Brief Experimental Analysis:
Repeated Reading In Dyads

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Presentation Objectives

- Overview of research related to fluency
- Curriculum Based Measurement
- Repeated Reading
- Partner Reading
- Brief Experimental Design
- Review of the study
- Outcomes/Conclusions/limitations
- Recommendations
Treatment Manipulation

- Repeated Reading (RR) of an entire passage of text versus repeated reading of alternating sentences of an entire passage
Research Questions

- Will repeated reading of passages in dyads, either page-by-page (pbp) or sentence-by-sentence (sbs), have an impact on non-responding students’ oral reading fluency outcomes during Spring trimester?

- What is the impact of each intervention on students’ word reading errors?
Brief Experimental Analysis (BEA)

- BEA was used to evaluate two repeated reading interventions to determine which would be most effective at increasing reading fluency and comprehension for 6 non-responders

  - Repeated Reading/Partner Reading/Page-by-Page
  - Repeated Reading/Partner Reading/Sentence-by-Sentence
Alternating Treatment Variation

- The study incorporated an alternating treatment variant of BEA
  - This approach emphasizes replicating experimental conditions
  - Assess the functional relation each set of experimental procedures has on the behavior of interest
    - Use CBM/CBA to determine functionally relevant relations

- Primary strength of BEA is that they can be used to demonstrate a functional relation in a limited time frame

- The ATD design was used to compare the effectiveness of the two RR instructional packages
BEA was accomplished by administering multiple interventions in a preset order and using curriculum-based measurements to evaluate each intervention (Chafouleas et al., 2003).

BEA provides an assessment procedure directly related to interventions that can be used in the classroom and allows for an intervention to be chosen using empirically-based data.

BEA can be effective in identifying instructional strategies associated with enhanced academic responding (McComas et al, 1996).

BEA may provide an effective system for simplifying or choosing among competing interventions (Martens et al, 1999).
• VanAuken et al (2002) provided evidence for the treatment utility of using BEA to select effective and efficient oral reading instructional interventions

• ATD can be used to understand if BEA can discriminate effective instructional packages (Tawney & Gast, 1984)

• Interventions do not have to be reversed
  • A definite plus since we cannot reverse skill acquisition

• Sequencing problems are controlled by rapidly alternating interventions

• Several interventions can be compared at the same time
Participants

- Participants were 6 elementary school students
  - Two boys in the fourth grade
  - Two boys & two girls in the second grade

- General Education Program

- Students were selected at-risk based ORF and teacher input

- Students participated in a RR v. CR Tier 2 intervention study at their school site

- Students did not respond to the Tier 2 intervention targeting fluency/comprehension deficits
Setting

- One elementary school in the Inland Empire
- The modified Tier-2 intervention was conducted in the central pod of each school building
- Students sat next to each other; the tutor sat behind the students, observed & provided feedback
Materials

- Reading passages were selected from Reading Mastery Textbooks
- Instructional level passages were selected prior to the intervention using ORF scores as markers
- Analysis of passages revealed 50 – 60% unique words per page
Defining the Intervention Components

- RR/Partner Reading/PbP
  - Student 1 reads an entire passage while Student 2 follows along, listens, and provides feedback. Student 2 reads the same passage while the Student 1 follows along, listens, and provides feedback. Each student reads twice and is exposed to text four times.

- RR/Partner Reading/SbS
  - The variation is that each student simultaneously read each passage sentence by sentence. Student 1 reads first sentence, student 2 reads second sentence and so on. Each student is exposed to each passage 4 times.
Dependent Variable

- CBM-ORF
  - Reliable, valid, and sensitive GOM of reading accuracy and fluency (Shinn, 1998)

- Correct Words Read per minute (CWRM) was used to measure oral reading fluency
Procedures

- The analysis was conducted over a 3-week period, with one experimental condition conducted during each session.

- Students were taught both interventions:
  - Modeling, practice, and corrective feedback
  - i.e., Students were placed into their respective dyad and practiced reading approach with the partner, the tutor observed and provided corrective feedback

- Baseline levels of fluency (CBM & MM) were collected prior to the intervention phase
Procedures

- At the beginning of each session students were instructed to read either page-by-page or sentence-by-sentence.
- Intervention phase changes were randomly selected for each dyad prior to the intervention.
- 20 min sessions for each dyad four times per week.
- CBM, MM & Comprehension were monitored after each session of intervention.
Tutor’s Role

- Provide corrective feedback
- Provide definitions of difficult vocabulary words
- Provide reinforcement
- Monitor students level of engagement
- Monitor integrity of the intervention
- Monitor text difficulty
- Assess ORF and comprehension of text (after session)
Treatment Integrity & Interscorer Agreement

- **Treatment Integrity**
  - Intervention logs with page numbers, accuracy checks were completed daily (100% of sessions)
  - Integrity of intervention was observed by non-tutor
  - 25% of the sessions were observed with 96% average accuracy.

- **Interscorer Agreement** (Shinn & Shinn, 2002)
  - Agreements (Agreements + Disagreements) * 100
  - 98% ISA R-CBM
  - 96% ISA MM
Kaitlynn
Kaitlynn’s Errors

![Graph showing errors per minute over sessions with different lines representing different conditions: PBP, SBS, and Baseline.](image-url)
Eduardo

The graph shows data across different sessions. The x-axis represents the sessions, ranging from 1 to 11, while the y-axis represents WRGM, with values ranging from 0 to 80. The data points are color-coded: blue diamonds for PBP and red squares for SBS. Two linear trend lines are visible, one in light blue labeled "Linear (PBP)" and one in red labeled "Linear (SBS)."
Eduardo’s Errors

Line graph showing the number of errors per minute over sessions for PBP, SBS, and Baseline. The errors decrease in all categories as sessions progress.
Joshua’s Errors

![Graph showing Joshua's errors over sessions. The graph includes lines for PBP, SBS, and Baseline, with data points for each session.](image)
Jacey’s Errors
Jonathon
Jonathon’s Errors

![Graph showing errors over sessions with different lines representing PBP, SBS, Baseline, Linear (Baseline), Linear (SBS), and Linear (PBP).]
Correct Words/Min

Session

Justin
Justin’s Errors
Conclusions

- BEA can provide useful information to inform intervention for particular students

- One should not assume that an ‘evidenced based’ intervention is appropriate for all cases
  - There is no one size fits all approach
- Reinforcing aspects of the dyad intervention
  - Students reinforced skills via peer tutoring
  - Students became more confident reading aloud
On-Task Behavior

- The SbS approach facilitated on-task behavior more than PbP and no treatment
  - This is due to reading alternating sentences
- Momentary time sampling indicated that on average students were on-task during most of the intervals
- Informal observations indicated students were on-task during SBS than PBP approach
Limitations

- Carry over effects
  - Once skill is acquired you do not expect it to revert to lower levels

- More appropriate to assess smaller components of the intervention and the impact of introducing reinforcement
Next Steps

- Use Brief Experimental Analysis to assess the relative impact of RR PbP and SbS interventions with students who are lacking fluency skills and who are rated as being inattentive or hyperactive.