

2009

Research Brief

Exploratory Research Brief on Student Achievement and Referral Rates in Response to Intervention Demonstration Sites

This is an internal research document prepared by the WVDE Office of Assessment, Accountability and Research (OAAR) and the Office of Special Programs Extended and Early Learning.

Larry White, AD/Psychometrician/Lead Researcher
Nate Hixson, Research and Evaluation Coordinator
Lanai Jennings, Coordinator
Jason Perdue, Online Technology/Assessment Coordinator
11/2/2009



Contents

INTRODUCTION AND PURPOSE	3
RESEARCH QUESTIONS.....	3
DESIGN AND METHODOLOGY.....	3
Research Question 1	3
Research Question 2	4
FINDINGS.....	4
Research Question 1: Student Achievement in RTI Demonstration Schools.....	4
Research Question 2: Referral Rates in RTI Demonstration Schools.....	5
CONCLUSIONS.....	5
RECOMMENDATIONS	6

INTRODUCTION AND PURPOSE

The purpose of the current examination was twofold: (1) to determine the initial impact of the Response to Intervention (RTI) program on the WESTEST 2 Reading/Language Arts (RLA) achievement of students enrolled in RTI demonstration schools; and (2) to examine the referral rates for RTI demonstration schools relative to K-5 comparison districts.

RESEARCH QUESTIONS

- RQ1:** Is there a statistically significant difference in the 2008-2009 WESTEST 2 RLA achievement of students in the RTI demonstration schools when compared to students in a matched set of comparison schools?
- RQ2:** Is there a difference in the 2008-2009 referral rates for RTI demonstration schools when compared with the referral rates in K-5 comparison districts?

DESIGN AND METHODOLOGY

Research Question 1

A quasi-experimental design was utilized to answer RQ1. The 36 RTI demonstration schools served as the experimental group. Of these schools, two were removed prior to additional analyses because they were PreK-2 schools and therefore, no WESTEST 2 achievement data were available. Two additional schools were removed due to grade level configurations that deviated substantially from the majority of the RTI demonstration schools (i.e., both were P-8 schools). The resulting sample consisted of 32 of the 36 RTI demonstration schools.

A group of 32 comparison schools was identified using total enrollment, percentage of economically disadvantaged students, percentage of special education students and percent proficiency in RLA for all students in 2006-2007 as matching criteria. The match between experimental and control schools was confirmed through a series of post-hoc descriptive analyses. Table 1 presents the results of the matching process. Results indicated that the matching was successful and that schools in the comparison group were demographically and academically very similar to those in the experimental group.

Table 1: Results of Matching Process

Group	Average Enrollment	Average % Economically Disadvantaged	Average % SWD	Average % Proficient RLA 2006-2007
32 RTI Schools	443.22	53.19%	18.22%	81.10%
32 Comparison Schools	434.80	53.26%	17.74%	80.81%

Research Question 2

A review of extant data was conducted to address RQ2. Staff from the Office of Special Programs Extended and Early Learning queried referral information from the 2008-2009 initial referral data file and conducted descriptive analyses (i.e., means, standard deviations and frequencies) to determine whether differences existed between the initial referral rates for the RTI demonstration schools and the K-5 comparison districts.

FINDINGS

Research Question 1: Student Achievement in RTI Demonstration Schools

Grades 3 and 4 were chosen for comparative statistical analyses because achievement data for these grades were available for all of the 64 experimental and comparison schools. Tables 2 – 5 present the results of these analyses. In all cases, 3rd and 4th grade students in the RTI group performed better on the WESTEST 2 RLA assessment when compared with students in the comparison schools. This difference ranged between 1.00 and 2.65 scale score points. However, none of these effects were statistically significant.

Table 2: RLA Achievement All Students in Grades 3 and 4

Grade	<i>n</i> RTI	<i>n</i> Comparison	Mean Scale Score (RTI)	Std. Dev. (RTI)	Mean Scale Score (Comp.)	Std. Dev. (Comp.)	Mean Δ	Is the difference Significant?
3	2,048	2,261	425.15	40.19	423.59	41.38	+1.55	No; p>.05
4	2,050	2,199	436.93	41.91	434.48	43.53	+2.44	No; p>.05

Table 3: RLA Achievement for SWDs in Grades 3 and 4:

Grade	<i>n</i> RTI	<i>n</i> Comparison	Mean Scale Score (RTI)	Std. Dev. (RTI)	Mean Scale Score (Comp.)	Std. Dev. (Comp.)	Mean Δ	Is the difference Significant?
3	385	444	394.18	47.55	391.98	46.99	+2.19	No; p>.05
4	338	368	398.93	47.18	396.27	50.99	+2.65	No; p>.05

Table 4: RLA Achievement for Non-Disabled Students in Grades 3 and 4:

Grade	<i>n</i> RTI	<i>n</i> Comparison	Mean Scale Score (RTI)	Std. Dev. (RTI)	Mean Scale Score (Comp.)	Std. Dev. (Comp.)	Mean Δ	Is the difference Significant?
3	1,663	1,817	432.32	34.54	431.32	35.89	+1.00	No; p>.05
4	1,712	1,831	444.43	36.38	442.15	37.45	+2.27	No; p>.05

Research Question 2: Referral Rates in RTI Demonstration Schools

The average rate of initial special education placements for the 36 RTI demonstration schools was 4.0%. The average rate of initial special education placements for the K-5 comparison districts was 5.2%. Consequently, the rate of all new special education placements in the 36 RTI schools was 21-26% less than the rate of all new special education placements within the K-5 comparison districts.

When considered in isolation, the rate of initial specific learning disability placements was less than 1% for both the RTI model schools and the comparison districts. However, the rate of new specific learning disability placements in the 36 RTI schools was 35-37% less than the rate of new specific learning disability placements within the K-5 comparison districts, representing a significant clinical difference.

CONCLUSIONS

There was no statistically significant difference in the reading/language arts achievement of 3rd and 4th grade students in RTI demonstration schools and students in a matched set of comparison schools. However, several potential limitations must be considered in interpreting these findings. First, 2009 is the baseline year for the RTI program implementation in West Virginia. It is likely that the lack of differences found in this exploratory study could be attributable to varying degrees of implementation fidelity in RTI demonstration schools. It is likely the case that some RTI schools are implementing the program with a greater degree of fidelity than others. Furthermore, recent research from experts on implementation suggests that it can take up to 3 years for any program to reach full implementation (FIXSEN CITATION). It cannot be assumed that positive results will emerge until implementation is adequate.

Furthermore, 2009 was also the first year in which the WESTEST 2 assessment was administered in West Virginia schools. The difference between WESTEST and WESTEST 2 is vast and the adoption of the new assessment has far reaching implications for both teachers and students. This is a substantial confounding factor with respect to the validity these findings. Additional trend data will be necessary to overcome this hurdle.

Additionally, researchers examined school level averages for the current exploration. It is the belief of OAAR that student-level data will be required if WVDE wishes to properly determine the impact of RTI on student achievement. Any future impact study should utilize a comparison group which is matched to the student in the RTI demonstration schools based on both demographic variables and prior academic achievement.

Furthermore, although the current referral data confirms a difference in identification rates in the RTI schools and in the overall populations, the data does not substantiate that RTI is the causal link for this reduction. Additional analysis of the initial referral data will be required to explore causality and differences over time.

RECOMMENDATIONS

Additional years of WESTEST 2 data are required to properly estimate the impact of RTI in demonstration schools. Furthermore, any future impact study should examine student-level data instead of school-level averages. Future quasi-experimental research which employs a comparison group may be impossible due to the statewide rollout of RTI.

Further qualitative inquiry should be conducted to document the effects of the RTI program that are not necessarily measurable via standardized test scores.

An objective measure of RTI implementation should be utilized to determine which of the RTI demonstration schools are considered to be substantively implementing the program. Additional analyses could be conducted with this group to determine whether there are statistically significant differences in RLA achievement when only “high implementation” RTI sites are considered.