2017 Texas Symposium on DeafBlindness
Symposium Pre-Conference
DeafBlind 101: Basics of Understanding DeafBlindness in Children and Youth

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DeafBlind 101: Basics of Understanding DeafBlindness in Children and Youth

Overview

- The effects of DeafBlindness on information gathering and concept development.
- 5 key components to making learning meaningful for students with DeafBlindness.
- Basics of Orientation and Mobility for Students with DeafBlindness.
- Serving Infants and Toddlers with DeafBlindness.
- Connecting and Interacting Effectively with Students who are DeafBlind.
- Using Calendars, Tangible Communication Symbols, and Activity Routines
The Effects of DeafBlindness on Information Gathering and Concept Development.

It’s a matter of access.

Deafblindness is an information gathering disability.

What Does Access Mean Related to DeafBlindness?

Ask: Does the student have access to ongoing sensory information which is equal to that of other learners, in order to provide:

- learning and interaction with others and the environment; and
- a feeling of being connected and secure?

How is DeafBlindness Different?

Photos show Helen Keller and Anne Sullivan, as well as the cover of the play *The Miracle Worker* by William Gibson

What Intervention Supports Access?

- provide consistent access to instruction and environmental information that is usually gained by typical students through vision and hearing, but that is unavailable or incomplete to an individual who is deaf-blind;
- provide access to and/or assist in the development and use of receptive and expressive communication skills;
- facilitate the development and maintenance of trusting, interactive relationships that promote social and emotional well-being; and
- provide support to help a student form relationships with others and increase social connections and participation in activities.
Examples of the array of supports that lead to success for students with DeafBlindness?

- Individualized attention.
- Adapted materials and environments.
- Communication and communication development in the student’s preferred modes.
- Effective use of space, position, and movement.
- Structure, predictability, and routine.
- Trust, bonding, and security.

Examples of Supplementary Aids and Services

- Specialized Staff Training
- Assistive Technology
- Special seating arrangement
- Unique presentation of materials
- Pacing of instruction such as implementing extended wait time, or frequent breaks
- Specialized staff support.

What is an Intervener?

Interveners, through the provision of intervener services, provide access to information and communication and facilitate the development of social and emotional well-being for children who are deaf-blind. In educational environments, intervener services are provided by an individual, typically a paraeducator, who has received specialized training in deaf-blindness and the process of intervention.

[https://nationaldb.org/groups/page/9/national-intervener-services-initiative](https://nationaldb.org/groups/page/9/national-intervener-services-initiative)

Do WITH, not FOR!

The goal of intervention is to insure that the student with DeafBlindness is an active participant and informed learner in all activities.
What is it like to be DeafBlind?

Common Effects of Deafblindness

- Information beyond arm’s length is missing, distorted, incomplete, or fragmented.
- Access to information from the surroundings and other people is reduced. (Ability to detect, gather and prioritize information; lack of experience; ability to move easily; language abilities, etc.)
- There are barriers to incidental learning.
- Information access affects how people form concepts and relationships, as well as what they notice, care about, and enjoy.
- Sensory-specific adaptations to most effectively use vision, hearing, and touch are needed.

Deafblindness Affects how a person gets information and knows about:

- what is happening;
- what other people are doing;
- what people’s expectations are;
- what to expect.

“My First AADB Conference.”

“Mary Dignan is profoundly deaf and almost totally blind from Usher Syndrome Type 2. She practiced water and environmental law in Sacramento, California until 1997…”

“My SSP was absolutely fabulous for me, and it was a revelation to actually be able to relax and be myself while enjoying the conference, instead of being intensely busy trying to figure out what is going on. I am sure that every deaf-blind reader of this magazine well knows what it is like to work extraordinarily hard at figuring out what is going on, and then finding precious little energy left over to actually relax and enjoy what is going on.”

– Mary Dignan


DeafBlindness affects how a person experiences events and interacts with other people and environments.

- Situations may be confusing or threatening due to incomplete or distorted information from other people and the environment.
- Different perceptions of what is interesting, important, motivating, or punishing.
- Frustration about communication attempts being unrecognized or misunderstood.
- Difficulty in recognizing, trusting, and bonding with others.

True story!
After breakfast, I returned to my room and detected this information that hadn’t been there when I left.

MOVE TO
DILLON HALL
BO5
(HOME EC)

This message caused me anxiety because:

- I didn’t know the source of the information;
- Though some of the information is familiar, it is incomplete;
- I wasn’t able to detect the context or intent;
- I was unable to understand how the information affected me;
- I could not predict the expectations of others;
- I wasn’t even sure the information was directed toward me.

DeafBlindness affects the ability to detect, gather, prioritize, and use information.

- Detect
- Gather
- Prioritize
- Use
Sensory Impairments can lead to fragmented information. An image shows distorted visual information that is difficult to interpret. Is the distorted/incomplete information easier to use with experience, context, and explanation?

**Audiogram**

Image shows audiogram grid representing sound volume in decibels (dB) and sound frequency. The chart shows the range of conversational speech across frequencies from 10 to 60 dB.

**Learning and Concept Development (How do we know what we know?)**

We can identify three broad categories for how we learn:

- Hands-on personal experience.
- Others purposely sharing information in a way we understand.
- Casual observation/Incidental learning.

[Pyramid of Learning](http://intervener.org/deafblindness/)

**DeafBlindness Affects Learning and Concept Development**

- Incidental learning is absent, erratic, or undependable.
- Understanding secondary information may be difficult.
- Hands-on experience is the most reliable way to learn, and essential for people with deafblindness.
We can improve access and enhance the lives of people with DeafBlindness by:

- Greeting and approaching students respectfully, and identifying yourself.
- Letting students observe hand-under-hand rather than guiding hand-over-hand.
- Providing information to help students anticipate what is going to happen.
- Providing information about what is happening that students otherwise miss.
- Creating meaningful, motivating, and recognizable routines.
- Using multiple communication forms: sign (visual or tactile), speech, tangible symbols, cues, gestures, calendars, etc.

_The Story of My Life_, by Helen Keller was first published in 1903 when she was 23 years old and attending Radcliffe College.

In Chapter IV she described her memory of what life was like in her early years as a person with DeafBlindness before she developed language.

“Have you ever been at sea in a dense fog, when it seemed as if a tangible white darkness shut you in, and the great ship, tense and anxious, groped her way toward the shore with plummet and sounding-line, and you waited with beating heart for something to happen? I was like that ship before my education began, only I was without compass or sounding-line, and had no way of knowing how near the harbour was.”

— Helen Keller. _The Story of My Life_. (1902.) Chapter 4.

Based on Helen’s description...

- What information was she looking for, or most interested in?
- What messages would she probably like to receive from a communication partner?

Consider your student with deafblindness...

- What information is he or she looking for, or most interested in?
- What messages would he or she probably like to receive from a communication partner?
EXPERIENCING THE WORLD OF DEAFBLINDNESS

Participants take place in a simulation of DeafBlindness activity.

Commonly Reported Feelings Following Simulation

- Isolation
- Lack of control
- Lack of choices
- Anxiousness
- Fear
- Lack of trust
- Frustration
- Passive cooperation
- Boredom
- Wondering how long something will last
- Wait time seems longer
- Tension: not knowing who, what, where, why

Beyond Arm’s Length

If a deafblind child cannot access information from a distance and is left alone with no means to predict and anticipate events, the result can be...

Implications

- Passivity
- Withdrawal
- Resistance to interactions
- Resistance to activities introduced by others
- Aggression
- Self-Stimulatory behaviors
Symptoms of Stress

- Yawning
- Going to sleep
- Hyperactivity
- Laughing or Crying
- Self-stimming
- Self-abusing
- Being aggressive or passive

Eight Principles for Making Contact and Communicating

- Approach effectively and make introductions.
- Respect behavior as communication.
- Follow the person’s lead and interests.
- Acknowledge by touch and imitation.
- Give time to respond.
- Be as unobtrusive as possible.
- Use cues to allow for anticipation.
- Interpret the environment.
Five Key Components of Instruction to Make Learning Meaningful

Anticipation
- Being able to predict what will happen next.
- Something to look forward to.
- Motivation

Motivation
- Individual perception affects what is motivating.
- Activities based on preferences and choices.
- Participation with a trusted partner.
- Communication

Communication
- A reason / purpose to communicate.
- Multiple meaningful communication forms.
- Shared topics of interest: turn-taking, conversations.
- Building connections.

Confirmation
- Affirming communication attempts and actions.
- Feedback on progress, attempts, and successes.
- Knowing the results of actions.
- Knowing when an activity is finished.
- Reflection

Reflection
- Remembering past experiences
- Contemplation and processing.
- Careful consideration of complex information.
Learn to Move and Move to Learn. How to Effectively Integrate Orientation and Mobility into Your Students’ Day

The following are headings to the PowerPoint slides. Additional handout materials on O & M are located at the conclusion of the slide presentation section of this document.

Who, or what is Owen M.?
What is a COMS?
Impact of Deafblindness on Orientation and Mobility
Orientation and Mobility Sequence
Things to Consider…
What Can the Team Do?
Collaboration During Lessons
Take Time to Connect and Bond
Building Anticipation, Motivation & Communication
Providing Participation, Confirmation & Reflection
Learning
Learning Concepts
Concept Development Progression

The child learns that objects:

- Exist
- Are permanent
- Differ from one another
- Have labels or names
- Have characteristics
- Have functions

Principles of Gross Motor Development
Orientation to Self (Body Awareness)
Strategies to Teach Body Awareness
Orientation to Near
Providing enriched environments that promote movement and exploration

Orientation: Progression from Near to Far

Audiological Considerations
To learn more go to:
- [http://www.tsbvi.edu/on-the-go-learning](http://www.tsbvi.edu/on-the-go-learning)
- [http://www.tsbvi.edu/selected-topics/deafblindness](http://www.tsbvi.edu/selected-topics/deafblindness)

Now That is What We’re Talking About! Communication Systems

COMS May Teach
- Communication books
- Crossing cards
- Closed-loop tape recordings
- Identification cards or buttons
- Bus route folders

COMS May Use
- Calendars
- Communication Boards
- Communication Devices
- Walkie Talkies or Two-Way Radios
- Interpreters and or Interveners

Putting the Rubber to the Road
How to Make Sure Routines Integrate Skills & Concepts

Example Routine: Going to the Playground
Learn to Move – Move to Learn
Infants and Young Children with DeafBlindness

Infants: What You May Not Know

- The baby you see may be medically fragile, have physical pain and discomfort
- Time in hospital away from mother and family interferes with bonding & attachment
- Mother or family may have to perform unfamiliar medical procedures in addition to typical care giving
- Sleep monitors, tube feedings, surgery site cleansing
- The primary caregiver or both parents may be sleep deprived
- Mother may have experienced difficult childbirth, including surgeries herself
- Birth may have been unexpectedly early
- These circumstances contribute to postpartum depression
- All of this interferes with bonding and attachment

Many parents may have been told:

- Not to expect their child to live
- They should “let them go”
- Just take them home and love them while you can
- You child will never be able to walk, talk, or know you the parents from anyone else

Educational Services for Infants

- Very young children with DeafBlindness aged birth to three years will be served through ECI or private therapy services
- ECI refers babies with VI and AI to the school district for services
- VI and AI teachers serve as parent infant trainers, much like a “parent coach”
VI or AI teachers provide services in the home or “natural environment” which involve a combination of:

- consulting with caregivers and
- direct instruction and interaction with the infant or toddler

**Key Issue: Bonding**

INFO TO SHARE WITH PARENTS

- Establish consistent routines as early as possible: sleeping, feeding, changing, play
- Be responsive: come when they cry, hold and rock them. Crying in the first 3 months is a reflexive response to circumstances
- Do work on baby learning to tolerate not being held all the time: self-soothing
- It is of crucial importance that the baby or young child is securely bonded to a family member such as a mother, father, or grandparent.
- Interveners come and go, but family endures, usually

**Key Issue: Communication**

INFO TO SHARE WITH PARENTS

- Establish and maintain a predictable routine
- Talk to the baby/child
- Use body cues or signs
- Use location cues and naturally occurring tactile cues (blankets, table pads, etc.)
- As soon as a routine is well established and the baby is responsive to it, introduce variety
  - Different caregivers
  - Different materials
Key Issue: Play Movement & Exploration

INFO TO SHARE WITH PARENTS

- Put the baby in different positions
- Try "tummy time" even if it means you have to sit and pat the baby's back or put them over your lap/legs
- Tummy time is important to use different muscle groups that will build skills to sitting, pushing up on all fours, crawling, walking.
- Start working on “tummy time” the first month of life, or the first month the baby is home from the hospital.

How do you teach a baby?

- Sit on the floor
- Have a special quilt or blanket that is your “signature" or symbol
- The blanket should provide a dark, solid color high-contrast background
- Have a set of interesting objects
  (see Lilli Neilsen’s Active Learning work: [www.activelearningspace.org](http://www.activelearningspace.org))
- Talk to the parent or caregiver

Interesting objects:

- Avoid hard plastic, they already have too much of that
- Avoid push-button noise making toys, they probably already have a lot of those
- Use common objects which parents may have around the house

Items that you can shake and make noise like:

- metal cans with object in them,
- easter eggs with beans or pasta in them
- bells on wristbands

Look for metal items like:

- measuring spoons and cups
- small bowls (pet food bowls)
- metal jewelry or belts, hardware
- set of wrenches, nuts and bolts, etc.
If the child “always” throws or drops items,

- Attach them to a pegboard or foam core board
- Clamp the board to a table or mount it on the wall or PVC pipe frame

Keep in mind Lily Neilson’s 5 Phases of Educational Treatment (these are the adult’s actions)

- Offering
- Imitation
- Interaction (turn taking)
- Sharing the work (partial participation)
- Consequences (don’t “rescue” the child from undesired outcomes)

**Infants: Communication**

- Symbolic communication or understanding the meaning of a word, object symbol or picture (photo) emerge at about the same time 12-18 months of development.
- A typically developing baby must hear a word spoken in context 1000 to 1200 times before they use it expressively themselves.
- By 24 months a baby can speak in 2 to 3 word sentences.
Creating a Sense of Self: Using Interaction and Communication strategies to Teach Children with DeafBlindness

Close your eyes and imagine…

- Imagine a memorable conversation/interaction you’ve had in the past – someone who you really loved and had an emotional bind with.
- What are the things you remember from that conversation? Emotions, turn-taking, tension, how do you know they were listening? Why do you think you remember it now – how long ago was it? Do you reminisce with this person about the conversation now? Do you remember the place and time – how old you were, did you feel safe, what were you doing?

STRESS!

- Still Face Experiment video
- Feelings of isolation and lack of acknowledgement from a communication partner can lead to increased levels of stress.
- How might this relate to an individual with deafblindness?

How do we interact with one another?

- Communication – are we recognizing? – Follow the Gaze
- Building language – how do we acknowledge?

Importance of Emotional Content: What makes us who we are?

- What has made you who you are?
- What is important in your life?
- What events have been important in your life?
- What makes life fulfilling?

Johanna and D

Video of a teacher interacting with a student during a routine demonstrating connection and principles of effective interaction.
Co-Presence + Mindfulness = *Be here now*

Building Connections

- Co-Presence = Communication from a common perspective
- Co-Presence = Awareness of yourself and of your partner in the here and now

Gunnar and Ingrid

Video of a teacher and student creating a memorable interaction

Moving From Memorable to Significant….

_Gunnar Vege_

- Tension in a tactile conversation
- Emotional Significance

Be the Mirror

- Our mirror reflects, not only what it see’s, but what it feels – _tactual mirroring_
- Use mirroring to reflect and establish emotional content

_Dr. Jan van Dijk – Mirror Neurons_

What are we missing? – “The interested becomes the interesting”

Teacher as a Communicator

- Are we communicating or interrupting?
- How do we interrupt?
- How do you communicate with the adults in your life?

The “All about me”, and “The interrupter”

- Beware the Interrupter video
The recipe for a conversation

Hello… How ya doin?
  – Greeting – opening = 3 turns

Conversation
  – Sequence of at least three turns
  – Emotional content
  – Shared topic/Joint attention
  – Breaks and repairs

See ya later!
  – Closing
  – Three turns
  – May move on to another topic
Calendars, Communication Symbols, and Activity Routines

Who uses a calendar?
Drawing shows everyone raising their hands.

Why are calendars so important?
Screenshot of the interveners.org website.

Begins with understanding the impact of DeafBlindness

1. DeafBlindness creates a disability of access to the visual and auditory information about the environment (people, things, events) that is necessary for learning, communication, and overall development.

2. Incidental information (visual and auditory information which sighted and hearing students receive automatically without effort) is not readily accessible to students with combined vision and hearing loss.

3. Instead of effortlessly receiving a flow of information like others, these students must work to attend, gather, and interpret partial amounts of information which are often distorted and incomplete.

Typical Learning vs DeafBlind Learning
Charts from intervener.org show typical learning as a pyramid with a large base of incidental learning, a smaller amount of secondary learning, and an even smaller amount of direct learning at the top. For learners with DeafBlindness, the pyramid is inverted, with direct learning accounting for the most knowledge and concepts, with secondary, and incidental learning taking smaller roles.

Calendars for our students

- Teach symbolic representation
- Depict distinct chunks of time
- Clearly define past, present and future
- Teach time concepts and vocabulary
- Expand to become more helpful
Calendars help facilitate conversations

- Helps our students establish a joint topic for discussion
- Provides a venue for requesting, rejecting, choice making, volunteering new bits of information
- Provides for several focused and clear conversations each day
- Opportunities to teach time concepts and vocabulary
- Context for meaningful and reciprocal conversations

Symbols and Timeframes

Symbols

- Object
- Partial Object
- Abstract Symbol (tactile or picture)
- Standard Text (print or braille)

Symbols

- Never assume a student can comprehend symbols at a particular level if they have not had prior exposure to prerequisite forms.
- Don’t rush to use abstract symbols. Students must have the most appropriate type of symbol for their needs and abilities.

Transitioning between types of symbols

- Pairing the two symbols is necessary
- Very important stage
- Lots of time and attention is required to ensure the student makes the conceptual jump

Time Frames

- Anticipation
- Routine
- Daily or partial day
- Weekly
- Monthly and Yearly
Anticipation Calendars

- Time frame: immediate past and future
- Distinct chunks: 2
- Past & future: one container for each.

Longer time frames

Photos and videos illustrate:

- Daily Calendars
- Weekly Calendar
- 2-Week Calendar
- Monthly Calendars
- Month Calendar Conversation with Picture Symbols
- Month Calendar Conversation with Braille

Questions?

- What kind of calendar is right for my student?
- Where do I start in designing a calendar system?

Photograph shows the reference book, *Calendars for Students with Multiple impairments Including Deafblindness* by Robbie Blaha

Calendar Expansion

- What else can be done with calendar time frames and symbols?
- Books, lists, labels, choice making, conversation support, experience stories, math and science charts, recipes…
Routines


Importance of Routines for Students with Deafblindness

As trust is essential, bonding between student and instructor is critical. It is important to create balanced interaction by taking turns, to encourage a student to be responsive; directive instruction is therefore less valuable.

Students…should have a curriculum focused on bonding and developing interactions and routines for expanding the frequency and functions of communications.

Highly individualized educational interventions to address the development of communication skills should be embedded into every activity, provided in the context of natural environments and complimented with ample opportunities for social interaction.

Fondue Routine

Video of a teacher and two students participating in an activity routine, making choices about having fondue snacks.

Why are routines important?

- Increase predictability while reducing stress and anxiety.
- Build anticipation for the next step as well as the end of an activity.
- They give structure and meaning to actions and events.
- Routines build memory foundation for other learning.

Things to keep in mind when planning a routine

- What skills are targeted? What IEP goals can I infuse?
- Have a clear beginning, middle, and end
- Use the same objects and materials and persons every time.
- Use short, easy and predictable steps.
- Provide enough support to assure success every time.
- Can be flexible and adaptive.
Developing a Routine

Photographs illustrate some documents which can be used to plan a routine.

Moments of Joy

Video of Dr. Jan van Dijk discussion the best outcomes of instruction creating moments of joy for students.

Wrap Up
Additional Materials about O & M
Children learn about their environment as they move through it—about people and objects, sizes, shapes, and distances. For typically developing children the senses of sight and hearing provide the greatest motivation for exploration. These children will use their vision and hearing to gather information about their surroundings while growing in understanding of their own bodies and their own capabilities of movement. The sight of toys or people and the sounds of voices or objects encourage them to move and discover. As they do so, they gather, recognize, and interpret an amazing array of sensory information.

A child who is deafblind must learn to understand his or her environment with minimal or distorted visual and auditory information. Limited sight and/or hearing may inhibit natural curiosity and the motivation to move about. As a group, learners who are deaf-blind are quite diverse and may include children with physical, cognitive, or health problems in addition to combined hearing and vision losses. Some may feel insecure or frightened when moving about in an environment they can neither see nor hear clearly. Others may run on the track team or use motorized wheelchairs. Some communicate with speech or sign language, while others may not have had enough experiences in the environment to understand even basic concepts about that environment or about objects found in it. It is essential that children who are deaf-blind receive learning opportunities and instruction that facilitate purposeful movement.

Orientation and Mobility (O&M) instruction provides students who are deafblind with a set of foundational skills to use residual visual, auditory and other sensory information to understand his or her environment. For the child who is deaf-blind, movement is an opportunity to gather
sensory information, to communicate, and to make choices. O&M instruction provides opportunities and skills that can broaden the student’s awareness of the environment, resulting in increased motivation, independence and safety.

Consider the following example: Alex, a sighted and hearing child, is playing with Jason, his brother who is deaf-blind, in their bedroom. When Alex hears the front door opening, he assumes his mother has come home from work. This interpretation is reinforced when he hears the family dog barking excitedly. Wishing to greet his mother at the door, he quickly walks from his bedroom, safely avoiding the many toys scattered on the floor, continues traveling down the hall, moving through the kitchen and around the dining table. While running to greet his mother, he sees that she is carrying a large square cardboard box. Immediately recognizing the logo from his favorite pizza restaurant, he knows she has brought home his favorite dinner, a pepperoni pizza. Excitedly, he offers to carry the box back to the kitchen and completes this task successfully and proudly.

In this rather routine event, spanning only a few minutes, Alex has gathered and interpreted much visual and auditory information. Not only does he understand that his mother is home, but also that he can greet her at the front door if he hurries, and that they are about to eat his favorite meal. In moments, the sensory information he gathered and processed provided him easy access to his environment, allowing him safe movement through the house. Seeing the pizza box also provided him with clues about immediate future activity.

For Jason, however, the scenario is a bit different. He knows someone has entered the house because he was playing with the dog when the animal suddenly became excited, began to bark, and then ran out of the room. Jason may sense or hear some of this activity by partially seeing or feeling the dog alerting him. As the result of his O&M instruction, he now travels down the hall using a protective technique to move safely around the toys. He moves through the kitchen and around the dining table. By now, he can smell the pizza and becomes excited because pizza is one of his favorite foods. His O&M training has taught him how to move safely through his environment, determining where his mother might be. His mother greets him, allows him to feel the warm box, and
communicates that she has brought home pizza. The mother and son use guided travel to walk to the kitchen.

From O&M instruction, Jason has learned to interpret and utilize available sensory information.

He knows how to move safely through the environment and he is rewarded with success in finding out what he wanted to know.

**What is O&M for the Child Who Is Deaf-Blind?**

**Orientation skills** allow us to know where we are, where we are going, and how to think about and plan strategies for getting to a destination. **Mobility** involves the actual movement from place to place. Along with communication skills and daily living skills, O&M skills are essential for all children who are deaf-blind. The ability to understand the environment and to move safely within it is an important component of future development, success, and independence.

O&M instruction for individuals who are deaf-blind is designed to teach them to move as independently and as purposefully as they are able. For some children who are deaf-blind, it is reasonable and desirable to expect that they will move about independently in both indoor and outdoor environments. This independence may mean using a long white cane to cross streets successfully and learning to use city transportation systems. For others, O&M instruction will provide the skills necessary to allow independent movement within the classroom or within the home. At a more basic level, and for children with limited motoric capabilities, increased independence will mean that they have better developed residual senses and can more fully understand and interpret information from their environments. They may come to understand where an object is located and where the object is in relation to their own bodies. They will have the ability to move with purpose, perhaps to extend an arm or roll to obtain that object.

While outcomes and expectations may be different for the student who is deaf-blind, the instruction is similar to that for a child with only visual impairment or blindness. The most important adaptations are those related to **communication**. The O&M instructor will need to ensure that instructions are given to the student in his or her primary language. This may require the use of an interpreter and the development of touch
cues or object cues. Certain accommodations that enable the student to interact with the public also need to be developed. For some children, the lack of auditory and visual input may have severely limited opportunities to learn about his/her environment and to develop the language to talk about it. O&M instruction must often be augmented by hands-on learning to make up for the child’s lack of prior experience. Language instruction is an integral part of any O&M training experience.

**A Team Approach**

Originally designed to assist veterans blinded in war, O&M techniques and instruction have broadened over the past few decades to include children who are blind or visually impaired and, more recently, children who are deafblind, children with multiple disabilities, and infants and toddlers who are visually impaired. The 1997 reauthorization of the Individuals with Disabilities Education Act (IDEA), Public Law 105-17, identifies orientation and mobility as a related service that teams may consider in the development of the IEP. Early focus on O&M instruction is essential for the child who is deaf-blind to develop the skills needed to travel and move independently about the environment.

A team approach is vital in the development and implementation of O&M instruction. A team may be composed of a parent, regular and special education teachers, other related services personnel, a representative of the local education agency, other individuals who may have special knowledge regarding the child and, where appropriate, the child. Each team member brings a unique perspective to the development of an appropriate educational program. The O&M specialist will participate in team-based assessments of the child and works collaboratively with all team members, including the parents, to address the unique O&M needs of the child. The O&M specialist also provides the team with activities that reinforce movement skills and promote understanding of the environment. He or she assists in analyzing the home and school environments and makes recommendations for strategies that may improve a child’s ability to travel within, and better understand, these environments. The O&M specialist may be involved in directly teaching the child specific skills he or she needs to travel safely and will share these with other team members so each can reinforce them with the child. The O&M specialist
may also work with other team members to ensure that each understands and shares in the responsibility of supporting an appropriate, individually developed O&M instruction program that reinforces movement, promotes orientation, and encourages independent travel and purposeful movement.

**Instructional Strategies**

It is best to view O&M instruction, as identified in the student’s IEP or IFSP, as a process that begins with assessment. The process is cyclical and ongoing.

Once a program is developed and implemented, the evaluation is ongoing, with data used to inform decisions about changes that may be necessary for instruction. All instructional components of each child’s program must be continuously evaluated for effectiveness, with modifications made as necessary.

**Assessment**

Initial assessment of O&M skills provides the foundation for future program planning. The O&M specialist will work closely with other team members to identify and implement appropriate assessment techniques. Assessment may include the following:

- Informal student observation, conducted in natural environments in which the student interacts (home, school, etc.).
- Assessment of communication skills and necessary adaptations.
- Parent/caretaker interviews.
- Formal assessment of orientation and mobility skills.
- Assessment of learning modalities.
- Developmental assessment of:
  - Sensory skills.
  - Cognition.
  - Motor skills (gross and fine).
Environmental analysis. Environment analysis is a key component of the assessment process. The various environments in which the student is involved should be assessed for safety. The need for any modifications that may enhance a child’s ability to travel in and understand the environment should also be assessed.

Program Development and Implementation

Communication. Developing ways to communicate presents the most significant challenge for children who are deaf-blind. Communication issues must be addressed in every aspect of instruction. For example, planning for instruction in areas such as concept development must take into account that although the child may be able to perceive the shape or configuration of a hallway intersection, he or she may need to be taught the specific language (“triangle” or “corner”) for that perception.

Children who are deaf-blind use a variety of communication methods including tactile sign language or American Sign Language (ASL), speech, gestures, fingerspelling, augmentative devices, pictures, objects, body movements, behavior, and facial expressions. Instruction strategies must incorporate the child’s primary communication methods.

Motor development includes both gross and fine motor skills and focuses on developing and/or enhancing a student’s motor abilities. These skills involve large muscle movements such as walking or running, as well as the finer skills associated with hand and wrist movements.

Concept development is closely linked to general cognitive development. It involves the understanding of sizes, shapes, and functions of objects, as well as spatial and positional relationships. It includes the awareness and knowledge of one’s own and another’s body, an understanding of the body parts, of their movement capabilities, and of body part relationships.

Concept development also incorporates an understanding of and knowledge about the environment. For example, a child who is deaf-blind may not understand the concept of a “multistory” building without specific instruction. He may know that he’s walked up a flight of stairs,
but does he understand that he is “above” the hallway he just was in? Does he know that there may be several stories still above him?

**Sensory development** optimizes a student’s ability to utilize the senses of residual sight and hearing, as well as the tactile, olfactory, and kinesthetic senses. Most students who are deaf-blind have residual hearing and/or sight, and instruction can be provided to help them learn to use this sensory information to understand and interpret information they are gathering through their senses. It is important to teach the child to interpret sensory information, assisting him or her to use this information for purposeful movement.

**Orientation skills** enable the student to use sensory information to move purposefully in the environment. Orientation skills instruction is designed to teach the student to use environmental cues (e.g., sounds, smells, and visual or tactile stimuli) to provide information about the present location and information about this location relative to other locales. For example, a child may learn to recognize that she is in the kitchen from the smell of coffee brewing or the living room because of the sensation of the carpet beneath her feet. This information enhances her understanding about the environment and how to move within it.

**Mobility skills** incorporate those O&M techniques that promote movement through the environment with safety and ease. These skills include walking with another person (guided travel), self-protection skills, and cane travel. For some, these also include the use of dog guides and electronic travel aids. For young children, these mobility skills will include early purposeful movements such as crawling and walking.

**Evaluation**

All goals and objectives in the IEP should have stated criteria so team members can evaluate the child’s progress and the effectiveness of the instructional strategies. It is essential that team members understand IEP goals and objectives and the criteria established for each. All strategies implemented into a child’s educational program must be evaluated for effectiveness and changed as necessary.
The Basics of Mobility Skills

Numerous curricula discuss mobility skills and techniques that are appropriate for students who are deaf-blind (see resource list). These skills and techniques provide methods of movement through the environment that make the child feel safe and able to participate. Basic information is presented in order to provide an overview of the different types of mobility skills and a better understanding of the purpose of each skill. For additional information, it is necessary to consult with an O&M specialist who can help to refine and individualize specific mobility skills appropriate for a particular child, develop individualized instructional programs, and recommend additional resource information.

Guided Travel

Many refer to the mobility technique involved in walking with another person as “Sighted Guide Travel.” However, it is not necessary to be sighted to be an effective guide, and, therefore, the terms “Guided Travel” and “Human Guide” are also used. Using this technique, the deaf-blind child maintains a constant grip on the guide’s arm (figure 1) while following the guide around obstacles as they travel through the environment. To maintain a grip that allows active participation in travel, the child must grasp the guide’s arm so the thumb is placed on the outside, with the remaining fingers gripping the inside of the arm (figure 2). The child is half a step behind and to the side of the guide, allowing the guide to give “cues” about the environment through arm movements, such as cues to indicate they are approaching stairs, doors, or narrow spaces. The guide can move the guiding arm behind his or her back to indicate that they are approaching a narrow space and must walk single file. Other cues can be given to indicate stairs and doors.
Cues need to fit each child’s communication and learning styles. For example, children who are blind will learn that the cue for “stairs” involves a pause from the guide when they have arrived at the base of the stairs. Children who are deaf-blind may find it helpful to enhance this cue by having the guide sign “stairs” and pause as they approach the stair case. Some children find it helpful to locate the stair railing before ascending or descending. A common adaptation for smaller students to the “basic” guided travel technique is to have the student grasp the guide’s extended fingers, wrist, or forearm rather than maintaining a grip above the elbow (figure 3). Effective guided travel involves a partnership between guide and child with both participants actively involved.

### Protective Techniques

Protective techniques allow students to travel independently, yet safely, in familiar places, enabling them to locate objects while protecting their bodies. Protection skills are primarily used in familiar indoor environments and are designed to provide information about the environment during travel. Upper hand and forearm protection skills (figure 4) in which the arm is bent and held across the body at shoulder height, parallel to the floor, with the palm facing outward and the fingertips extending beyond the opposite shoulder, will provide protection from objects the student may contact at head and chest level.

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Figure 3 A young boy grasps an adult at the wrist.

Figure 4 A boy uses his upper hand and bent and held across the body at shoulder height, parallel to the floor, with the palm facing outward and the fingertips extending beyond the opposite shoulder, to provide protection from objects he may contact at head and chest level.

Figure 5 A girl uses body protection technique with the arm extended down and held diagonally across the body.
Lower body protection (figure 5) with the arm extended down and held diagonally across the body, provides protection from obstacles at waist to upper leg level. These two techniques are sometimes used together, but they can be fatiguing. Typically, neither technique is used continually, but rather is employed as needed. For example, an individual may use trailing skills (see “trailing” below) while walking down a familiar hallway and use the forearm protection technique only near the end of the hall because he knows that there is a door that is often left open and he wants to locate it without injury.

**Trailing**

While trailing, a student will extend the arm at about 45 degrees, holding the arm to the side and slightly in front of the body while maintaining contact with a surface, such as a wall. This technique (figure 6) can provide a student with a method of maintaining alignment. It also provides some protection during travel, as well as some information about the environment. This skill can be used in a variety of situations. Examples include traveling down hallways while looking for a specific object such as a door, or when a student wants to achieve a straighter line of travel to maintain orientation, or while traveling along the outside of a building while locating a way in. Trailing is also sometimes used along with a mobility device, or in conjunction with upper hand and forearm protection (figure 7).
Mobility Devices
There are many mobility devices that can, when properly used, provide a student with the means for independent, safe, efficient travel. The most commonly recognized mobility device is the long white cane. Many other mobility devices are also available, including adapted cane devices. Mobility devices serve as an “extension” of the user’s arm(s), hand(s), and fingers, and provide protection from obstacles while allowing access to needed information about the environment. There are many theories about the selection of mobility devices, on the best times to begin instruction, and the skills necessary to warrant instruction with a particular device. It is vital that the student’s team work closely with an O&M specialist in making decisions regarding the use of mobility devices.

Dog Guides
Some individuals who are deaf-blind prefer to use dog guides rather than canes. Dog guide use is taught at specials dog guide schools. Most of the schools work primarily with adults who are blind or visually impaired, but there are several that offer their services to individuals who are deafblind as well. Most training programs provided at the schools involve four or more weeks of instruction, with many providing follow-up instruction in the student’s home environment. It is important to remember that an individual who chooses to use a dog guide still maintains responsibility for his or her own travel. The dog does not assume responsibility for orientation, nor does it make decisions about safety. Most dog guide schools require that their students be skilled travelers before being accepted into the training program. Individual who are considering a dog guide must also understand that there are additional responsibilities in caring for their dog, including the daily feeding, grooming, and toileting issues. Most dog guide schools prefer to admit only students who are past high school age, although some do work with younger students.

Electronic Travel Aids
Electronic Travel Aids (ETAs) are portable devices that emit sonar or laser signals that are reflected back to the user during travel, and are converted to auditory and/or tactile signals. The devices are hand held,
or chest, head, wheel chair, or cane-mounted, and usually serve to provide supplementary information during travel. Individuals using ETAs can learn to interpret information they receive from the device about obstacles that may be in their direct path, about “openings” in hall ways, and about drop-offs or inclines in the travel surface. They may also be used to enhance trailing abilities.

**Wheelchair Mobility**

Any O&M program for students using wheel chairs must be highly individualized and must take into account the student’s residual senses, his or her ability to operate a chair with one hand, and the potential use of a motorized wheel chair. In addition to the O&M specialist, the student’s physical therapist and occupational therapist must be actively involved in all decisions regarding mobility for wheelchair users. Some general considerations for O&M instruction for students who are wheelchair users are presented here:

- Students who are able to operate the chair with one hand can be taught modified guided travel techniques. These techniques will allow them to gather additional information during travel.

- Some wheel chairs can be adapted by adding an extended “bumper” that will serve as an extension of the wheel chair, and act as a mobility device.

- Adding foam to the front of the chair can serve as additional padding to lessen the impact when detecting obstacles with the chair.

- Trailing skills can be utilized while traveling in a wheelchair. Students who operate their chairs with one hand can trail using the other. For students not able to operate the chair with one hand, “curb feelers” can be mounted on the side of the wheel chair. The student can be taught to trail using the curb feelers. Even when someone is pushing the chair, trailing can be used so that the student can gain information about the environment, thereby enhancing his or her ability to maintain orientation.

- The student’s physical therapist and occupational therapist can help teach the student to open and close doors.
• Some students are able to use a long cane while using a wheel chair. This is true for students who are able to operate the chair using one hand, and for those who use motorized wheel chairs. Most often, the cane chosen for use with a wheel chair is longer than a typical cane.

• Instruction in interpreting information about the travel surface is important. The student can learn to discern the way different surfaces “feel” while traveling over a variety of surfaces such as, the gravel, grass, or sidewalks. This skill provides general environmental orientation.

• Using the student’s communication mode or system, the person who is pushing the chair (in effect, “guiding” the student) should use strategies that encourage active student participation during travel. The student has a right to know where he or she is, where he or she is going, and what the environment is like. This information will encourage the student to actively learn from the environment rather than simply “sit” during travel.
Working with Interpreters
by David Miller

For some students an interpreter is critical for teaching orientation and mobility (O&M) for numerous reasons, including the following:

● Clear and convenient communication is essential for establishing rapport. In turn, building rapport is basic to establishing a sense of trust and confidence for the student who is learning O&M skills.

● The aim of O&M instruction is safe and independent movement, and maintaining safety depends on the accurate communication of information.

● Students who are receiving O&M instruction may have a variety of questions and concerns. It is difficult to address their concerns or to be confidential when communication is impaired.

How do teachers, O&M instructors, and others work with interpreters during O&M instruction?

● They all work as a team.

● The O&M instructor needs to prepare the interpreter by teaching him or her O&M concepts and techniques, including sighted guide and basic cane techniques.

● The O&M instructor retains his or her teaching role; the interpreter works to make things clear; and the two consult with each other frequently. The O&M instructor checks the interpreter’s sighted guide techniques and interpretation and provides the student who is deaf-blind with tactile experiences as often as possible.

● Goals and methods need to be modified during instruction as all members of the team refine their methods of communication and see how the student is progressing.

● Because working with an interpreter may be a slow process, patience is essential.
Success depends largely on the student and the rapport and quality of communication between the student and the professionals with whom the student is working.

Additional Resources


**Practical Strategies for Families and Team Members**

- Provide opportunities for your child or student to explore all areas of his or her environment, particularly the home. Help the child locate stationary landmarks that provide reference points. For example, a child may know that he is in his bedroom after locating his dresser with the “special” handles. Be sure to allow him to find this dresser so he will know when he is in the bedroom.

- Let your child or student experience a variety of surfaces such as carpet, tiled floors, vinyl flooring, grass, sidewalks, sand, uneven pavement, etc.

- Allow your child or student to participate fully in daily activities and family routines. For example, if he wants to play with toys, help him go to the place where the toys are located and select the toy that interests him. Travel back to the play area together. This process allows him to understand his environment more completely, as compared to having the toys simply brought to him.

- Make full use of “reference points,” those clues that help us know where we are. We have all experienced being lost in an unfamiliar...
city, only to become “reoriented” once we locate a familiar landmark. Similarly, children who are deaf-blind, need to learn to use reference points to help them stay oriented in their environment. Reference points can be auditory, tactile, olfactory, or visual.

- Encourage your child or student to travel as independently as possible. If he can walk independently, allow him to do so. If he is learning to walk with a guide, don’t hold his hand and pull him along with you. If he is capable of reaching out to locate a desired toy, don’t allow it to “magically appear” by bringing it to him.

- Be sure lighting is adequate for children who have residual vision. The use of high contrasts can also assist some students. For example, using a light rug on a dark carpet may help the child recognize a transition to a different room.

- Make use of physical boundaries so the child can better understand his surroundings. It is much easier to comprehend a play area bounded by wall dividers or bookshelves than an arbitrary space in the middle of a large room.

- Provide opportunities for the child or student to solve problems on his or her own. Refrain from rescuing him or her prematurely.

- Provide numerous opportunities for making choices.

- Help a child or student associate familiar toys and objects with the environments in which they may be used. For example, show him the washcloth before walking to the bathroom for a bath, or the ball before traveling to the school gymnasium.
Whether pushing a child in a stroller or wheelchair, there is an appropriate time and place for passively transporting a mobility-dependent student. Emergency evacuations such as fire or tornado drills are one example. Typically, adults are good at providing safe and passive transport at these times. However, if we over-provide this service at other times during a child’s day we may be robbing him/her of multiple learning opportunities. Strategies to engage a student’s interest, attention and participation are easily applied when we clearly understand the benefits of doing so. This document is intended to give parents and professionals ideas for turning passive transport into teachable moments, regardless of a child’s developmental age/stage.

Principle: The ability to anticipate or predict what is about to happen to one’s body is clearly a quality of life issue. The inability to anticipate is likely to keep a child in hyper-vigilant mode. This agitated state can be expressed through irritable behavior or can cause a child to shut down his/her sensory system altogether. Sleeping is one way to escape a fearful or unpredictable world. The ability to anticipate can be linked to psychological safety. Only psychologically safe environments or worlds motivate interest, attention, movement and participation.

- Strategy: Use verbal, physical and object cues to communicate to a child that s/he is about to be handled or moved into or out of a stroller or wheelchair. Allow the child appropriate processing time before following through with adult action.
• Example: a firm touch to both shoulders at once could indicate that an adult is about to pick up or reposition the child. While giving that physical cue, the adult says, “Up, up. I’m going to pick you up. Get ready. One…two….three…” Tell the child where s/he is being taken. Announce your arrival to the location.

• Communicate to the child where you are taking him/her. Object cues can be used to represent an activity that takes place in a specific location. Example: When child recognizes a real object as a predictor or cue for a specific activity, use the object cue to communicate your intent to move the child to the location in which the activity takes place.

• Refer to Calendar Systems Brochure.

Principle: Familiarization comes before orientation. As sensory experiences become familiar, they eventually lead to thinking about those experiences. (J. Cutter). As characteristics of space become familiar, concepts are developed.

Principle: “Joint attention” with influential care givers is what motivates children to participate and learn.

Principle: When the child is thinking, the child is learning. When the adult is thinking, the adult is learning.

• The phenomenon in which a child is “here” and then is “there” with no expectations for processing the in-between is called the “travel fairy syndrome”. When children do not process their movement through time and space, because they are under someone else’s power, familiarization to the environment is thwarted. Without familiarization, orientation is impeded. Many children in wheelchairs and strollers experience the travel fairy daily. When we push them from one location to another passively, without engaging their brains, we are missing teachable moments.
• Travel by stroller or wheelchair can be used to:
  o practice an object communication system
  o build tolerance / anticipation for movement and change
  o explore the environment through sound, smell, movement, touch, taste
  o reach out to touch things (use hand-under-hand rather than hand-over hand)
  o observe what your child is observing and providing a meaningful tactile experience with what has been observed
  o sequence landmarks
  o make choices; “We stopped. Do you want to GO?”
  o learn to identify common environmental features such as doors, doorknobs, door plates, walls, floors, trees, fire hydrants, etc.
  o reinforce / practice / teach “left”, “right”, “stop”, “go”, “wait” etc.
  o increase tactile exploration
  o use smell, wind, temperature, time-distance awareness as environmental cues
  o tactually orient to the environment; practice adaptive movement of the hands i.e.: open / close doors, turn knobs, push handles, push elevator buttons, engage/disengage wheelchair locks (if appropriate), hold something in her lap,
  o develop concepts as a result of being exposed to real objects
  o identify familiar sounds and notice unfamiliar sounds
- listen for specific sounds
- anticipate a shift in air current when turning a corner
- use calendar or scheduling systems to promote spatiotemporal development and communication

- When encouraging a blind child to use his/her hands for tactile exploration, use *hand-under-hand* rather than *hand-over-hand* as a way of inviting, but not forcing participation. Many blind children develop tactile defensiveness as a result of the way adults handle their hands.

**Principle:** Sighted children need only to look around to know what objects occupy space. Blind children need to tactually explore to understand what objects occupy space. Blind children learn from part to whole; sighted children learn from whole to part.

**Principle:** Active movement and exploration will be delayed if adults promote passive movement. Children in wheelchairs are at increased risk for having everything done for them.

Note: Joe Cutter is a pediatric O&M Specialist from New Jersey and author of the book: *Independent Movement and Travel in Blind Children, A Promotion Model*, © 2007

**For More Information:**

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Other informational brochures available from Wisconsin Center for the Blind & Visually Impaired:

- Calendar Systems: A Developmental Approach for Young Children with Sensory Impairments
- Powered Mobility for Children Who Are Blind or Visually Impaired
- The Teaching Cane Strategy: A Developmental Approach to Orientation and Mobility Instruction for Young Children

Resources for More in Depth Information on Deafblindness

- Texas Deafblind Project [http://www.tsbvi.edu/deaf-blind-project](http://www.tsbvi.edu/deaf-blind-project)
- National Center on Deafblindness (NCDB) [https://nationaldb.org](https://nationaldb.org)
- Intervener, Utah State University [http://intervener.org](http://intervener.org)
- Deafblind International (DbI) [http://www.deafblindinternational.org](http://www.deafblindinternational.org)
- Sense [https://www.sense.org.uk](https://www.sense.org.uk)
- iCanConnect [http://www.icanconnect.org](http://www.icanconnect.org)
- Helen Keller National Center (HKNC) [https://www.helenkeller.org/hknc](https://www.helenkeller.org/hknc)
- National Family Association for Deaf-Blind (NFADB) [http://nfadb.org](http://nfadb.org)
- Deaf_Blind Multihandicapped Association of Texas (DBMAT) [http://www.dbmat-tx.org](http://www.dbmat-tx.org)
- Texas Chargers [http://www.texaschargers.org](http://www.texaschargers.org)

IEP Quality Indicators for Students with Deafblindness
[http://www.tsbvi.edu/iep-quality-indicators-db](http://www.tsbvi.edu/iep-quality-indicators-db)

CEC Intervener Competencies
[http://intervener.org/docs/special_educator_know.pdf](http://intervener.org/docs/special_educator_know.pdf)
Texas School for the Blind & Visually Impaired
Outreach Programs

Figure 1 TSBVI logo.

This project is supported by the U.S. Department of Education, Special Education Program (OSEP). Opinions expressed here are the authors and do not necessarily represent the position of the Department of Education.

Figure 2 IDEAs that Work logo and OSEP disclaimer.