BEAs and ELLs: Empirical Data and Teacher Perceptions

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English Language Learners (ELLs)

- Students whose first languages are not English and who have not yet achieved proficiency in English
- Fastest growing subgroup
  - From 3.5 million to 5.3 million between 1998 and 2009 (National Clearinghouse for English Language Acquisition, 2011)
- Diverse population
Concerns with ELL Students

- Much lower academic achievement than native English speakers (NCES, 2011)
- Among the highest grade retention and dropout rates (Duran, 2008)
- Disproportionality in special education programs
Instructional Challenges

• Instructional needs of ELL students vary widely (Artiles, Rueda, Salazar, & Higareda, 2005)

• Teachers report uncertainty in how to intervene for ELLs who are not adequately responding to teaching (Heubert & Hauser, 1999)

• Limited time and resources
Brief Experimental Analysis (BEA)
What is BEA?

• Briefly “test drive” two or more interventions
• Assess the immediate impact of each intervention
• Most effective intervention is implemented over an extended period while monitoring progress
• Increases probability of selecting an effective intervention
  – Matched to student’s individual needs
Selecting Interventions

- Evidence-based
- Logically selected using a conceptual framework
- Five hypotheses for skill deficits
  1. Insufficient motivation
  2. Insufficient practice
  3. Insufficient feedback and assistance
  4. Insufficient modeling
  5. Materials are too difficult

(Daly, Witt, Martens & Dool, 1997)
Dynamic Recursive Model of BEA

Intervention Selection

Results and Analysis

Brief Experimental Analysis

(Riley-Tillman & Burns, 2011)
BEA Procedures

• Assessment
  – Performance needs to be observable and measureable
  – Equivalent assessment measures
  – Curriculum-Based Measurement (CBM)
    • Multiple, equivalent measures
    • Sensitive, quick and easy
    • Reliable over time

(Marston, 1989)
BEA Procedures

• Single Case Design
  – Participant serves as his or her own control
  – Support based on replication of effects
    • Usually two data points per condition
    • Lower standard than typical SCD

• Collect baseline data
  – Selected intervention should lead to a large effect
  – Return to baseline increases confidence

• Implement intervention for an extended period continuing to collect data
Impact of BEA

- Recent meta-analysis found overall large effects for BEA of reading fluency interventions
  - 82% non-overlapping data
  - Average increase in WRCM 30 (Burns & Wagner 2008)
- BEA with ELL students
  - Identified effective interventions for five students
  - Specific intervention unique to each student
  (Malloy, Gilbertson & Maxfield, 2007)
Teacher judgment in problem analysis

- Teachers judgments about student performance inform problem analysis
- Teacher judgment about overall student reading achievement is often an overestimation, as compared to quantitative assessment results
- Little is known about the accuracy of teacher judgment in generating probable hypotheses about individuals’ specific academic intervention needs

(Begeny, Krouse, Brown, & Mann, 2011)
Research question

• How do teachers’ judgments about individual student’s instructional needs in reading compare to Brief Experimental Analysis results?
Participants

• School demographic data
  – 99% ELL
  – 99% Receive free or reduced price lunches
• Yusuf- 6th grade boy, ELL & SLD
• Ibraahin- 6th grade boy, ELL
• Bashiir- 7th grade boy, ELL
• Teachers referred these students due to concerns with reading fluency, accuracy, comprehension
• None had passed state reading test
Measures

• Curriculum-Based Measures of Oral Reading Fluency (ORF; Therrien, Jones, & Wickstrom, 2006)
  – 9 probes administered in one session to establish ORF baseline
  – 1 probe administered as pretest and posttest at each intervention session
Measures

• Comprehension questions (Therrien et al., 2006)
  – Students answered 8 comprehension questions after reading each passage
Interventions

- Repeated Reading
  - Interventionist modeled reading first half of passage
  - Student read first half of passage 3 times
  - Errors were corrected after reading using standard procedure
  - Student re-read phrase in which error occurred
  - Steps repeated for second half of passage
Interventions

• Question Generation
  – Interventionist read 5 questions to student and student repeats
  – Student read passage to him/herself
  – Interventionist asked 5 questions
  – Standard error correction provided
Interventions

• Incremental Rehearsal (IR)
  – Unknown words identified during baseline condition
  – Pre-taught unknown words using IR prior to reading intervention passage
  – Standard error correction provided Student read 4 alternate forms of intervention words
  – Standard error correction provided
Method

• Teacher interview
  – Researchers described each BEA condition, and the BEA procedures
  – Asked each teacher to predict which intervention would be best for her student
Procedures

• BEAs occurred over 2 weeks
• Fluency and comprehension baseline established with all probes
• Intervention order randomized for each student
• Different probes used for each intervention
Procedures

• Unique probes used for each intervention session
• The same probe was used as a pretest and posttest for each intervention session to measure intervention effects
• All sessions were recorded
  – 20% checked for fidelity of implementation
Yusuuf

- INSERT ORF GRAPH
Comprehension Results: Yusuf

• INSERT COMP GRAPH
Teacher results: Yusuf

- Which intervention do you think would best support his reading fluency, and why?
- “You know I used this story accuracy—it was also something I worked on with him and had him **reread** passages. I think that it has been the biggest help with his fluency.”
- BEA results showed incremental rehearsal produced the best ORF.
Teacher results: Yusuf

• Which do you think would best support his reading comprehension?
• “Probably the last with the main elements of the story—trying to answer the concrete literal comprehension questions.”
• BEA results showed question generation and repeated reading produced the best reading comprehension.
ORF Results: Ibrahiin

- INSERT ORF GRAPH
Comprehension Results: Ibrahiin

- INSERT COMP GRAPH
Teacher results: Ibrahiin

• Which intervention do you think would best support his reading fluency, and why?
• “All strategies would be good for him, but if I had to pick one, I’d say the vocabulary and background information one…the vocabulary and background knowledge is a great strategy for ELL – they don’t necessarily have the background knowledge.”
• BEA results showed repeated reading produced the best ORF.
Teacher results: Ibrahiin

• Which do you think would best support his reading comprehension?

• “Again, I think the vocabulary and background knowledge would be best…The first two are very isolated and the last two techniques are based in the whole content. It’s not just isolating a single strategy.”

• BEA results showed repeated reading produced the best reading comprehension.
ORF Results: Bashir

- INSERT ORF GRAPH
Comprehension Results: Bashir

- INSERT COMP GRAPH
Teacher results: Bashir

• Which intervention do you think would best support his reading fluency, and why?
• “Repeated reading and vocabulary, because, practice, you get better. And also if you’re hearing it auditorially and reading it seems more...text style. And vocabulary, that helps them understand background. Understanding the story better, it also helps you with your fluency because it makes sense.”
• BEA results showed question generation produced the best ORF.
Teacher results: Bashir

• Which do you think would best support his reading comprehension?

• “The vocabulary and focusing on the main idea of the story...Because if you don’t know what the words mean, you’re not going to understand...if you already knew what you were looking for in a story, looking at the questions, you know what to look for...”

• BEA results showed question generation produced the best reading comprehension. Comprehension in the vocabulary condition was 63% accuracy.
Discussion

- BEA results showed idiosyncratic results across students
- Teacher judgments did not align with BEA results
Thank you!

Questions? Comments?

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