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6 Evidence-Based Strategies to Enhance Video Telehealth

A Practical Guide

COVIU Simple & Secure Telehealth

Key Insights

1. Hands help social presence
2. Eye contact builds trust
3. Camera angles may have unintended consequences
4. Less feedback can lead to lecturing
5. Constant self-monitoring is fatiguing
6. Better hardware might improve cognitive load

PLUS! Tips for pediatric telehealth

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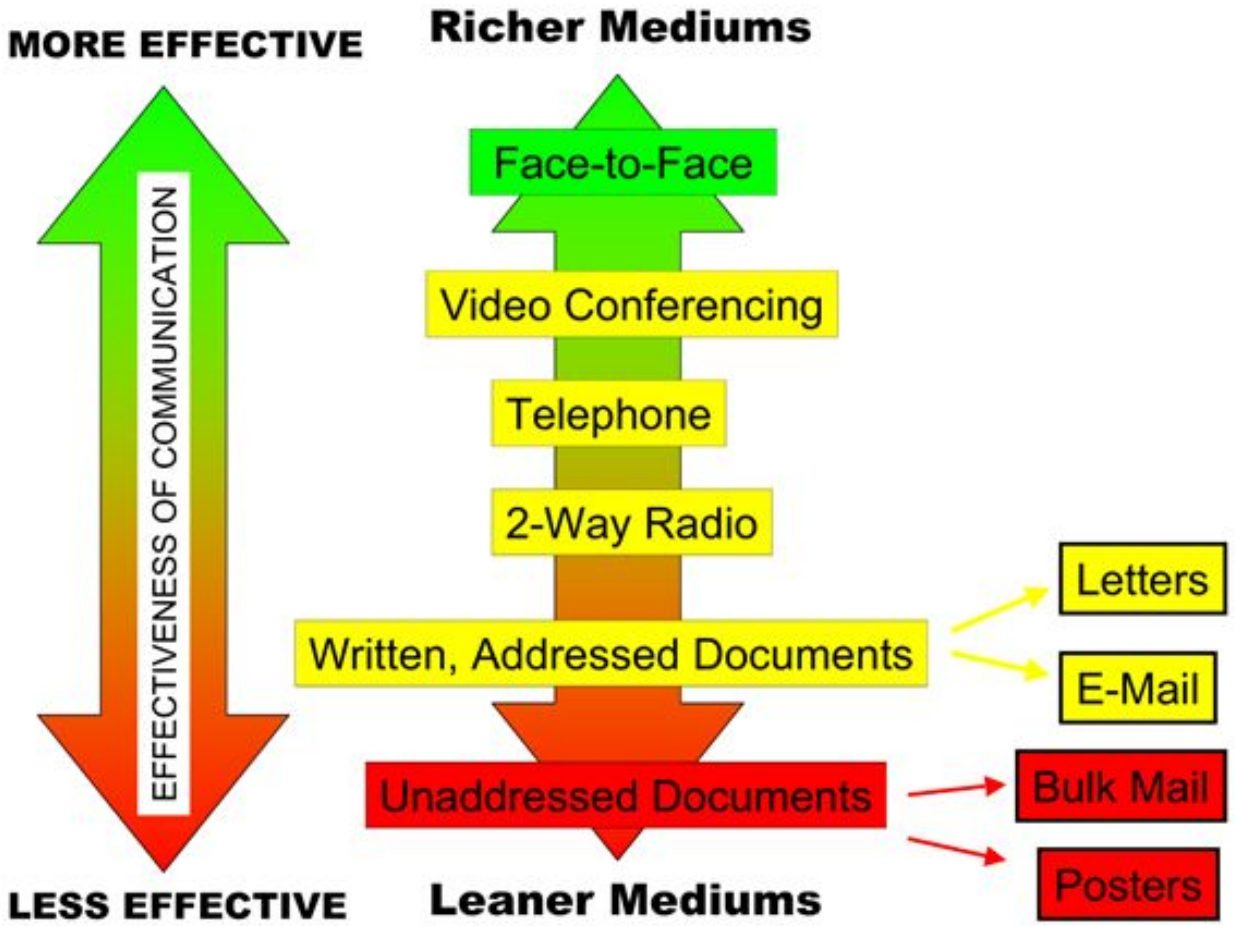
Video Communication (VC)

- Most important aspect of telehealth
- **“Computer-Mediated Communication”** (CMC) = a branch of **social psychology**
- CMC research can inform telehealth

1. Hands help social presence

Media Richness Theory



Non-Verbal Cues

Non-verbal cues:

- Eye contact
- Vocal Intonation
- Gestures

Effortless, yet complex (Croes et al., 2019)

More difficult in VC

Study: Non-Verbal Cues in VC

- 93 cross-sex “dyads” (pairs)
- Dyads completed get-acquainted exercises in:
  - F2F
  - Video
- Measured:
  - Visual non-verbal cues (head nods, smiling, forward lean, postural matching)
  - Vocal non-verbal cues (vocal intensity, pitch variation)

Social attraction in video-mediated communication: The role of nonverbal affiliative behavior

Journal of Social and Personal Relationships
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Study: Non-Verbal Cues in VC

- Compared to F2F, VC dyads:
  - Spoke 15% louder
  - Smiled more animatedly
- No difference in head nods, gaze aversion, and speech rate
- Few cues influenced social attraction, except speech rate & gaze aversion
- Similarly, Ta, Babcock, & Ickes (2016) found smiling, gaze, and head nods did not impact outcomes in a didactic semantic learning task

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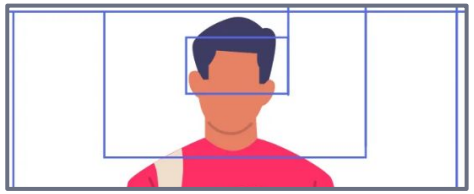
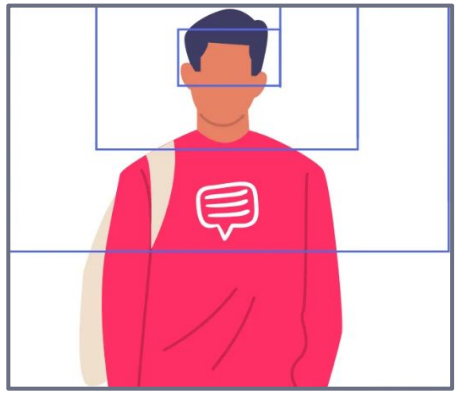
Study 2: Non-Verbal Cues in VC

- Teoh et al. (2010)
- 64 students complete a **creativity** and **negotiation** tasks over video
- Videos displayed:
  - Restricted view (head & shoulders)
  - Full view (head to waist)



Restricted view



Full view

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Study 2: Non-Verbal Cues in VC

- Full view has significantly higher reporting on **social presence**, although limited impact on **trust**

- Thus, ability to **see** non-verbal behaviors may be important

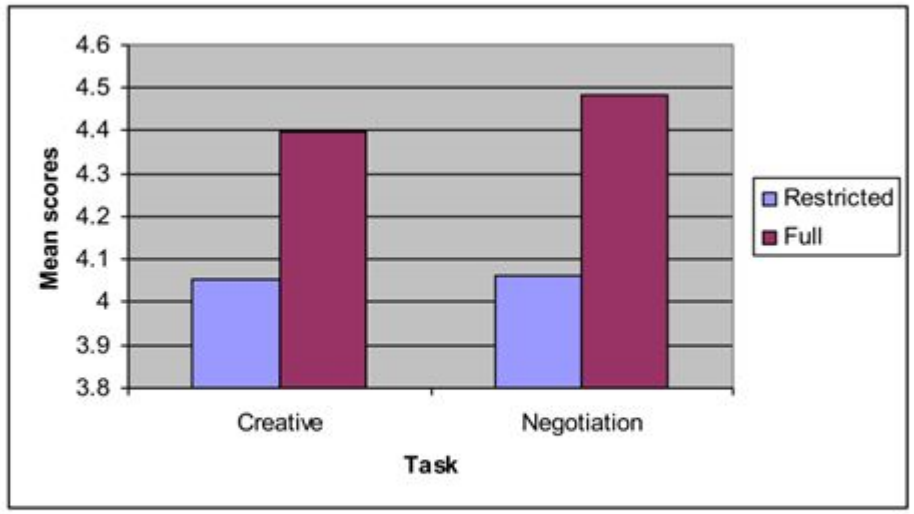

Figure 2. **Presence Scale scores for task type and amount of visual information.**

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Recommendations: Non-Verbal Cues

- Amplify non-verbal communication
- Practice using webcam
  - ‘Camera’ on PC
  - ‘Photobooth’ on Mac
- Wide-angle webcam

Logitech c920e (or c930e!)

- US$69.79 on Amazon

Recommendations: Non-Verbal Cues

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Recommendations: Non-Verbal Cues

“It’s helpful for clients to be able to see micro-facial expressions, which can be achieved with good - but inexpensive - lighting”.

Dr. Aaron Frost, Benchmark Psychology

Recommendations: Non-Verbal Cues

Desk Ring Light

- $22 on Amazon

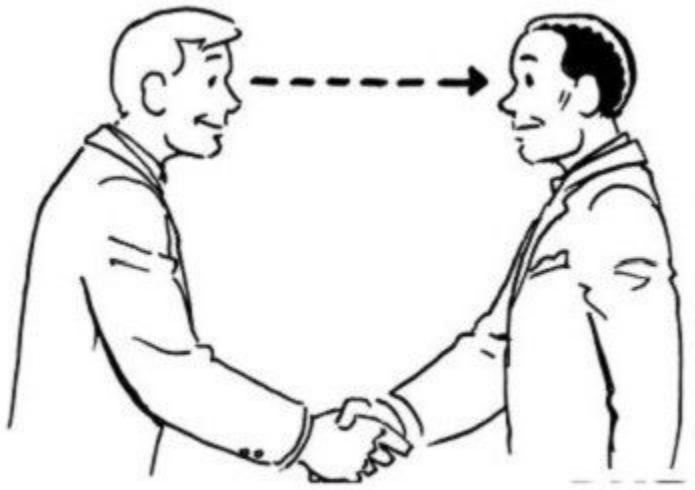
Block-Out Curtains

- $20 from Amazon

2. Eye contact builds trust

Eye Contact

- Eye contact is an essential **non-verbal cue**
- Eye contacts occurs **61% of the time**, about half of which is mutual (Bohannon et al., 2013)
- Essential for impression formation and **building trust**



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Study: Eye Contact in VC

- Bekkering & Shim (2006)
- 34 undergraduate students
- Participants listened to messages from either:
  - Video center (eye contact)
  - Side video
  - Top video
- Measured self-reported trust on Individualized Trust Scale

Side video condition | Video center condition | Top video condition

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Study: Eye Contact in VC

- Center video **(with eye contact)** was rated most trustworthy
- Side & top video were **least trustworthy**
- Small **sample size**

Center Video	5.15
Side Video	4.41
Top Video	4.38

All scores on a scale of 1–7. Least Significant Difference (LSD) between message types is 0.33. For example, the difference between center video and voicemail is not significantly different, but the difference between email and off-center videos is.

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Recommendations: Eye Contact

1. Use eye contact, but sparingly
2. Consider what's "normal" for the patient
3. Place item next to webcam
4. Position client's video top of screen
5. Technical solutions
   a. Apple Sidecar
   b. Teleprompter

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3. Camera angles may have unintended consequences

Camera Elevation

High-angle shot

Low-angle shot

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Study: Camera Elevation & Social Status

- Thomas & Pemstein, 2015
- 84 undergraduate students in dyads
- Cameras were placed:
  - above camera
  - below screen
- Dyads then played a social decision making game

	P1 Chooses ▒	P1 Chooses ▨
P2 Chooses ▒	P1: $3, P2: $2	P1: $0, P2: $0
P2 Chooses ▨	P1: $0, P2: $0	P1: $2, P2: $3

FIGURE 2 | Payoff structure of the coordination game in Experiment 2.

FIGURE 1 | Webcam views for Experiments 1 and 2. (A) The face on the monitor is captured from the high camera angle. **(B)** The face on the monitor is captured from the low camera angle.

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Study: Camera Elevation & Social Status

- Participants looking *up* were 2x more likely to choose option with smaller payoff

TABLE 1 | Participant choice in Experiment 2.

Condition	Room	Percentage Choosing $3 Option
Asymmetric webcam	A (low camera; $n = 21$)	67%
	B (high camera; $n = 21$)	38%
Symmetric webcam	A (high camera; $n = 21$)	50%
	B (high camera; $n = 21$)	52%

- Effect attributed to perceived height → social status

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Recommendations: Camera Elevation

Recommendations: Camera Elevation

Laptop Risers

- $39 from Officeworks.com.au

Keyboard & Mouse Combo

- $24 from Officeworks.com.au

4. Less feedback can lead to lecturing

Study: Verbal Cues in VC

HUMAN-COMPUTER INTERACTION, 1993, Volume 8, pp. 389–428
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Conversations Over Video Conferences: An Evaluation of the Spoken Aspects of Video-Mediated Communication

Brid O'Conaill and **Steve Whittaker**
Hewlett Packard Research Laboratories, UK

Sylvia Wilbur
Queen Mary and Westfield College

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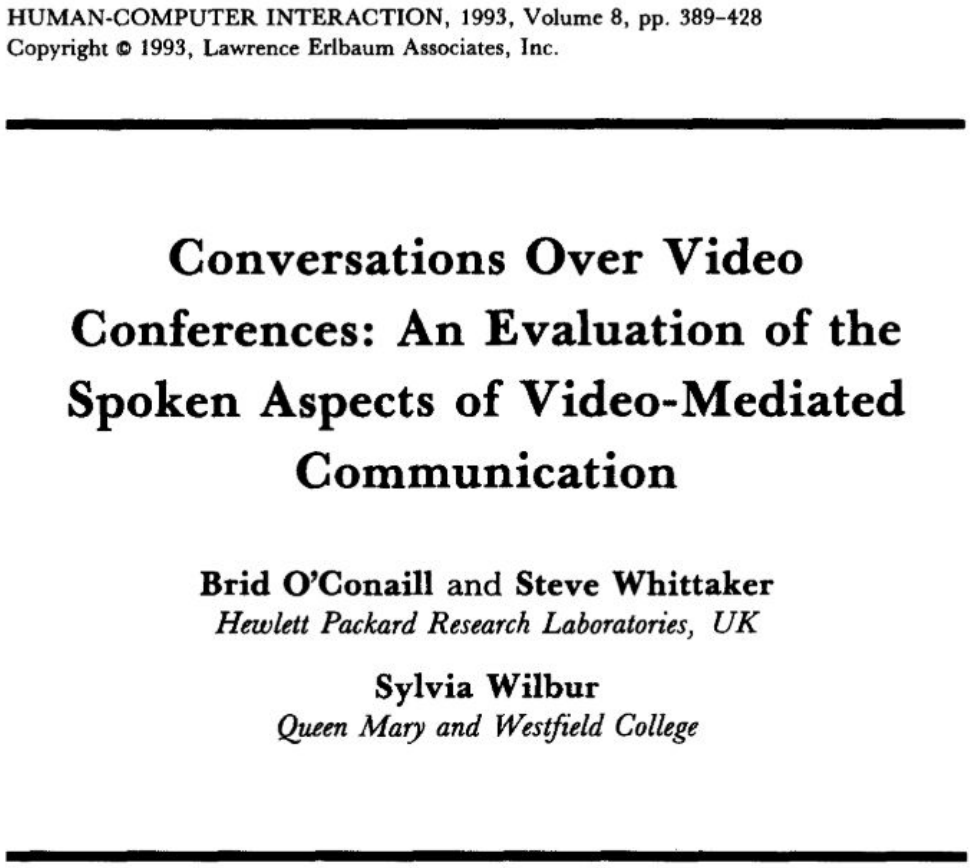
Study: Verbal Cues in VC

- Less **back-channels** (e.g. “mm”, “uhu”)
- Formal **hand-overs**
- **Lecture-styles** when connection was very poor
- Leads to **psychoeducative** style of therapy



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Recommendations: Verbal Cues

- Compensate for lag
- Check-in frequently
- Attend to the client's state

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5. Constant self-monitoring is fatiguing

“Imagine in the physical workplace, for the entirety of an 8-hr workday, an assistant followed you around with a handheld mirror, and for every single task you did and every conversation you had, they made sure you could see your own face in that mirror.”

Jeremy Bailenson (2021)

Self-monitoring during VC

- Self-monitoring in VC linked with negative affect (Bailenson, 2021)
- May reduce performance (Hassell & Cotton, 2017)
- No research into continuous self-monitoring

Recommendations: Self-monitoring

- Always hide video
- Mute audio when not talking

6. Better hardware might improve Cognitive Load

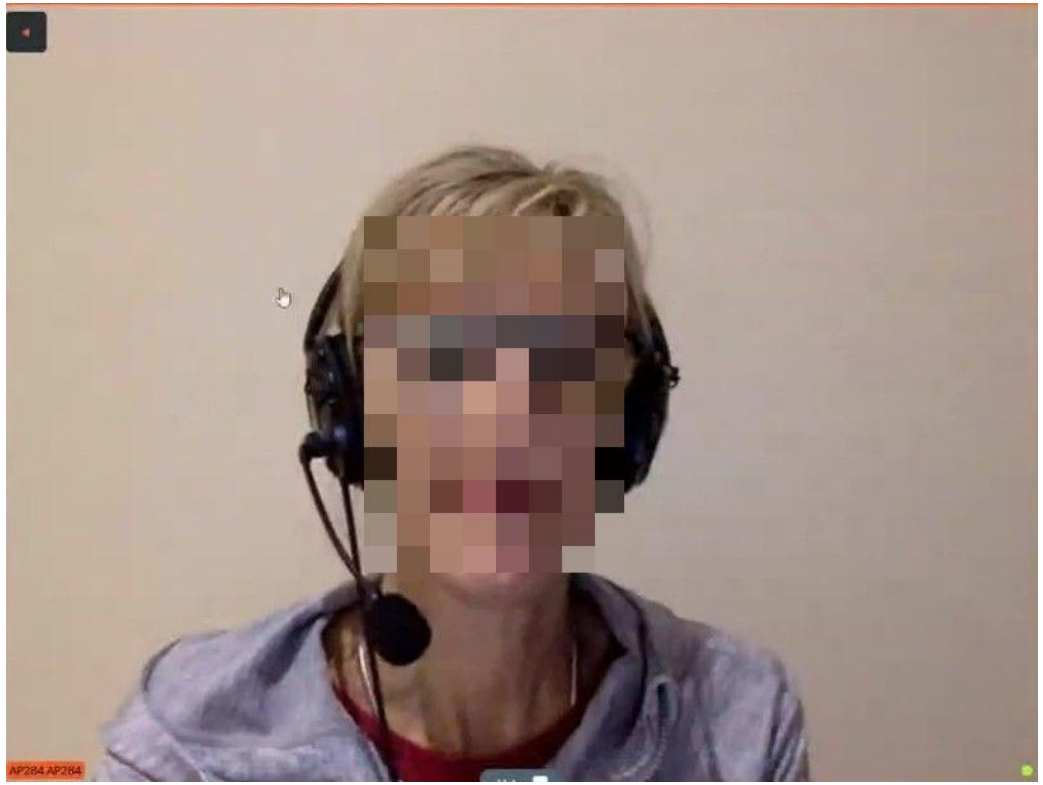
Cognitive Load in VC

Bailenson (2021) suggests cognitive load in VC is higher than F2F:

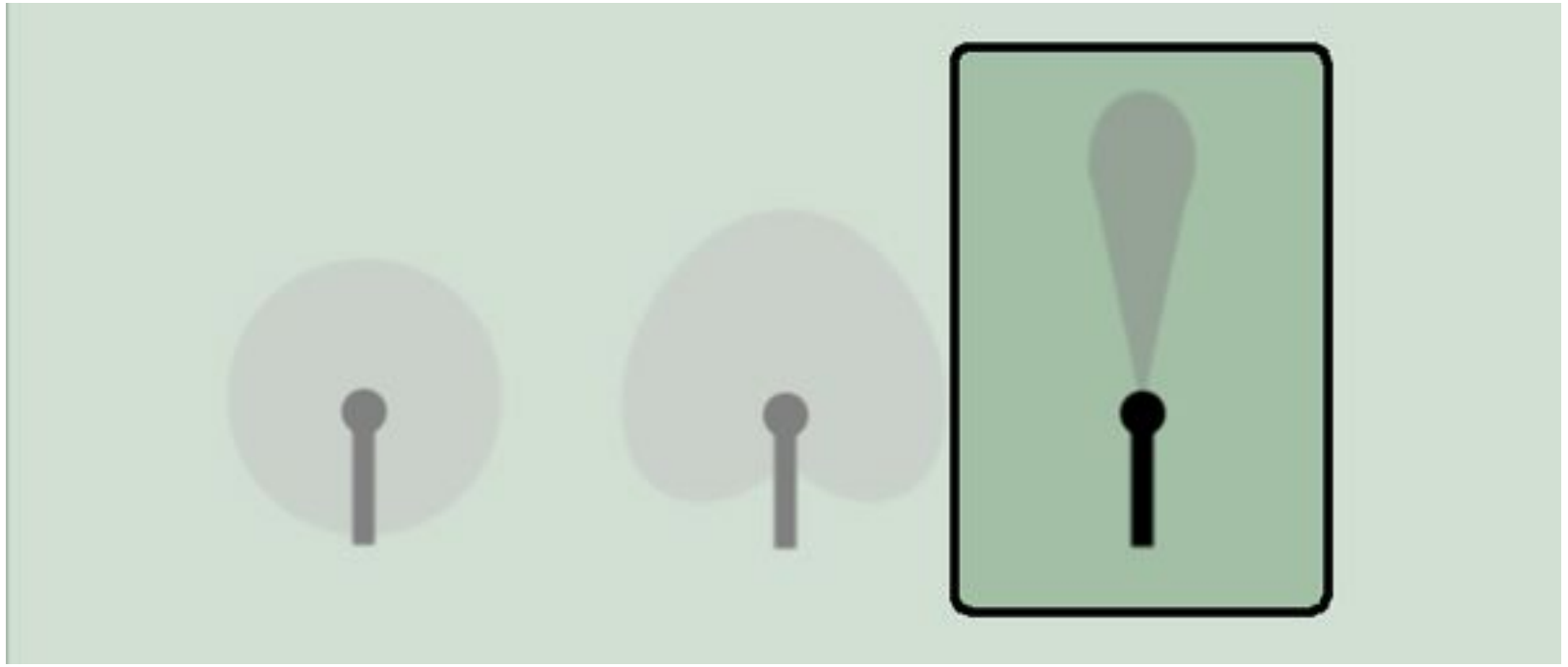
- Orchestrating video, audio, connectivity and communication
- Amplified cues and louder speech
- Received cues are reduced and more ambiguous

Recommendations: Cognitive Load

- Noise cancelling headphones
- Display - not laptop
- Directional microphone



Recommendations: Cognitive Load



Omnidirectional Microphone

Unidirectional Microphone

Recommendations: Cognitive Load

Apple AirPods

- $99 from Amazon

TOZO Wireless Earbuds

- $30 from Amazon

Headset

- $5 - $300 on Amazon

Recommendations: Cognitive Load

Krisp's AI-based noise cancellation

- Barking dog
- Street and traffic noise
- Crying babies
- Keyboard clicks
- Echo
- Acoustic echo
- Room echo

Tips for Pediatric Telehealth

Maintaining Children's Attention

- Make sessions **interactive**
- Cooperative online **games** (e.g. Skribbl)
- Take frequent **breaks**
- **Check-in** frequently & proactively
- Consider **rescheduling**

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Building Rapport

- Choose **familiar** settings
- Request **tours** of the room
- Use **duplicate items**, like play-doh or children's books

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Coaching Parents

- **Coach** parents over email, phone, or video
- Schedule '**briefing sessions**'
- Develop a **strategy** collaboratively

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Key Takeaways

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6. Better hardware might improve cognitive load

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Thank you

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