

Early Reading Skills Builder Curriculum*

Research Summary of Three Iterative Research Protocols

SBIR Fast Track—June 2011 to December 2013

Research Study 1

Phase I: October 2011 to December 2011

Single-case exploratory qualitative research design with two subjects using the GoTalk Express 32 (AAC device)

Summary

Feasibility of the curriculum was determined for two students who quickly learned how to use the AAC device to respond to phonics instruction. Teachers followed the curriculum with fidelity. Iterative research protocols were used to refine the curriculum for the spring 2012 study.

Research Study 2

Phase II: March 2012 to June 2012

Single-case research protocol with three subjects using the GoTalk Express 32

Summary

Three elementary students with moderate intellectual disabilities used the curriculum (with constant time delay and a system of least prompts embedded) in conjunction with the GoTalk Express 32. During a four month intervention and using the five lessons in each level, participants were taught to identify letter/sounds, segment and blend CVC words, identify sight words, read connected text, and answer comprehension questions related to the stories. Participants produced target phonemes and words, and blended phonemes to form words using the GoTalk Express 32. All participants improved across the three target skills (i.e., phoneme identification, blending phonemes to identify words, blending phonemes to identify pictures), indicating a functional relationship between phonics skills and the systematic delivery of the phonics curriculum using an AAC device.

Publication

Ahlgren-Delzell, L., Browder, D. M., & Wood, L. (2014). Effects of systematic instruction and an augmentative communication device on phonics skills acquisition for students with moderate intellectual disabilities who are nonverbal. *Education and Training in Autism and Developmental Disabilities, 49*, 517-532.

Research Study 3

Phase II: Fall 2012 to Spring 2013

Randomized control study with treatment and comparison groups: 32 subjects

Method

The 32 students were randomly assigned to treatment and comparison groups. When more than one eligible student was in a class, at least one was placed in each group. The treatment group received GoTalk Phonics (GTP) instruction using the iPad and GoTalk Now iPad app. The control group received shared stories instruction using the iPad and GoTalk Now. Fidelity of instruction was high.

Treatment = 98.4% (range 88.37%–98.04%)

Control = 96.8% (range 75%–100%).

Curriculum-based assessment

For Phoneme Identification, students selected letters representing spoken phonemes. For Blending with Words, students selected CVC words given a word segmented into phonemes, referred to as a stretched word (/mmaaaannn/ for the word man). For Decoding with Pictures, students selected a picture that represented a word they read. The assessment was administered once/month from November 2012 to June 2013. Data in the tables below reflect Time 1 pre-test before instruction compared to Time 8 post-test administered after the last lesson.

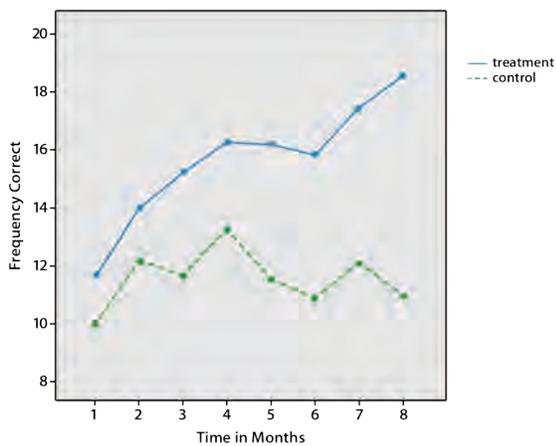
As shown in the graphs, t-test at Time 1 indicated no statistical difference between groups prior to instruction of any of the 3 skills. However, repeated measures ANOVA demonstrated statistically significant interaction effects for the treatment group versus the control group for: Phoneme Identification, Decoding with Pictures, and for the Total Score. The Cohen's d between the two groups at Time 8 were:

Phoneme Identification = .98

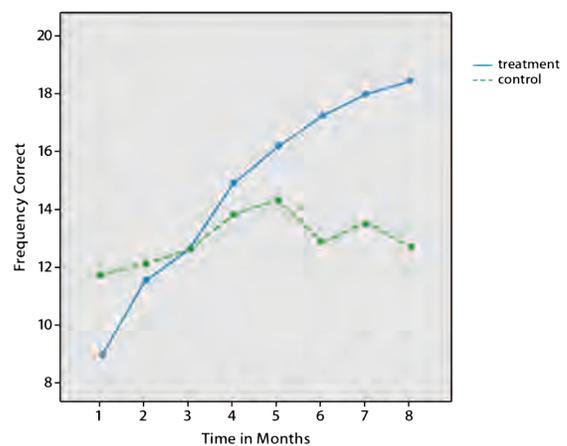
Blending with Words = .35

Decoding with Pictures = .79

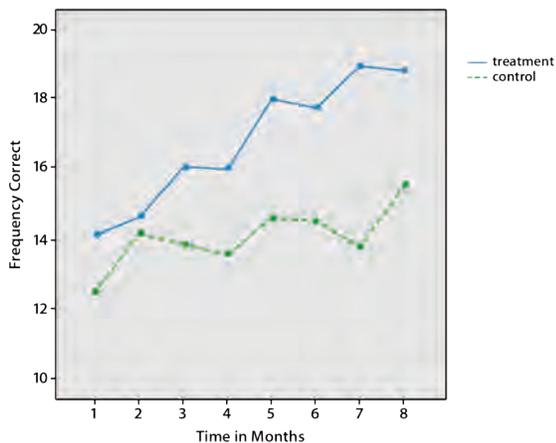
Total score = .79



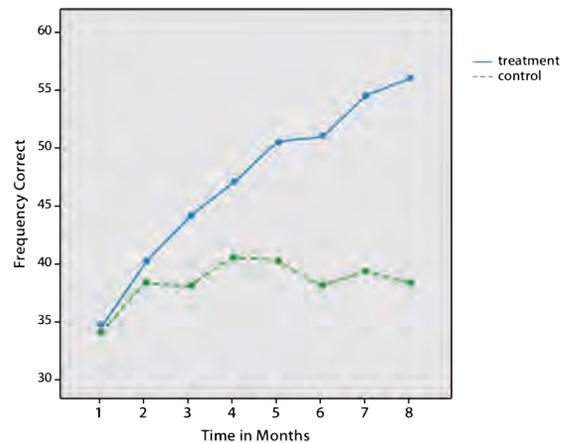
Phoneme Identification



Decoding with Pictures



Blending with Words



Total Score

Discussion

Results indicated that students can learn phonics skills using the GoTalk Phonics* iPad app (with systematic instruction and response templates). Verbal skills also improved for some students. The lack of a statistically significant difference for the Blending with Words skill may reflect learning that occurred in the control group while students participated in shared stories activities.

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*Note that the GoTalk Phonics App and curriculum has been renamed Early Reading Skills Builder curriculum.