Concurrent Treatment for Reading and Spelling in Aphasia

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Abstract

The therapeutic value of a combined treatment for reading and spelling was examined in an individual with chronic aphasia, alexia, and agraphia. Oral Reading Treatment (ORT) and Copy and Recall Treatment (CART) were implemented to increase reading accuracy and rate for text and to improve spelling accuracy for single words. Results showed improvements for both reading and spelling, and gains were maintained on follow-up probes. Pre- and post-treatment measures indicated generalized improvement in several areas: reading accuracy for new text, reading and writing of functors not targeted in treatment, and increased content and grammatical complexity of spoken language.

Introduction

Reading and writing impairments often parallel in individuals with chronic aphasia. A number of techniques have been shown to improve reading (Chernev, 1991; Beeson & Insauro, 1998) and writing skills (Beeson et al., 2002; Ivarson, 1998) in individuals with alexia and agraphia. However, side studies have examined the value of concurrent reading and writing treatments. The goal of the current treatment was to increase reading accuracy and rate for test, and spelling accuracy for single words. In addition, we examined the influence of the treatment on spoken language performance.

Methods

Participant BB

- 58 year-old, right-handed man
- 2 ½ years post large embolic left hemisphere frontoparietal stroke
- Broca’s to anomic aphasia (evolved to borderline fluent)
- Aphasia Quotient = 77.6
- Western Aphasia Battery (WAB)

Spoken Language

- WAB picture description
- Conversation sample

Pre- and post-treatment assessments

Reading and Writing

- Grey Oral Reading Test – 3 (GORT-3)
- Reading 20 functions
- Writing 20 functions

Spatiated Language

- WAB picture description
- Conversation sample

Treatment

- 16 weeks total
- Weeks 1-6: 1 time per week for 1 hour (reading treatment alone)
- Weeks 7-12: 2 times per week for 1 hour (combined treatment)
- Weeks 13-18: 1 time per week for 1 hour (combined treatment)

Copy and Recall Treatment (CART)

CART is a homework-based treatment for spelling that was trained and reviewed during treatment sessions for accountability. A total of 50 words were targeted over the course of treatment.

Copy each word 3-5 times.

• Write words from memory (recall).

• Repeat procedure until recall without error.

References


Figure 1: Pre- and Post-Testing

• GORT-3

• Ongoing accuracy increased significantly (p = .22; p < .001)

• No significant change in reading rate (t = 1.85; p = .14)

• Reading functions increased significantly (p = .02)

• Writing functions increased significantly (p = .21)

Reading and Writing Functions

- Pre-Treatment
- Post-Treatment

Figure 2: Pre- and Post-Testing

• GORT-3

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Conclusion

The results support the value of concurrent reading and spelling treatment in an individual with moderate aphasia. Due to differential impairment of written language processing, reading treatment was implemented at the test level, while spelling was treated at the single-word level. The use of personally relevant scripts provided the context for these treatments, and had the added benefit of improving spoken production for conversation.

We suggest that concurrent treatments offer an efficient approach to language intervention that may capitalize on interactive cognitive processes. Concurrent treatments such as this may be tailored to the abilities of a wide range of individuals, including those with differential levels of impairments.

Conclusions and Clinical Implications

- Following treatment, BB’s reading accuracy for text remained high, and reading rate continued to improve without additional practice. In contrast, the response to spelling treatment was item-specific, and continued practice was required for the maintenance of newly learned spellings.

- In the context of chronic stroke, spoken language was impaired in both syntactic length and complexity, and response to treatment directed only toward reading and spelling. The increased content and grammaticality of spoken utterances was noted in both conversation and picture descriptions. This effect was likely related to the fact that oral reading treatment involved the provision of grammatically correct models that BB rehearsed repeatedly, similar to that observed by Cherny (1995).

- We suggest that concurrent treatments offer an efficient approach to language intervention that may capitalize on interactive cognitive processes. Concurrent treatments such as this may be tailored to the abilities of a wide range of individuals, including those with differential levels of impairments.