Tactile O&M Strategies for DeafBlind Travelers

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Agenda

- Study Overview
- Benefits of Touch
- Panelists Perspectives
  - Deb Marinos
  - Maricar Marquez
  - Heather “Hex” Lightfoot
- Research Takeaways

Background

- Orientation and Mobility (O&M) specialist preparation emphasizes audition & spoken language
- Limited training in touch-based O&M techniques
- Minimal preparation for DeafBlind-specific travel strategies

Study Overview

- **Research Type:** Qualitative
- **Participants:** (12) DeafBlind Adults and (20) O&M Specialists
- **Data Collection:** Demographic questionnaires, Likert Confidence Level Survey, and Focus groups (via Zoom) with ASL & TASL interpreting
- **Data Analysis:** Peer reviewed thematic coding

DeafBlind Participant Demographics

- 12 DeafBlind adults (Aged 20-76)
- **Ethnicity/Race:**
  - Caucasian (8), Pacific Islander (1) Asian (2) and Black/ African American (2).
- **Primary Language:**
  - Spoken English (8)
  - ASL (4) Note: one individual's first language was Bengali

O&M Specialist Demographics

- **20 O&M specialists**
- **Additional Roles:**
  - SSP/Service Coordinator
    - Interpreter
    - Parent
- **Primary Language**
  - ASL (2)
  - Spoken English (18)
- **Race/Ethnicity:**
  - Caucasian (14)
  - Asian (1)
  - Cajun French (1)
  - Black (3)
  - 1 chose not to share

Benefits of Tactile O&M Strategies

- **Providing physical touch** can provide reassurance and confirmation (i.e., haptics, protactile, etc.)
- **Tactile Exploration** can help make meaning of the environment
- **Tactile maps and models** can help in the process of learning routes and refining navigation skills
- **Haptic Technology** with meaningful vibratory feedback can be helpful for specific tasks

Insights from DeafBlind Panelists

Deb Marinos

- Founder, Adaptability for Life LLC
- Licensed Professional Counselor (LPC)
- Certified Rehabilitation Counselor (CRC)
- M.S., Counseling

Maricar Marquez

- Supervisor, Independent Living Department, HKNC
- M.Ed., Vision Rehabilitation Therapy, UMass Boston
- M.S., Administration, Gallaudet University
- B.A., Communication Arts, Gallaudet University

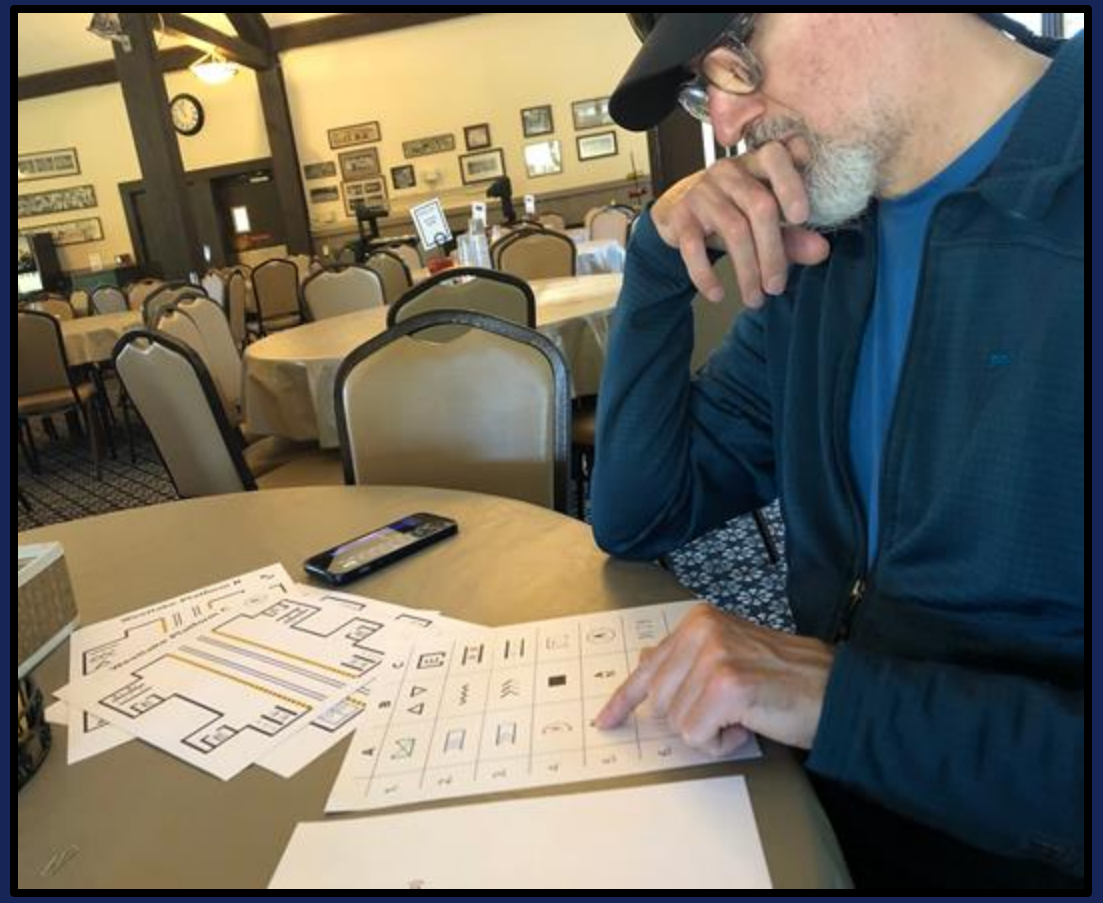
Insights from an O&M Specialist

Heather “Hex” Lightfoot

- Deaf mother of three
- CODA
- Parent of a DeafBlind teen
- M.Ed., Special Education
- DeafBlind Graduate Certificate, Texas Tech University
- Alumna of Gallaudet University and Texas Tech University

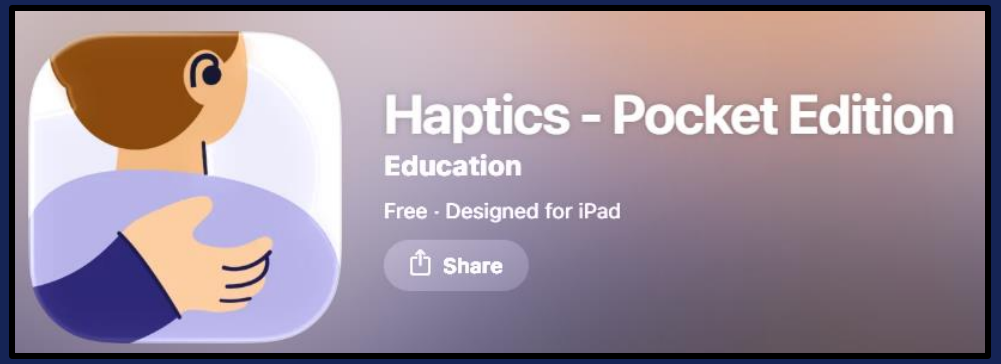
Study Takeaways

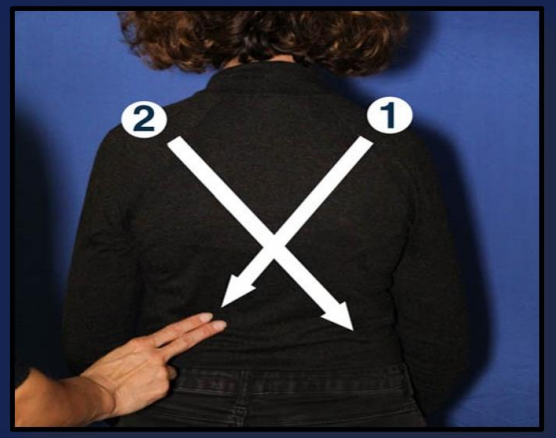
- DeafBlind traveler insights
- O&M Specialist perspectives
- Comparison of DB and O&M perspectives
- Shared themes identified



Touch Requires Consent & Collaboration

- Joint or Mutual Attention
- Respect individual and cultural preferences
- Obtain understanding, consent, and participation
- Misuse of touch can cause discomfort or distress
- Discuss touch preferences and boundaries early





X for EMERGENCY

Spatial Information through Touch

- Touch supports understanding of space and relationships
- Environmental landmarks identified
- Hands, arms, back, and shoulders used for tactile mapping
- Shared strategy identified by DeafBlind travelers and O&M specialists

Touch used to convey Instructor Positioning

Touch As Communication & Confirmation

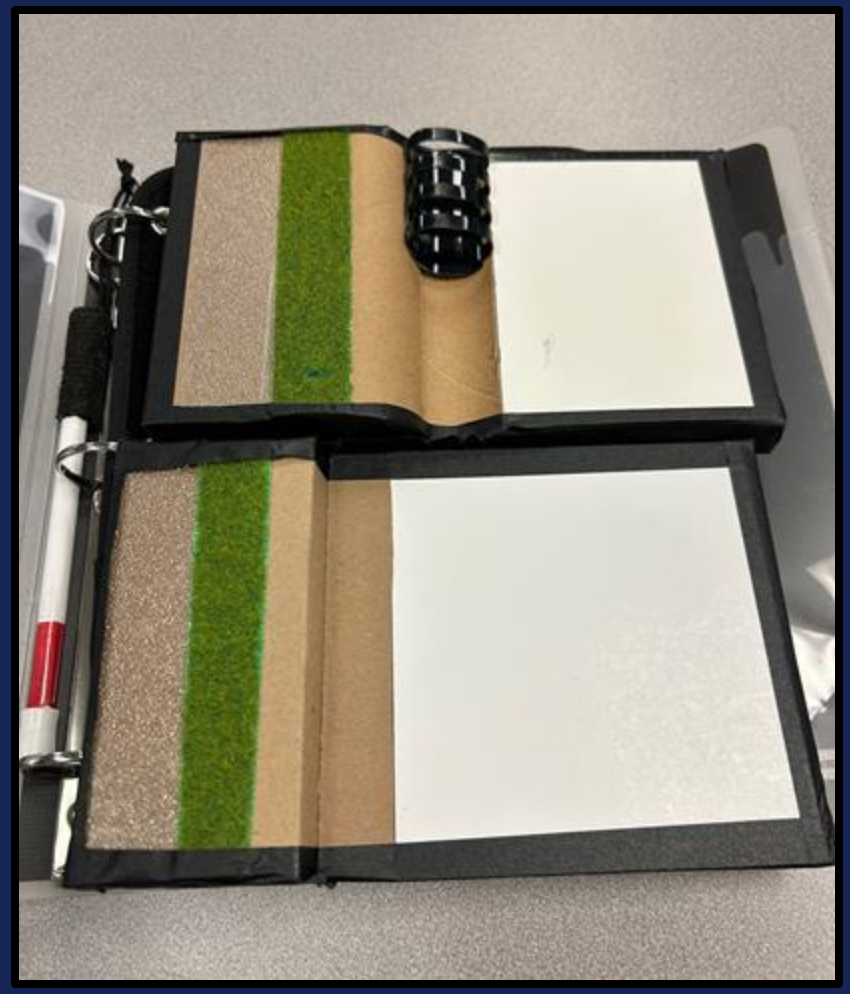
- Reduces interruptions
- Can be affirming
- May support concentration

- Maximizes the use of vision, hearing, and other senses

Jessica uses her hand on the traveler's shoulder to tap out the vibratory cadence on the app. Supporting the traveler to use his scanning strategically for intersection analysis.

Benefits of Tactile Maps

- Helps to learn routes and navigation skills
- Support orientation and joint attention
- Supports sequencing, memory, and route review.
- Useful before and after the lesson
- Supports communication in loud environments



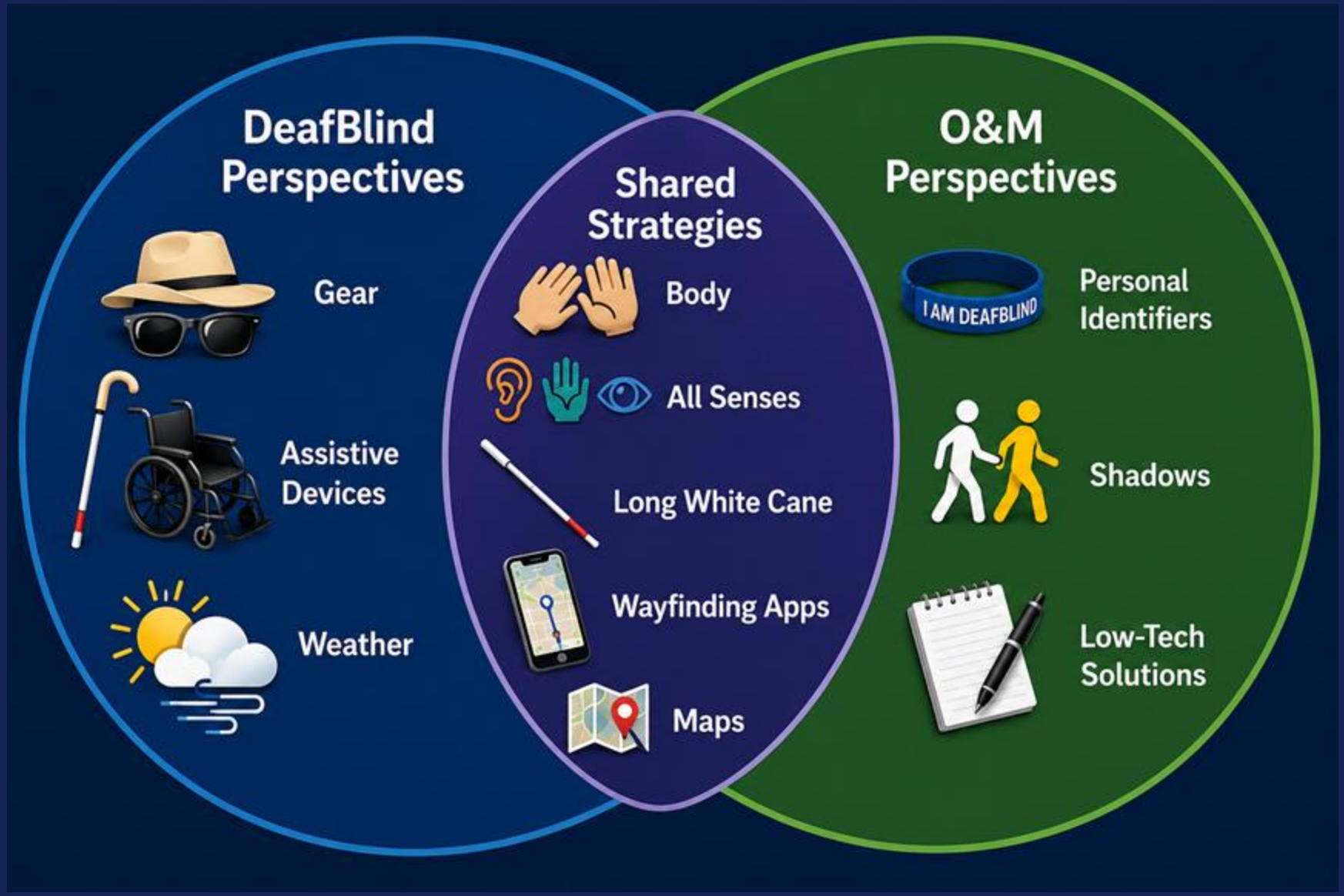
Using Technologies with Tactile Support

- DeafBlind people want equity with technologies, but it is still evolving.
- Technologies with meaningful vibratory feedback paired with visual or auditory feedback can be helpful for specific tasks.
  - **OKO app** to describe traffic and walk signals
  - The **MiniGuide** is an older technology that provides vibratory feedback for object detection.
  - **Glidance** is a cane that incorporates self-driving technologies through the handle of the cane.

Chunking and Sequencing Information

- Cognitive overload- too much information to process
- Pre-Lesson Communication and Post- Lesson Communication
- Backward chaining- start with the destination
- Build muscle memory
- Chunking tasks build confidence and reduce stress

Overlapping Themes



Importance of Interpreters

Interpreters help communicate O&M concepts and establish O&M goals

Roles and initiation of touch need to be discussed ahead of the lesson.

Planning with Interpreters

- Many interpreters are not experienced with interpreting O&M lessons.
- Review specific vocab and goals of the lessons with interpreters.
- Explain your intention for assessment and instruction. It is fine to include the DB traveler in this so that there is shared understanding.
- Be explicit about the location and weather needs for the lesson. Suggest a hat, sunscreen, appropriate footwear.

Mitigating Travel Risks

- Findings from this study confirm prior research:
  - Be explicit with travelers about the driver behavior and ways to reduce risk. (Dona Sauerburger's Risk Checklist)
  - Discuss street crossing approaches such as flagging, reversible step, and intentional body movement to increase driver yielding. (Dr. Eugene "Gene" Bourquin - Multiple Articles)

Gene (Left), Dona (Right)

Desire for Equity, Patience, & Increased Instructional Time

- A need for increased instructional time for tactile exploration.
- Recommend O&M Specialists attend DB specific workshops.
- Equal access with navigation apps - able to pair well with refreshable braille displays and/or to offer haptic feedback.
- Would like O&M instructors to be more patient with them and to believe inthem. (let the DB traveler assess “acceptable risk”)

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Upcoming Events!

- Webinar: Protactile Philosophy
  - July 1, 2026, 3pm-5pm EST
  - Visit our website at www.helenkeller.org to register

- O&M Seminar at HKNC coming in 2027

Evaluation

Sponsorship

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