouses, cars, and other symbolic toys. Good conversational interaction is playful. When a child is comfortable with genuine turn-taking interactions and mutual attention, large dolls can be included in conversations in a playful way and the child can learn to expand his ideas about people and feelings by acting out scenarios with dolls. Dolls,

once understood as symbolic, can be substitutes for pictures for children with no vision. They provide ways of talking about situations before or after they have occurred. The use of dolls and symbolic toys or pictures can be a means of "discussing" many concepts with children who have not yet developed a significant amount of vocabulary.

Conclusion

The development of concepts is a shared adventure, one in which you and a child who is deaf-blind can learn from each other and explore the world together. Concepts are dynamic and continually developing. This is true for everyone, regardless of whether or not we can see and hear. You may never have thought about the rope-like quality of an elephant's tail, about the way that rain is like tears, about the unique texture of a wall and how it feels like a stone that is near the back porch, or about how the wind feels on your face. A deaf-blind child can show you new concepts like these and new ways of experiencing the world. You can help her understand that she can be a real participant in an enjoyable social world. You can show her that other people use their body language or sign language to communicate. You can tell her that you like cherries and the feel of the dog next door and playing a hand drum. You can show her that the toy elephant also has big floppy ears and a snaky trunk. It is through shared experiences that concepts grow. It is together that we learn more and more about each other and about the world around us.

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For questions about the availability of these or additional resources related to concept development, contact DB-LINK.

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