

Effects Of Adapted Instruction on the Acquisition of Letter-sound Correspondences and Sight Words by Older Learners with CCN and ASD

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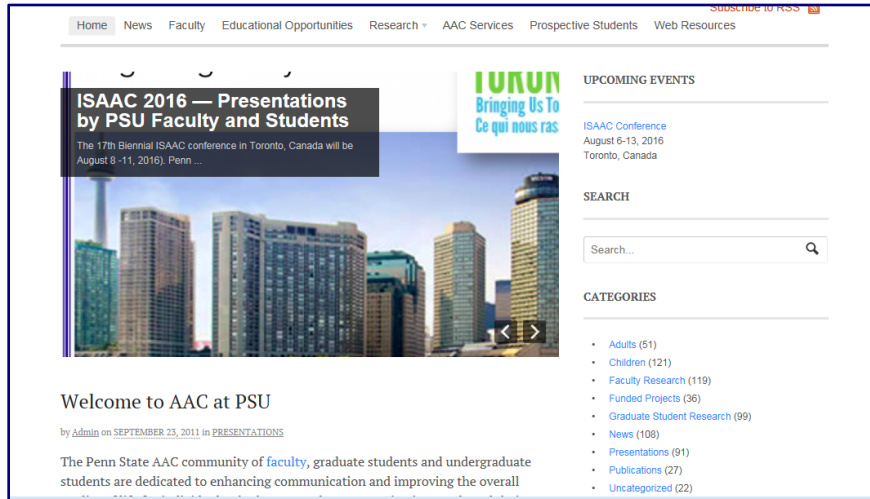
Acknowledgements

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Welcome to AAC at PSU
by Admin on SEPTEMBER 23, 2011 in PRESENTATIONS

The Penn State AAC community of faculty, graduate students and undergraduate students are dedicated to enhancing communication and improving the overall

Reading is often identified as the most critical skill taught in schools

- ▣ Reading and writing skills are especially important for learners with CCN, as these skills provide opportunities to:
 - ▣ Increase AAC options; generative communication
 - ▣ Participate in a variety of communication environments (e.g., online, email, text)
 - ▣ Different educational outcomes
 - ▣ Change expectations and goals

Literacy for individuals with severe disabilities, including those with CCN and ASD:

- People characterized as having severe disabilities, including those with CCN and ASD, have historically been viewed as incapable of developing literacy skills (Morgan, Cuskelly & Moni, 2011).
- Literacy instruction is often denied to them or provided in ways that do not meet their learning needs (Light & McNaughton, 2009; Ruppert, Gaffney & Dymond, 2015; Zascavage & Keefe, 2004) -- contributing to poor outcomes and low expectations

“There is the attitude out there like “What’s the need for education for this child?” I could see someone saying, nobody can understand them, so what difference does it make... I think society has no expectations for these kids. People with severe disabilities [with CCN] are often labeled as not being able to do many things cognitively, even though many people with these disabilities...are able to learn to read. It just has to be presented in different methods.” (Zascavage & Keefe, 2004, p. 231)

Where do we start for these learners?

- When considering starting points for formal reading instruction, researchers have consistently found that explicit instruction, in both phonics and phonemic awareness (Adams, 1990; Carnine et al., 2010; Chall, 1996) and developing automatic and robust sight word vocabularies (Gabig, 2009), play critical roles in becoming a skilled and successful reader.


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STUDY 1: Effect of adapted instruction on the acquisition and maintenance of letter-sound correspondence

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STUDY 2: Effect of adapted instruction on the acquisition, generalization, and maintenance of sight words

Where do we start for these learners?

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What does this look like?
Differences for individuals with CCN?
Considerations for older learners?

Components of effective evidence-based literacy intervention

1. Sufficient time allocated for instruction
2. Appropriate instructional content
3. Appropriate instructional procedures
4. Adaptations to allow active participation of individuals with CCN
5. Positive rapport & motivating instruction

Checklist for effective literacy instruction

- Make instruction meaningful
 - Target important literacy skills
 - Include motivating words & topics
 - Make connections to personal experiences
- Example:
 - LSC & Sight word books include words and pictures that are personally relevant and motivating

Checklist for effective literacy instruction

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<ul style="list-style-type: none"> ❑ Ensure multiple opportunities to practice skills 	<ul style="list-style-type: none"> ▪ Provide focused instruction at least 3-5 times per week ▪ Practice new skills and review previously learned skills in meaningful activities ▪ Provide 10 or more opportunities to practice each skill 	<ul style="list-style-type: none"> ▪ Examples: <ul style="list-style-type: none"> ▪ Increased the number of trials (~20 per session) ▪ Extension activities to move beyond “drill”

Study 1:

Letter-sound correspondences

Overview

- ❑ Letter-sound correspondence knowledge is a strong predictor of beginning reading, yet it is recognized as a challenging skill to acquire (Ehri, 1983; Adams, 1990).
- ❑ Letter-sound knowledge is traditionally taught by presentation of a printed letter and the learner labeling (through oral production) the sound the letter makes (Barker, Saunders, & Brady, 2012)



Aim/Research Question:

- ❑ Question: **What is the effect of adapted instruction on the acquisition and maintenance of 12 letter-sound correspondences by pre-adolescents/adolescents with severe disabilities, autism spectrum disorders, and complex communication needs?**

Participants

- ❑ **3 males with ASD and CCN**
 - ❑ Age range: 9;7 to 18;7
 - ❑ Limited literacy progress in school
 - ❑ All had challenges in producing the sounds to participate in common LSC interventions – e.g., shown a letter, say the sound
 - ❑ Participate in substantially separate classrooms, with 1:1 supports
 - ❑ Range of Letter-sound correspondence knowledge (0-2)
 - ❑ Challenging behaviors: head banging, screaming, avoiding

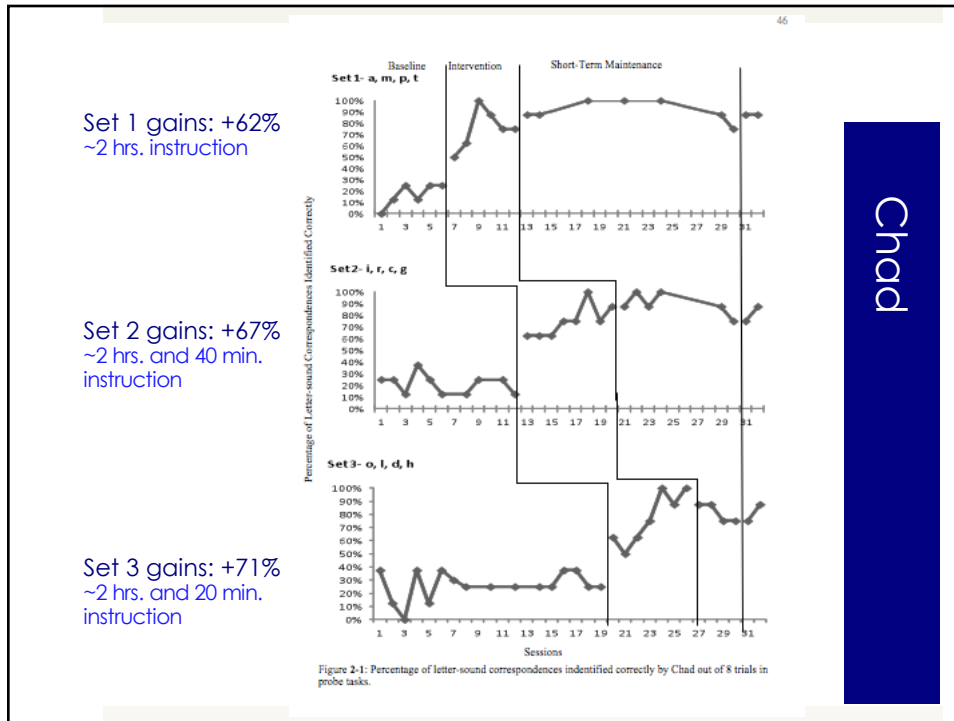
Method/ Procedures:

- ❑ **Single subject multiple probe** design, with replication across letter sound sets to evaluate the effectiveness of an adapted literacy instruction
 - ❑ **Baseline:** LSC assessment probes
 - ❑ Two trials for each of the 4 targeted sight words, which provided an opportunity of 8 correct responses.
 - ❑ Chance level was 25%
 - ❑ **Intervention:** Probes (10 mins.) + Instruction (20 mins.)
 - ❑ Instruction:
 - ❑ 1. Explicit instruction (Guided Practice 2-5 trials; 10 independent trials)
 - ❑ 2. LSC book (5 trials)
 - ❑ 3. LSC folder activity (5 trials)
 - ❑ **Generalization:**
 - ❑ Procedures same as baseline, but with different images (photographs instead of Symbolstix)
 - ❑ **Maintenance:**
 - ❑ Same as baseline
 - ❑ Short-term (~2 & 4 weeks) & Long-term measures (2 months)

NS: Intervention Example (Video)

Results:

- ▣ Each participant demonstrated changes in level and increases in trend from baseline to intervention, for the total percent of correct responses on the LSC task.
- ▣ This change in level and trend occurred across the letter-sound sets where intervention occurred for each participant (e.g., LSC Sets 1, 2, and 3 for Chad and Nate, and LSC Sets 1 and 2 for Collin).
 - ▣ NAP calculations: high effect of the LSC intervention for all participants, across sets

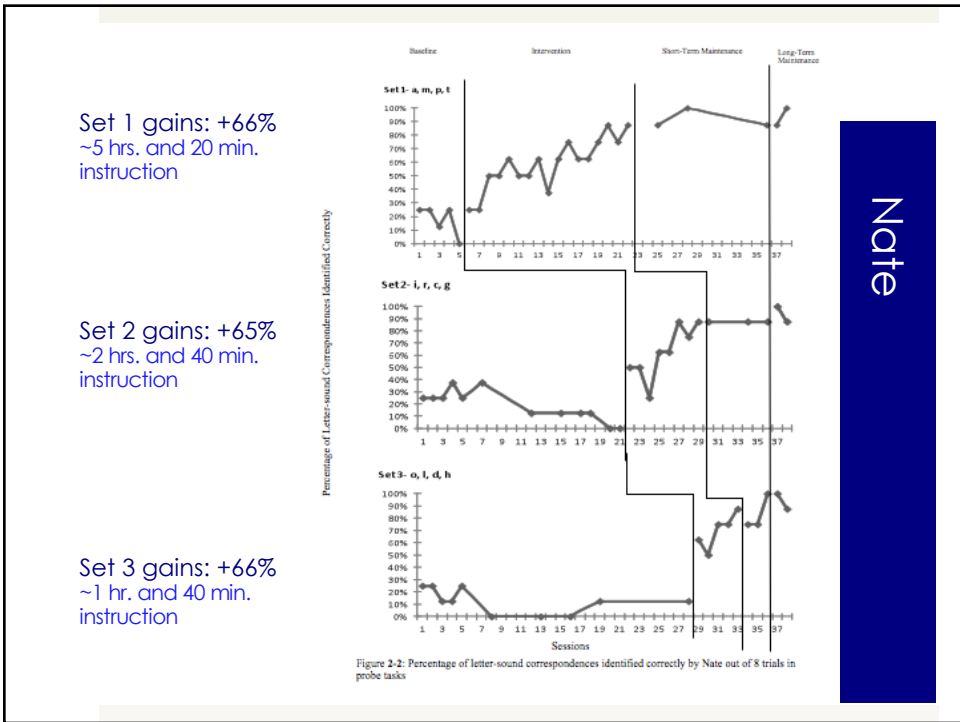


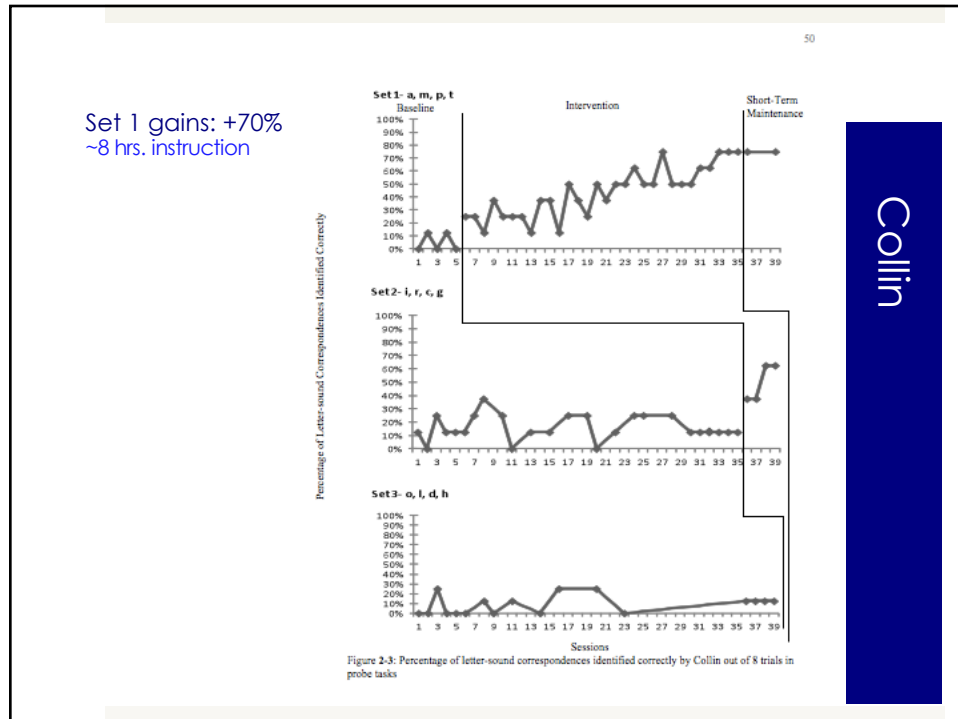
CC- Baseline Sessions 2 & 5 (video)

(January 2015)

CC- Probe before final session (video)

(March 2015)





Discussion

- ▣ With adapted instruction in letter-sound correspondences, all individuals that participated in this study were able to make positive gains from baseline.
- ▣ Two out of three participants met criterion for acquisition of 12 letter-sound correspondences and maintained the skills they learned intervention.
- ▣ Despite intrinsic and extrinsic challenges that older individuals with severe disabilities bring to the literacy context, with very limited instructional time, the participants in this study were able to increase foundational literacy skills (e.g., letter-sound correspondences) with access to adapted instruction.

Study 2:

Sight words

Overview

- ❑ Sight word reading is the process of reading words, automatically at a glance, without analysis of the individual letters and sound correspondences in a given word (Adams, 2011; Carnine et al., 2010).
- ❑ Sight words are important because:
 - ❑ Many words in the English language cannot be decoded
 - ❑ The student may not know all letter-sound correspondences yet
 - ❑ it may provide a mechanism for teaching the communicative intent of print and therefore expanding communication options
- ❑ The predominant form of reading instruction for students with moderate and severe intellectual disabilities is sight word instruction (Browder et al., 2006; Browder & Xin, 1998).
- ❑ Limited research exists in relation to sight word instruction for older individuals with severe disabilities, ASD and CCN.

Aim/Research Question:

- ❑ Given the importance of sight words, research is needed to better understand the effects of adapted instruction in sight word reading for older individuals with severe disabilities, ASD, and CCN.

- ❑ Question: **What is the effect of adapted instruction on the acquisition, maintenance, and generalization of single sight word reading by older learners with severe disabilities, ASD and CCN?**

Participants

- ❑ **4 males with ASD and CCN**
 - ❑ Age range: 9;7 to 18;11
 - ❑ All individuals used forms of AAC to communicate (GoTalk Now, sign approximations, PECS)
 - ❑ Limited literacy progress in school
 - ❑ Participate in substantially separate classrooms, with 1:1 supports
 - ❑ Range of Letter-sound correspondence knowledge (10 – 26)
 - ❑ Dolch Word screening with Pre-Primer list (2 – 15 correct)
 - ❑ PPVT-IV scores ranged: 2.3 to 3.11 age equivalent

Materials- Sight Words:

Personalized word lists, per participant, for sight word instruction

- ▣ 12 target sight words
- ▣ The words had to be:
 - ▣ (a) 4-6 letters in length,
 - ▣ (b) imageable (e.g., "horse" not "the"),
 - ▣ (c) motivating and personally relevant.

	Sight Word Set 1	Sight Word Set 2	Sight Word Set 3
Chad	<ul style="list-style-type: none"> • mario • movie • juice • cookie 	<ul style="list-style-type: none"> • swing • snack • ipad • jump 	<ul style="list-style-type: none"> • ball • book • game • luigi
Nate	<ul style="list-style-type: none"> • dog • drum • cat • ipad 	<ul style="list-style-type: none"> • swing • snack • music • book 	<ul style="list-style-type: none"> • walk • water • piano • type
Jason	<ul style="list-style-type: none"> • field • fence • hay • coop 	<ul style="list-style-type: none"> • pail • plow • rake • calf 	<ul style="list-style-type: none"> • gate • gym • atv • radio
Cory	<ul style="list-style-type: none"> • park • pony • kite • bagel 	<ul style="list-style-type: none"> • snake • slide • farm • type 	<ul style="list-style-type: none"> • barn • bird • candy • train

Method/ Procedures:

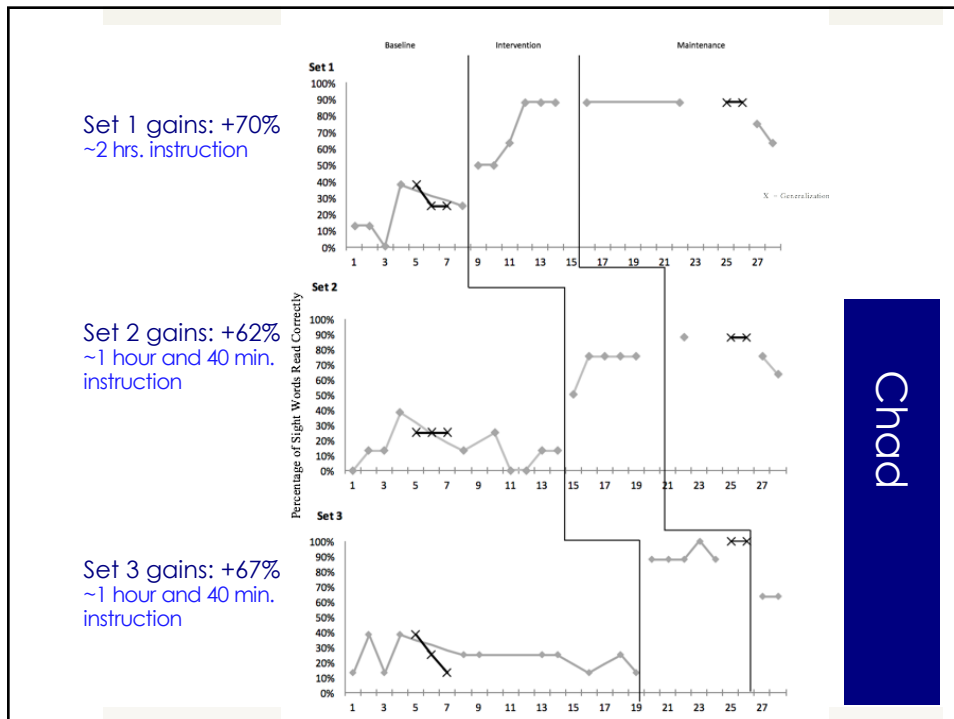
- ▣ **Single subject multiple probe** design, with replication across sight word sets to evaluate the effectiveness of an adapted literacy instruction
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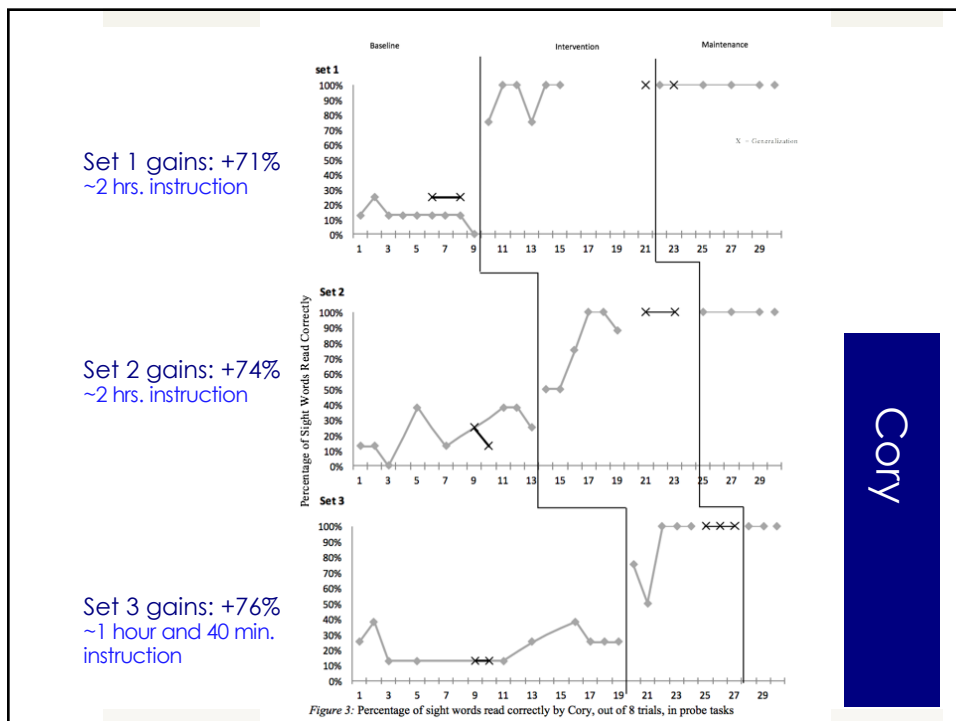
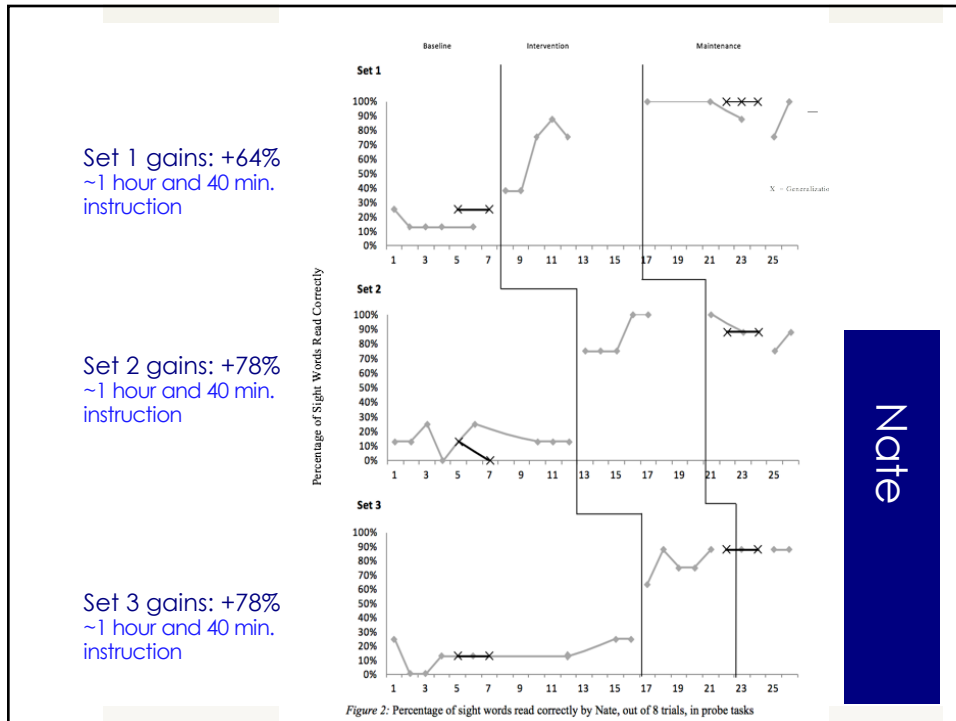
JE: Intervention Example (video)

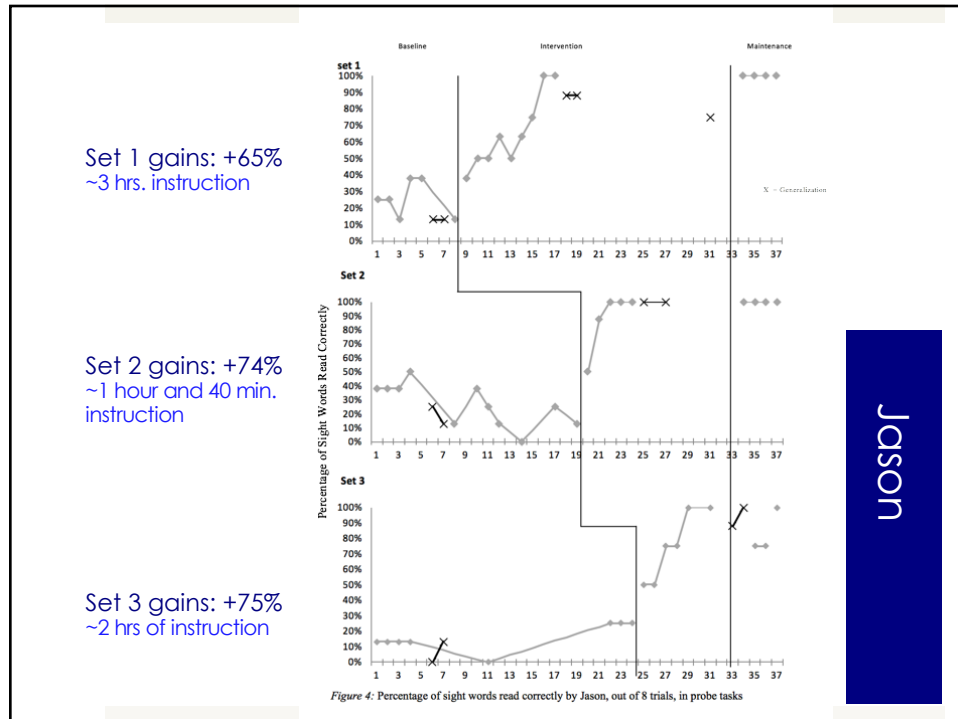
CW: Intervention Example (video)

Results:

- Results supported the hypothesis that adapted instruction would result in improved sight word learning, despite a past of limited literacy success.
- The intervention resulted in strong effects (greater than .85) (Parker & Vannest, 2009) for all participants, with 98% to 100% non-overlapping data
- Across sets and participants intervention time ranged: three to nine sessions to meet criterion, or 1 hour to 3 hours of instruction to reach criterion -- translates to approximately 3 to 6 hours of instruction to acquire the 12 sight words.







Discussion

- ▣ All participants improved sight word learning, despite a past of limited literacy success.
- ▣ In addition, the intervention resulted in generalization of sight word reading to a novel representation (i.e., Symbolstix to photographs).
- ▣ The participants' teachers also viewed the intervention as practical, appropriate, and effective.

Limitations (Study 1 & 2)

- Small number of participants
- Packaged interventions consisting of explicit instruction and extension activities.
- The interventions implemented in this study can only be viewed as the foundational skills for early literacy.
- The interventions did not address other areas that have been found to improve word recognition (e.g., sound blending, phoneme segmentation activities)

- The findings of Study 1 and Study 2 suggest that older learners with severe disabilities, ASD, and CCN who have previously struggled to make progress with early literacy skills (including letter-sound correspondences and sight words) can indeed make progress.
 - All learners made progress from their individual baseline levels of performance

The major benefit of the interventions was seeing instruction that actually worked. This gave me hope and ideas....I am seeing a dramatic increase of on task behavior during instruction...and LEARNING!

It is critical that literacy expectations change for individuals with severe disabilities and CCN and that these individuals are provided with quality adapted instruction to maximize their participation and communication.

Conclusion:

- All individuals have the fundamental right to become successful readers to support maximization of their educational outcomes, future occupational opportunities, and individual leisure pursuits (Machalicek et al. 2010).

- Research must continue in the area of literacy instruction so all individuals have the opportunity to develop functional literacy skills in order to participate in an increasingly text-based society.

QUESTIONS?

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