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

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Intervention

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?

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

Responders vs. Non-Responders vs. Control

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