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Efficacy of Technology-Based Early Language Comprehension Intervention (TELCI) in Struggling Comprehenders

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Introduction

Purpose of TELCI

TELCI is a computer application intended to improve reading comprehension for **struggling readers in 1st-2nd grade** by developing **inference-making skills**.

The TELCI intervention is comprised of:

- **Video** modules (12 fiction, 12 nonfiction)
- 3 key **vocabulary** words instructed per module
- 5 **inferential questions** per module
- **Scaffolding** and **feedback** for each question
- Transfer lesson **books** read-aloud by teacher to small group

Theoretical Background

- **Over 1/3** of US students' comprehension skills is **below basic level** (NAEP, 2019)
- Inferencing is the generation of **information left implicit** in a text (McNamara & Magliano, 2009) and inferencing is a **critical skill** in reading comprehension (Oakhill & Cain, 2012)
- Inferencing can be taught in a video context (Kendeou et al., 2008) and can be taught to children **without relying on their decoding skills**

Research Questions

1. Do TELCI scaffolding and feedback improve students' inference-making performance?
2. Does TELCI improve students' inference-making and language comprehension performance?

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Methods

Participants

- N = 124 1st and 2nd graders identified as struggling comprehenders (CELF score < 9)
- Half (N = 61) were randomly assigned to the TELCI condition, where they engaged in 3 videos modules and 1 read aloud lesson each week for 8 weeks

Measures

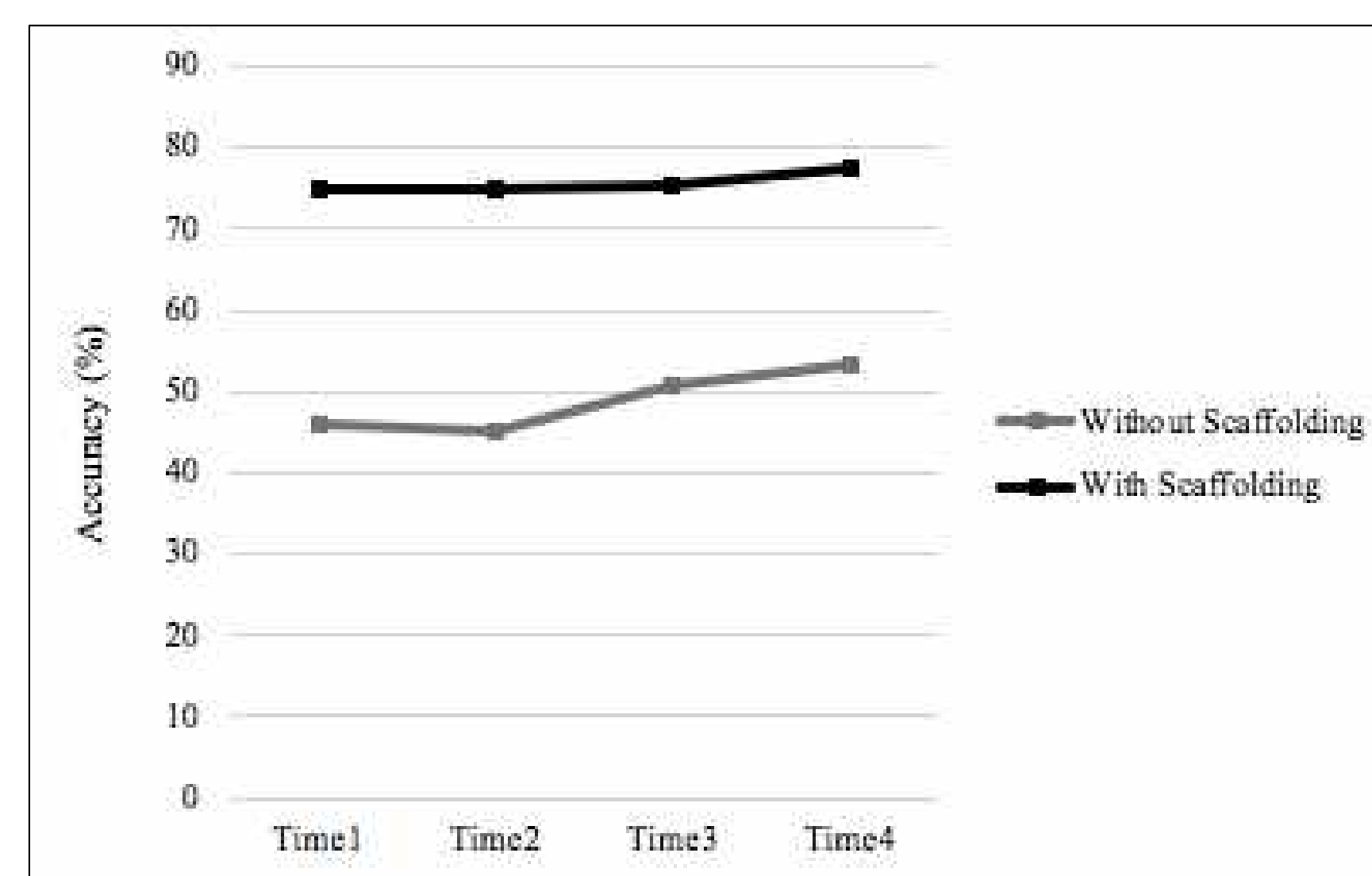
- TELCI modules
- MIA (Minnesota Inference Assessment; Kendeou et al, ip)
- CELF-5 (Understanding Spoken Paragraphs subscale; Wiig, Semel, & Secord, 2013)

Conclusion

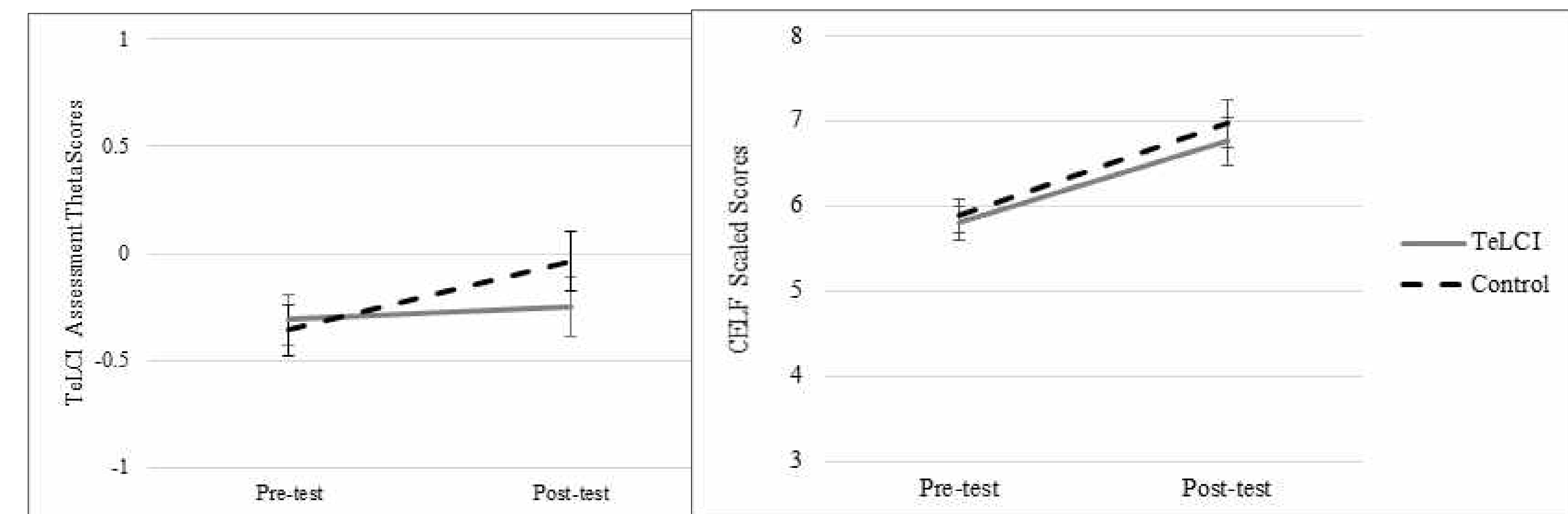
- Students who completed TELCI improved their inference-making performance after they received **scaffolding** and **feedback**.
- Analyses revealed **that both intervention and control** students showed **improvement in inference-making and language comprehension** from pre- to post. A **subgroup** of the intervention group appeared to benefit from this intervention, **outperforming the control group**.
- Future researchers should investigate **for whom and under what conditions** this intervention is most beneficial.

Results

Scaffolding & Feedback



Intervention vs. Control



Response to Intervention (RTI)

Performance on MIA post-test - pre-test (> 0) was used to define responders (n = 31) and non-responders (n = 30). Two factors predicted RTI: **gender** (boys>girls) and **Special Education** services status (no>yes).

Responders vs. Non-Responders vs. Control

