



# Evaluating the Outcomes of Brief Experimental Analyses at Two Points in Time



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## Abstract & Introduction

Reading is a fundamental skill for success in school. Thus, providing effective intervention to children underperforming in a standard classroom is critical. Our study explores differences in the outcomes of brief experimental analyses (BEAs) when administered at two different times during the school year to see how children's instructional needs may change. We found that BEA outcomes differed for most children in our sample when administered at two different times, perhaps as a function of changes in students' academic skills. Our results may shed light on how often instruction needs to change in schools to meet the changing academic needs of students.

Literacy skills are essential to success in education and later in life. However, many children struggle to develop into strong readers, and as such, reading difficulties are the number one reason children are referred to school psychologists (Bramlett, Murphy, Johnson Wallingsford, & Hall, 2002).

Fortunately, effective early intervention can alleviate the unfortunate effects of poor reading skills. Students early school years can be a time of rapid development for literacy skills. A nationwide push for early intervention has led to intensive research to improve childhood literacy.

Brief experimental analysis (BEA) is a relatively new tool that applies single-case design logic to "test drive" different interventions (Riley-Tilman & Burns, 2009). Traditionally, the most effective intervention is implemented over extended period and gains a Researchers have used BEA to identify effective interventions for students struggling with reading (e.g., Burns & Wagner, 2008).

To date, no research has evaluated differences in the outcomes of BEAs when administered to the same children at different times in the school year.

Bramlett, R. K., Murphy, J. J., Johnson, J., Wallingsford, L., & Hall, J. D. (2002). Contemporary practices in school psychology: A national survey of roles and referral problems. *Psychology in the Schools, 39*, 327-335.

Riley-Tilman, T. C., & Burns, M. K. (2009). *Evaluating educational interventions: single-case design for measuring response to educational interventions*. New York: Guilford.

Burns, M. K., & Wagner, D. (2008). Determining an effective intervention within a brief experimental analysis for reading: A meta-analytic review. *School Psychology Review, 37*(1), 126-136.

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## Method

**Participants:** 10 4<sup>th</sup> and 5<sup>th</sup> grade students from a Wisconsin public school.

**Procedure:** Interventionists conducted BEAs at the beginning of the school year and again in early spring during an after-school program affiliated with UWEC's Academic Intervention Clinic. Extended analyses took place twice per week for seven weeks after the conclusion of the BEA. For BEA and Extended Analysis, interventionists used FAST probes, which are standardized for difficulty across forms.

**BEA:** Interventionists tested four interventions within each student in a randomized order. Based on initial BEA results, the two interventions that led to the greatest increases over baseline were compared during two successive replications. After, the winning intervention was implemented during the extended analysis.

**Duet:** Interventionist and student alternate words while reading entire passage. Then, order is flipped so student reads first word, interventionist reads second, and so on. After, student reads entire passage aloud.

**Sentence Preview:** The interventionist and student read passage together twice, taking turns reading the same sentence (interventionist first, student second). Then, student reads the same passage aloud again.

**Passage Preview:** The student follows along as interventionist reads passage aloud. Then, the student reads the passage aloud and receives corrective feedback as-needed.

**Choice:** Student chooses from among the above interventions based on preference.

## Discussion

Overall, the results show BEA indicated different interventions as most effective between time 1 and time 2 for 7 of the 10 participants. This suggests that BEAs may need to be conducted more than once to provide students with effective intervention.

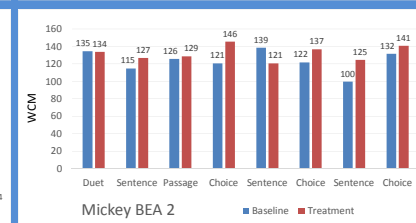
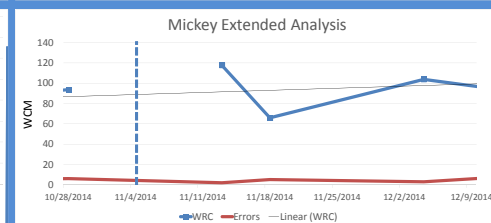
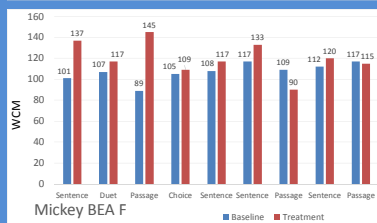
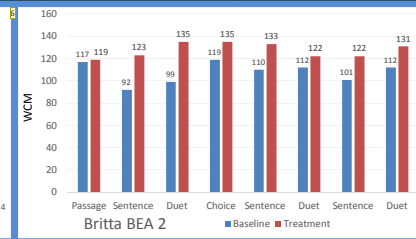
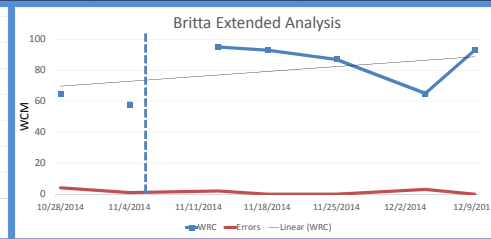
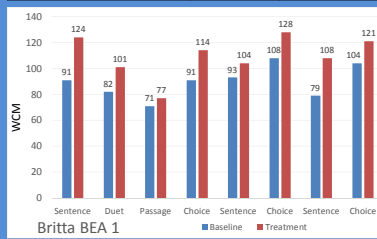
Within all participants, there was at least 1 common intervention that was either winner or runner-up in both BEA 1 and BEA 2. In some cases, the BEA 1 runner-up became the BEA 2 winner and vice-versa.

Some possible limitations to this project are a small sample size, few data points for extended analysis, and the potential variability in students' home learning environments.

Future research should examine whether variability, baseline level, or overall gains can predict whether students will experience that same outcomes on BEAs administered at two points in time using a larger sample.

## Results

Student	Grade	BEA 1 Winner	BEA 1 Runner-up	BEA 2 Winner	BEA 2 Runner-up	Matching Winners?
Aida	4	Choice	Passage	Sentence	Choice	No
Alexis	4	Duet	Passage	Passage	Duet	No
Avery	4	Passage	Choice	Sentence	Choice	No
Connie	4	Duet	Sentence	Duet	Sentence	Yes
Eduardo	4	Sentence	Duet	Sentence	Duet	Yes
Mack	4	Choice	Duet	Duet	Choice	No
Mary	4	Choice	Passage	Sentence	Passage	No
Britta	5	Sentence	Choice	Sentence	Duet	Yes
Dan	5	Duet	Choice	Choice	Passage	No
Mickey	5	Sentence	Passage	Choice	Sentence	No



## Slide 1

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- 2 describe that this took place in the context of the AIC in more detail. The extended analysis involved students receiveing interventions 2 times per week for 7 weeks. explain what the general bea procedure is and that leading interventions are those in which students' scores increased the most relative to baseline

Melissa C. Chaffin, 4/8/2015

- 6 if you send me the excel files, i can fix the graphs to separate baseline from extended analysis and add phase lines. I could also show you this if you want to come by sometime.

Melissa C. Chaffin, 4/8/2015