

Executive Summary Report 2004-2008 Scale Up

Expected Outcomes

- Examined the following research questions:
 - 1) Do the effects of the Proactive and/or Responsive interventions generalize when implemented on a wide scale and in multiple contexts? If yes, do these interventions continue to be effective with subsequent cohorts of children when intervention teachers receive reduced support from the researchers?
 - a. Are there significant differences between the two interventions in levels of implementation and in student outcomes under these conditions during the initial year of implementation, and over the next three years?
 - b. Are achievement gains for each intervention maintained over time as children advance into higher grades?
 - 2) How is the quality of implementation and student outcomes for the Proactive and Responsive approaches impacted when intervention teachers are provided with different models of ongoing professional development?
 - a. Are there significant differences in implementation and student outcomes for the interventions when intervention teachers are provided with a) on-site expert coaching, b) technology-based expert coaching, or, c) coaching provided only at the request of the teacher?
 - b. Are outcomes for the two intervention approaches differentially affected by the provision of support under these three conditions?
 - 3) Are there significant differences in the levels of fidelity of implementation of *Responsive Reading* and *Proactive Reading* that are necessary to achieve statistically significantly positive student outcomes?
 - 4) Which within-school and within-teacher variables significantly affect the integrity of implementation and student outcomes in implementations of the two interventions in which teachers receive differing types of ongoing professional development?
 - 5) Which variables affect decisions regarding sustained implementation of the interventions?

2004-2005

Project Goals

- Examined the levels of support needed to ensure that teachers in Proactive and Responsive achieve high levels of implementation fidelity.
- Specifically, we examined the impact of 3 different coaching models on how well teachers were able to implement each intervention, and the subsequent outcomes achieved by children receiving these interventions.
- We also investigated the level of fidelity of implementation of the two interventions achieved with each coaching model and subsequent student outcomes.
- We also examined particular factors within differing school contexts that may influence the effective and sustained implementation of the two approaches to intervention and how these factors interact with coaching models.
- Student population: 336 first-grade students who were highly diverse in economic status and ethnicity. In the Responsive study (n=114), there were 53 students in the experimental condition and 61 students in the contrast condition. In the Proactive Study (n=222), there were 106 students in the experimental condition and 116 students in the contrast condition.
- Teacher population: There were a total of 38 intervention (20 Proactive, 11 Responsive) teachers in 31 schools

Actual Outcomes

- Students in the experimental group who received either Proactive or Responsive intervention statistically significantly outperformed contrast students on all measures except segmenting words and sight word efficiency with small to moderately medium Cohen's d effect sizes ranging from 0.21 to 0.42 (mean = 0.30; $SD = 0.07$; $SE = 0.03$).
- Multilevel modeling that includes controlling for classroom effects found a significant intervention effect on CTOPP blending words, CTOPP blending non-words, IRT Word List, TOWRE phonemic decoding efficiency, WJ III letter word identification, WJ III word attack and WJ III spelling ($F_s(1, 287) = 4.75$ to 14.92 , $p < 0.05$).
- Hierarchical linear modeling also found statistically significant effects favoring the On-Site Coaching Condition in CTOPP blending non-words and the IRT Word List ($F_s(1, 287) = 3.18$ to 3.17 , $p < 0.05$).
- The experimental group demonstrated a statistically significant more rapid growth rate than the comparison group in oral reading fluency.

2005-2006

Project Goals

- To conduct the second year of a longitudinal study, examining the lifecycle of scaling up effective first grade supplemental interventions as approved by the agency.
- Examined the levels of support needed to ensure that teachers in Proactive and Responsive achieve high levels of implementation fidelity.
- Specifically, we examined the impact of 3 different coaching models on how well teachers were able to implement each intervention and the subsequent outcomes achieved by children receiving these interventions.
- We also investigated the level of fidelity of implementation of the two interventions achieved with each coaching model and subsequent student outcomes.
- We also examined particular factors within differing school contexts that may influence the effective and sustained implementation of the two approaches to intervention and how these factors interact with coaching models.
- Student population: 457 first-grade students who were highly diverse in economic status and ethnicity.

- Teacher population: There were a total of 39 intervention (16 Proactive, 33 Responsive) teachers in 40 schools.

Actual Outcomes

- Students in the experimental group who received either Proactive or Responsive intervention statistically significantly outperformed contrast students on all measures except phoneme segmentation fluency and segmenting words with small to moderate Cohen's *d* effect sizes ranging from 0.20 to 0.50 (mean = 0.36; *SD* = 0.09; *SE* = 0.03).

Other Findings

- These results suggest that the effects of both Proactive and Responsive interventions have indeed generalized to new contexts beyond the original research (i.e. Mathes et al. 2005).

2006-2007

Project Goals

- To conduct the third year of a longitudinal study, examining the lifecycle of scaling up effective first grade supplemental interventions as approved by the agency.
- Examined the levels of support needed to ensure that teachers in Proactive and Responsive achieve high levels of implementation fidelity.
- Specifically, we examined the impact of 3 different coaching models on how well teachers were able to implement each intervention and the subsequent outcomes achieved by children receiving these interventions.
- We also investigated the level of fidelity of implementation of the two interventions achieved with each coaching model and subsequent student outcomes.
- We also examined particular factors within differing school contexts that may influence the effective and sustained implementation of the two approaches to intervention and how these factors interact with coaching models.
- Teacher population: There were a total of 56 intervention (24 Proactive, 32 Responsive) teachers in 42 schools.
- Student population: 270 first-grade students who were highly diverse in economic status and ethnicity.

Actual Outcomes

- Actual data analyses were not available yet in time for the deadline of the project status chart report.
- The following data analyses report findings of the combined 2004-2005 and 2005-2006 cohorts.
 - 1) Hierarchical linear modeling, controlling for pre-existing student characteristics and school effects, found the following information:
 - a. The combined two cohorts of the Proactive treatment group statistically significantly outperformed the contrast group in all measures of CTOPP blending words and nonwords, CTOPP segmenting words, IRT Word List, Elision, and TOWRE phonemic decoding efficiency and sight word efficiency. The combined two cohorts of the Responsive treatment group statistically significantly outperformed the contrast group in measures of CTOPP blending nonwords, Elision, TOWRE phonemic decoding efficiency and sight word efficiency, and WJIII spelling, letter word identification, and passage comprehension. Combining the two experimental groups and then comparing their growth scores to the contrast group found statistically significant differences in all given measures.
 - 2) When comparing students' difference scores by coaching condition, no statistically significant differences were found on any measures.

Other Findings

- Accounting for the nested structure of our data over the past three years, results suggest that the effects of both Proactive and Responsive interventions have indeed generalized to new contexts beyond the original research (i.e. Mathes et al. 2005) and are replicable from year to year.
- Both interventions are generalizing to new contexts and are replicable from year to year.
- However, it is also clear that fidelity to intervention is much more varied than was observed in our Houston study, and that a primary factor in how effective each intervention actually is depends on how consistently that intervention is delivered across the year.
- Likewise we are now able to determine if one model of staff development is superior to another. Based on our most recent analysis, there appears to be little difference among our 3 models.
- Of course, in looking at our coaching models, it is important to remember that in any given year of this research, the majority of teachers are implementing for the first time.
- We have found that, while this life cycle has occurred in limited instances, in the majority of cases the process is largely one of repeated new implementation. This occurs for 2 reasons; first, there is constant personnel turn over within buildings. It is rare for the same teacher to provide intervention across multiple years. The second reason is that there is significant change in leadership both at the district and the building level. When leadership changes occur, it is common for previous curricular and instructional choices to be replaced. Of the 45 teachers we began this research with in the 04-05 academic year, 58% of those did not return to the study in the 05-06 year, and 83% did not return in the 06-07 academic year. While these realities are discouraging, the other side of our story is that in a few places, we have observed the lifecycle through to completion. In these instances, the interventions have been widely disseminated within districts, expanding even beyond the bounds of the research. The common factor identified through qualitative analysis of contextual factors appears to boil down to district leadership. When the leadership within a district supports the intervention, and does not leave, the intervention thrives. In districts where leadership is less supportive or changes, the interventions are not continued across time.

2007-2008 (Study 1 – SMU Site in Dallas)

Project Goals

- Focused on technology based coaching and issues of implementation fidelity
- (More specifically) Focused on varying levels of coaching support using *SRA's Early Interventions in Reading* (Mathes & Torgesen, 2005)
- Student Population: 175 first graders from 22 schools that were identified by their classroom teachers as being in need of reading intervention; 108 males; majority 60-100% economically disadvantaged;
- Teacher Population: Total of 27 teachers; (18 virtual coach (110 students)-9 typical support (65 students); Years as a professional educator (mean of approximately 25 years for both groups)

Expected Outcomes

- The project wanted to examine the following research questions:
 - 1) How is the quality of implementation and student outcomes for the PEIR impacted when intervention teachers are provided with different models of ongoing professional development?
 - a) Are there significant differences in implementation and student outcomes for the intervention when intervention teachers are provided with technology-based expert coaching, or no supplemental coaching, a condition representing typical practice in professional development?
 - b) Does prior experience teaching the intervention result in differences in implementation and student outcomes?
 - 2) Are there significant differences in the levels of fidelity of implementation *PEIR* that are necessary to achieve statistically significantly and practically positive student outcomes?
 - 3) Are the specific aspects of fidelity of implementation and usage of time that best predict student outcomes?

Actual Outcomes

- *PEIR* promoted significant growth among participants from pretest to post-test with Cohen's *d* effect sizes ranging from 0.80 in Phonemic Decoding to 3.43 in Letter Word Identification (mean = 2.0, *SD* = 0.81, *SE* = 0.24).
- 91% of students in the virtual coaching condition scored above the 30th percentile on the Woodcock Johnson III Reading Basic Skills Cluster Score (i.e., score above a raw score of 93); 94% of students in the typical support scored about the 30th percentile.
- Using hierarchical linear modeling to account for the nested structure design and to control for outcome differences resulting from initial performance status and student socio-economic status, we did not find any differences between students receiving intervention of different coaching conditions.
- Outcome data demonstrated that teachers with prior experience teaching *PEIR* had significantly higher student outcomes than novice teachers.

Other Findings

- There were substantial differences in teacher variables at post-test by coaching condition. Statistically significant Cohen's *d* effect sizes, favoring the virtual coaching support group, were found with teacher knowledge and fidelity of implementation (1.09 and 0.67, respectfully).
- After controlling for student initial characteristics, hierarchical linear modeling showed that the amount of lessons the participants actually received explained the most variance between outcome scores. Variance explained for outcome measures ranged from 51% to 91% (Mean = 72.91%, *SD* = 12.9%, *SE* = 3.89%).

2007-2008 (Study 2 – Austin Site)

Project Goals

- Focused on sustained implementation of intervention longitudinally. (More specifically) Although teachers could ask for support if they wanted it, this study focused on whether teachers could sustain results while using the *Responsive Reading* curriculum without mandatory frequent coaching or researcher support.
- Student Population: 228 first graders from 14 schools that were identified by their classroom teachers as being in need of reading intervention were randomly selected to be in one of two groups (i.e., experimental and contrast control). There were 96 students who received intervention (60 males) and 132 students in the contrast condition (84 males).
- Teacher Population: Total of 23 intervention teachers

Expected Outcomes

- The project wanted to examine the following research questions:
 - 1) Are schools able to effectively sustain implementation of a supplemental reading intervention with struggling first grade readers after the researchers can no longer provide support?
 - 2) What is the quality of implementation of a supplemental reading intervention with struggling first grade readers after the researchers can no longer provide support?

Actual Outcomes

- Although students in previous years significantly outscored contrast students in the previous three years of the study, similar results were not found during the current year. Comparison of the effect sizes between data collected in earlier years and data collect in the institutionalization year suggests that the effects of RRI were not effectively sustained once the researchers and coaches stopped providing support. Delta's ranged from -0.15 to -0.35.
- 81% of the experimental group scored above the 30th percentile on the Woodcock Johnson III Reading Basic Skills Cluster Score (i.e., score above a raw score of 93).