Telepractice Delivery of Multimodal Communication Treatment with Discourse and Group (TeleMCT+DG) for Aphasia

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Disclosures

Introduction

Multimodal Communication Treatment (MCT)
(Purdy & Van Dyke, 2011; Purdy & Wallace, 2016)

Purpose	Treatment
- Resolve communication breakdown - Generalize modality switching - Promote non-verbal communication - Secondary effects on spoken communication	- Word level (object nouns) - Teach 5 communication modalities - Speaking - Gesturing - Writing - Drawing - Using a Communication Book

Progression of MCT

Multimodal Communication at Single-Word Level (MCT)
(Purdy & Wallace, 2016; Wallace & Kayode, 2017; Diehl & Wallace, 2018)

→

Multimodal Communication with Discourse via Telepractice (teleMCT+D)

(Park et al., in press)

→

Multimodal Communication with Discourse and Group via Telepractice (teleMCT+DG)

(Park et al., in review)

Learning Objectives

| Describe	Analyze	Apply
Describe the key components of TeleMCT+DG	Analyze the modifications required to effectively deliver the key components of TeleMCT+DG	Apply the concepts and components of TeleMCT+DG to leaners' clinical aphasia service delivery

Methods

Treatment Setup & Materials

- 20 treatment nouns per treatment period

- +10 foil nouns = total of 30 nouns

- Zoom© - HIPAA compliant account

- Whiteboard (10x13) + dry erase markers & erasers

- 25-page communication book (binder) with 6 color pictures per page

- 2 sets of 15 object cards – 4x6 in. and laminated

- Google Slides: staged or AI-generated action scenes depicting 2 target objects
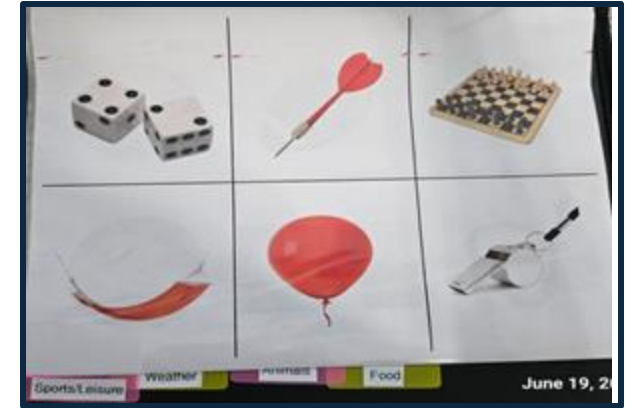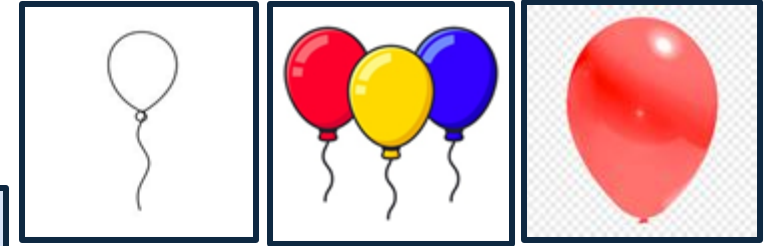
TeleMCT+DG Treatment Protocols

Individual Sessions	Group Sessions
(Two 1-hour individual sessions per week x 10 weeks) • RCT probes • MPP training • Discourse training	(One 1-hour group session per week x 10 weeks) • Icebreaker activity • RCT trivia • Scene presentation

Treatment Tasks - Individual Sessions

**Referential Communication Task (RCT)**
- Probe task
- Matching with one set
- Randomly switch for 8/15
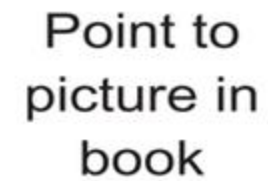
Modality Production Probes (MPPs)
- Modality training in 5 modalities with repetition
- Four targets across 4 sessions

Discourse Task (Picture description)
- Generating a story about a scene with clinician cues/prompts

The girl wears headphones and deodorant on a run.

Starting Each Session
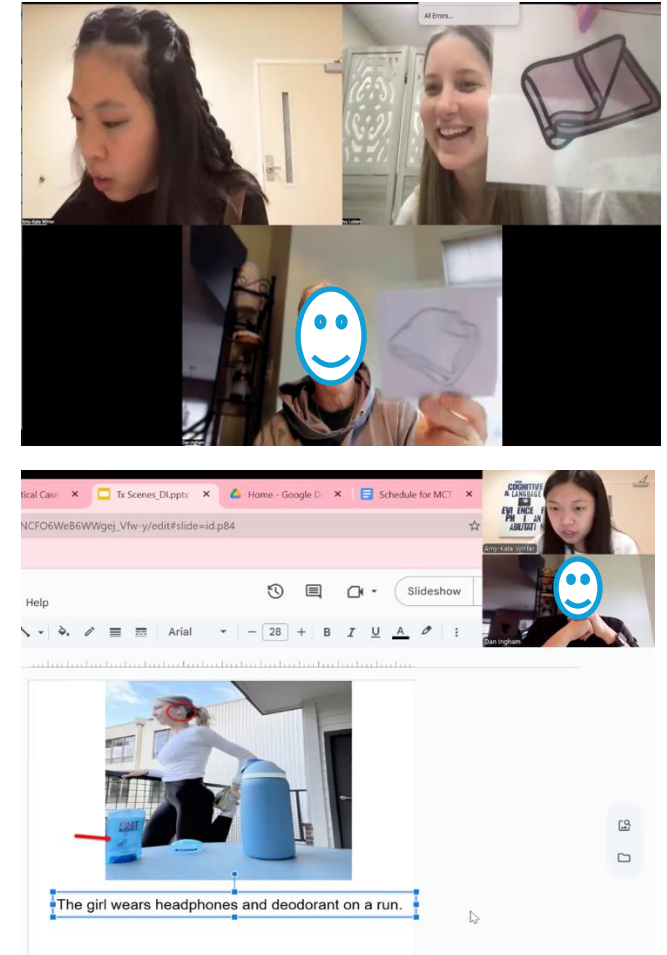
Appendix 1. Modality chart

Draw · Speak · Point to picture in book · Write · Gesture

Purdy & Wallace, 2016

RCT

Modality Production Probes

- Explicit training of 20 nouns across treatment period
- 4 nouns for 4 sessions in a row (2 weeks) with decreasing cues:

Trial 1

- Model + verbal discussion + imitation
- Joint creation of gesture and drawing (personal)
- Repeat each modality up to 5 times
- Home practice

Trial 2 & 3 (Session #3 and #4)

- Presentation of modality chart + verbal reminder
- Verbal cue to demonstrate all modalities for each word
- Specific modality requested if not demonstrated
- Model + verbal discussion + imitation if needed
- Home practice

Modality Production Probes

Modality Production Probes

Discourse Training Task

- Explicit training of 20 nouns across treatment period
- 4 nouns for 4 consecutive sessions (2 weeks) with decreasing cues (same words as MPP task):

Trial 1 (Session #2)

- "Communicate a story about the picture using the target objects."
- Text box added to slide to type words produced
- Target words bolded and practiced with all modalities
- Repetition up to 5 times for each modality
- Expansion

Trial 2 & 3 (Session #3 and #4)

- "Communicate a story about the picture using the target objects."
- Text box added to slide to type words produced
- Cues to produce the words in the sentence in all 5 ways
- Specific modality requested if not demonstrated
- Model + verbal discussion + imitation if needed
- Expansion
- Home practice after Trial 3

Discourse Training Task

Group Sessions

Warm-Up:

- Play selected song
- Discuss theme with picture support
- Modality chart + verbal reminder

Treatment:

- Word level practice: clinician models and all "guess"
- Individual scene/discourse presentation
- Group discussion of scenes

Wrap-Up:

- Next song
- Next theme

Group Sessions

Telepractice Modifications

- Zoom© instructions/training sessions

- Modifications/adaptations to the treatment protocol

  Speaking: Pointing to mouth, choral speech production

  Gesturing: Care partner assistance for hand-over-hand and modeling

  Writing/Drawing: External document camera, model with whiteboard, care partner assisting with camera display

  Communication book: care partner assistance and stand for limited mobility

Analysis & Results

Treatment Outcome Measures

|	Outcome Measure	Calculation
RCT	Initial accuracy rate of trained and untrained items	# initially accurately communicated / # total number of trained or untrained items
	Repair accuracy rate of trained and untrained items	# accurately repaired items / # total items that had an opportunity to switch the modality
	Verbal Modality rate	# successfully communicated verbal modality / # total items
	Non-verbal Modality rate	# successfully communicated non-verbal modalities / # total items
Discourse	Overall accuracy rate of trained and untrained items	# accurately communicated items / # total of trained or untrained items
	Verbal modality rate	# successfully communicated verbal modality / # total items
	Non-verbal modality rate	# successfully communicated non-verbal modalities / # total items

Case Study

- 50-year-old male, former computer engineer
- Left hemisphere stroke on 03/2020
- WAB-AQ: 32.3/100, Broca's type
- BNT short form: 1/15
- SAQOL-39 Communication Subtest: 2.43/5
- CLQT+ overall: 2/4 (Moderate)
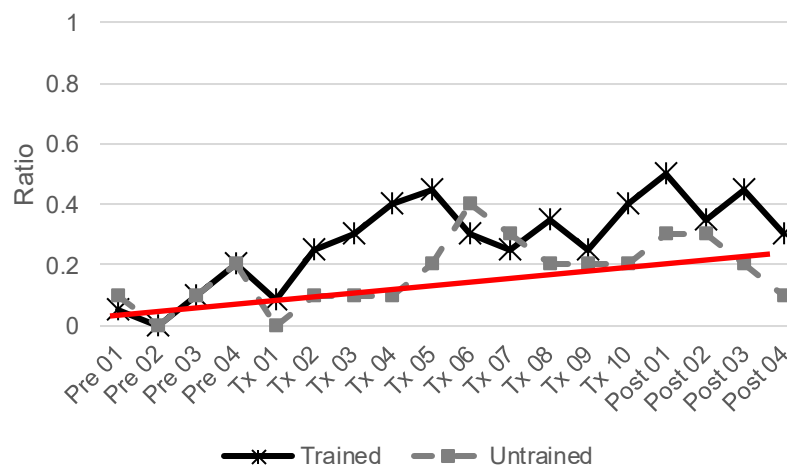- Pyramids and Palm Trees: 47/52

RCT
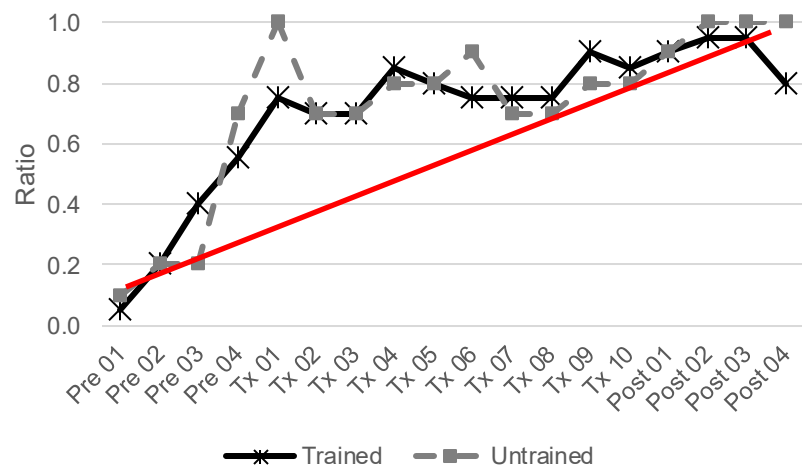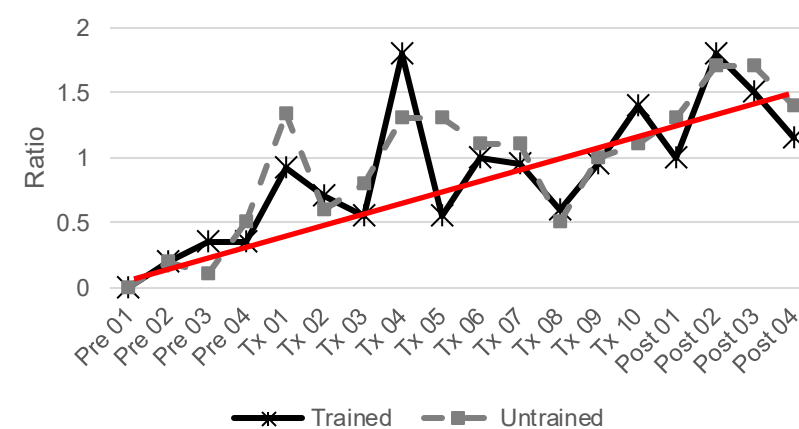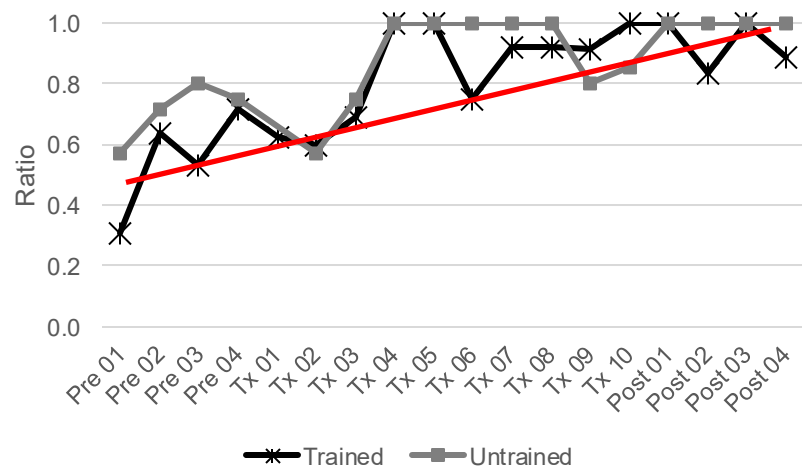
Discourse

P1 Discourse Accuracy Rate

P1 Discourse Spoken Modality Rate

P1 Discourse Non-spoken Modality Rate
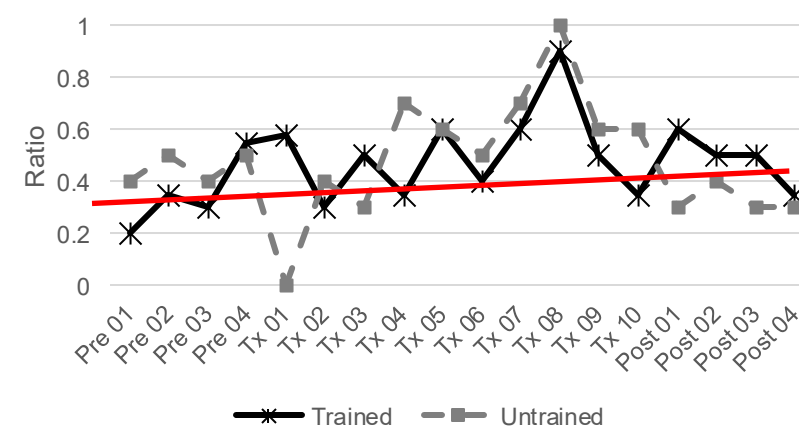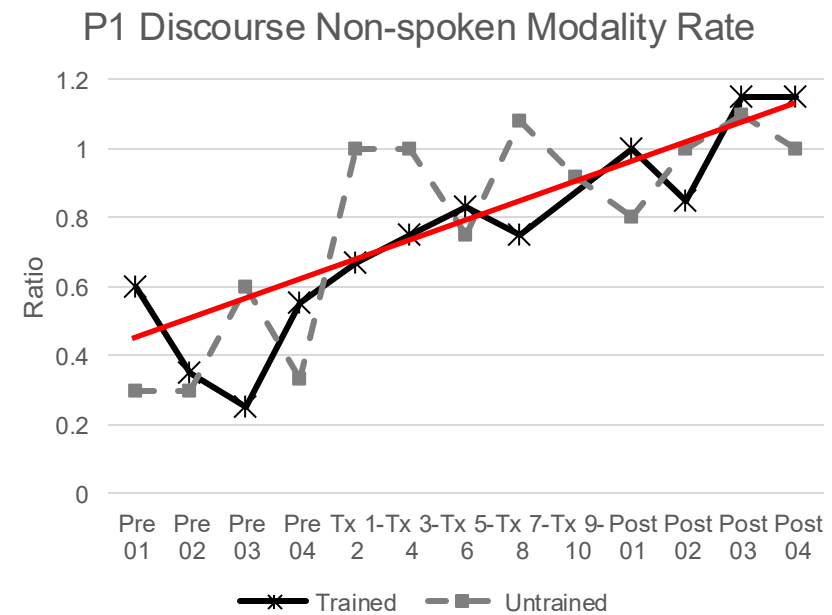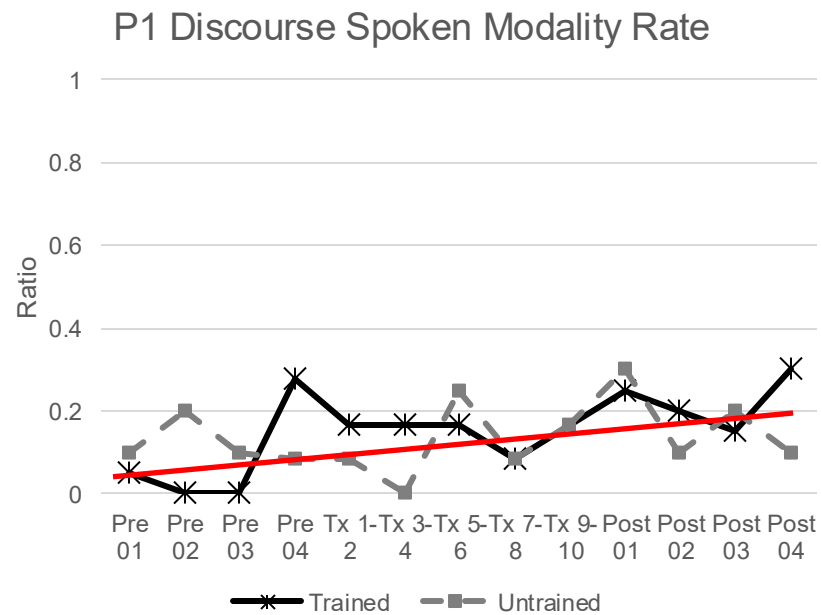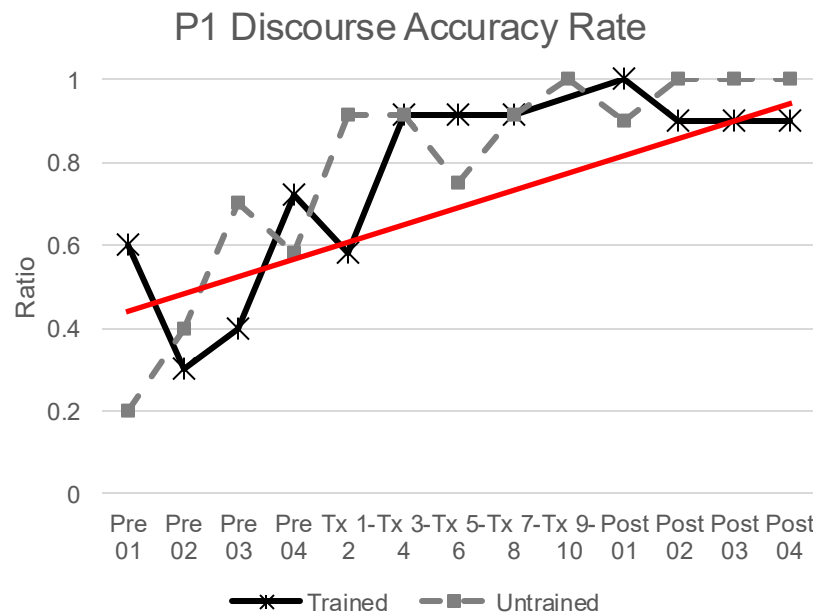
Standardized Test Results

Test	Pre-Treatment	Post-Treatment
WAB-R AQ	32.3/100	38.9/100
SAQOL-39 Communication Subtest	2.43/5	2.14/5
BNT - short form	1/15	1/15

Discussion

Clinical Takeaways

- **Explicit, integrated instruction** and **repetition**

- **Personalization**

  - Word and discourse level

  - Modality training

- **Challenges:** hemiparesis, drawings, gestures

- Feasibility for MCT via telepractice

  - Modifications of modalities

  - Availability of care partner or e-helper

- **Group sessions**

  - Motivation for home practice

  - Severity levels

Clinical Application

Do you have any clients that would benefit from MCT?

Think of 1-2 words to target using 5 different communication modalities.
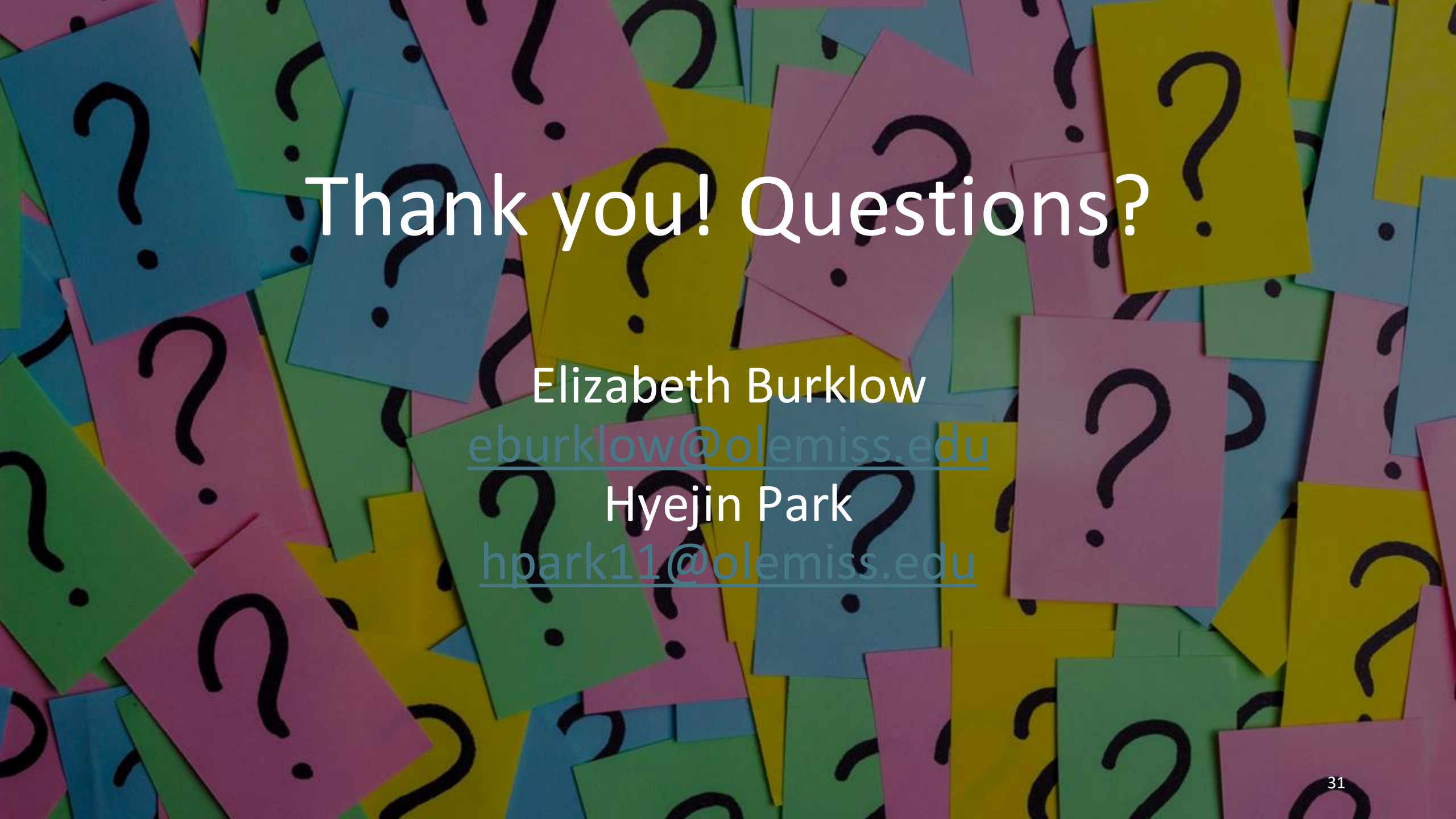
Gesture? (one-handed)

Drawing? (simplified)

Category? What else is on the page?

Picture Scene ideas?

References

- ASHA Practice Portal. (n.d.). *American Speech-Language-Hearing Association* (ASHA). https://www.asha.org/practice-portal/professional-issues/telepractice/
- Diehl, S. K., & Wallace, S. E. (2018). A modified multimodal communication treatment for individuals with traumatic brain injury. *Augmentative and Alternative Communication*, 34(4), 323–334. https://doi.org/10.1080/07434618.2018.1523224
- Kaplan, E., Goodglass, H., & Barresi, B. (2001). *Boston Naming Test* (2nd ed.). Pro-ed.
- Kertesz, A. (2006). *Western Aphasia Battery-Revised*. Pearson.
- Park, H., Wallace, S. E., Burklow, E., & Ward, E. (in press). The feasibility of modified multimodal communication treatment with discourse via telepractice (teleMCT+D) for people with aphasia. *American Journal of Speech-Language Pathology.*
- Park, H., Burklow, E., Ward, E., & Wallace, S. E. (2025). The effects of multimodal communication treatment with discourse and group activities via telepractice (teleMCT+DG) on people with nonfluent aphasia. [Manuscript submitted for publication].
- Purdy, M., & Van Dyke, E. (2011). Multimodal communication training in aphasia: A pilot study. *Journal of Medical Speech-Language Pathology*, 19(3), 45.
- Purdy, M., & Wallace, S. E. (2016). Intensive multimodal communication treatment for people with chronic aphasia, *Aphasiology,* https://doi.org/10.1080/02687038.2015.1102855
- Wallace, S. E., & Kayode, S. (2017). Effects of a semantic plus multimodal communication treatment for modality switching in severe aphasia. *Aphasiology*, 31(10), 1127–1142.

Thank you! Questions?

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TeleMCT+DG Research Protocol

Baseline Assessment

(4 sessions)

RCT (30 words)
Discourse (15 scenes)
Standardized testing

Individual Treatment

(2 individual sessions at 1 hour each per week x 10 weeks)

RCT probes
MPP training
Discourse probes
Discourse training

Group Treatment

(1 hour each week x 10 weeks)

Icebreaker activity
RCT trivia
Scene presentation

Post-treatment Assessment

(4 sessions)

RCT (30 words)
Discourse (15 scenes)
Standardized testing

Telepractice Intervention for Aphasia

General Benefits	Aphasia Considerations

• Approved service delivery by ASHA
 	
• Distance
 	
• Provider availability
 	
• Mobility-related difficulties
 	
• Lower costs
	• Feasibility in various aphasia treatments
	
	  • Single word naming, narrative treatment in discourse, supported conversation, and script training
	(e.g., Woolf et al., 2016; Carragher et al., 2021; Cruice et al., 2021; Carr et al., 2022; Rhodes & Isaki, 2018)
	
	  • But not much for non-verbal communication treatments
	
	• Telepractice considerations & modifications

Secondary Treatment Outcome Measures

Category		Outcome Measure	Calculation
Disco urse	Productivity	Number of total utterances	Average number of total utterance produced in each scene
		Number of total words	Average number of total word produced in each scene
	Lexical Diversity	Type token ratio (TTR)	Average number of unique words / total words in each scene
	Non-verbal Modalities	Non-verbal modality ratio	Average number of each modality used in each scene

Effect Size calculation

- Cohen's d
= (average posttest score – average pretest score) / standard deviation of the pretest scores
Beeson & Robey (2006)

Discourse Training Task

"There are things that can help your communication. You can use anything you need to communicate."

Present a scene picture. "Tell me a story about what's going on in the picture."

"Let's expand the story. Where do you think they are?"

If they do not switch modalities, cue using the modality chart, or ask for a specific modality.

Once the story is complete, ask the participant to retell the story. Ask participants about their experiences related to the scene.