

**THE IMPACT OF *DESTINATION READING*<sup>™</sup>**

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Summary of Research Findings  
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## THE IMPACT OF *DESTINATION READING*

Riverdeep, with offices in Dublin, Ireland, San Francisco, California, and Cedar Rapids, Iowa, is a publisher of interactive learning tools for teachers and students. The Destination Success™ solution, which includes *Destination Math*® and *Destination Reading*™, is one of their product lines that provides individualized learning for schools.

This study evaluates the effectiveness of *Destination Reading* (DR), a research-based program for grades K-3, first released in 2002 and now used nationwide in over 800 schools. DR offers continuing professional development and onsite support from Education Consultants to help teachers improve student learning through DR. DR also provides standards-based assessment materials and online and print educator-support resources.

Previous to this study, Riverdeep had conducted several research studies of DR. Formative research was carried out over an 18-month period (December 2000-July 2002) that influenced the development process. Prior to product release, Riverdeep conducted a two-month (May-June 2002) field-test study, in which the product received high marks for grade appropriateness, quality, and educational approach. Then during the 2002-2003 school year, Riverdeep commissioned a summative research study to determine effectiveness in First and Second grades. Student achievement scores showed significant improvement and teachers' positive attitudes toward the use of computers in the classroom increased.

Because this study demonstrated success in the First and Second grades, Riverdeep wanted to extend its research to Kindergarten and closely examine how DR is implemented in Kindergarten and First grade classrooms. Riverdeep also wanted to more rigorously back its marketing claim that DR can make a positive difference in student performance in just 90 days.

Based on this background information, WestEd Regional Education Laboratory contracted with Riverdeep to design and execute a Student Impact study of the effectiveness of DR in Kindergarten and First grade classrooms. This study will examine whether students who work with DR show a measurable improvement in their reading skills when compared to similar students without that exposure to DR.

## Results

### TEST A ANALYSIS

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Test A was administered at the start of the study in January, before the intervention began. The Test A analysis checked for equivalence between groups, established baseline skill levels, and made statistical corrections as needed to ensure that the Treatment and Control groups were equivalent.

### Kindergarten

The Kindergarten Treatment and Control groups took selected subtests of the Pre-Reading (PR) version of the Gates-MacGinitie Reading Tests (GMRT) for Test A. As the following table shows, the difference in total test scores between the two groups was statistically significant, with the Treatment group performing almost 8 percentage points higher. Looking at the subtest skills, we learn that the Treatment group also significantly out-performed the Control group for letters and sound correspondence by over 15 percentage points. Although the Treatment group also out-performed the Control group for oral language, that difference was not statistically significant. In other words, these data show that the Treatment group went into the intervention with a pre-existing, higher level of reading skill in letters and sound-correspondence than the Control group.

Because of these significant pre-existing differences, it would have been very difficult to draw conclusions about whether any post-intervention (Test B) differences were associated with interim learning gains or were an artifact of pre-intervention differences in skill level. To help account for this potential confound, least squares regression techniques were employed to Control for the pre-intervention differences in test performance. As a result, Treatment/Control group differences in post-intervention scores on Test B were more likely to be attributable to participation in the intervention.

The following table presents these data and shows both the gross differences between the scores (comparisons using the raw, non-adjusted scores) and the adjusted differences. These adjusted differences represent the Treatment and Control group differences after controlling for differences in socio-demographic variables and baseline, raw test scores.

<b>Average Percentage Correct in Kindergarten Treatment and Control Groups for Test A (version PR)</b>
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<b>Subtest</b>	<b>Treatment Group % Correct</b>	<b>Control Group % Correct</b>	<b>Gross Difference<sup>1</sup></b>	<b>Adjusted Difference<sup>2</sup></b>
<b>Oral Language</b>	70.21%	50.81%	19.4%**	7.84%
<b>Letters &amp; Sound Correspondence</b>	91.32%	68.70%	21.82%**	15.41%**
<b>Total Score</b>	82.32%	58.54%	23.79%**	14.20%**

\*\* Statistically significant at the  $p \leq .001$  level.

<sup>1</sup> Gross difference represents the outcome using non-adjusted, raw scores.

<sup>2</sup> Adjusted difference represents the Treatment and Control group difference after adjusting for differences in socio-demographic variables and baseline test scores.

Riverside Publishing, publishers of the GMRT, does not compute national norms for their Pre-Reading test, and a comparison of these test scores to the general population was not possible.

Portions of the Beginning-Reading (BR) version of the GMRT were administered as Test B in May. The data, statistically adjusted to take into account differences in pre-test performance results, showed significant differences between the Treatment and Control groups' performances. As the following table reveals, the Treatment group significantly out-performed the Control group on the total test score and on all three of the individual subtests. In fact, the Kindergarten Treatment group's adjusted total score was over 18 percentage points higher than the adjusted total score of the Control group.

<b>Average Percentage Correct in Kindergarten Treatment and Comparison Groups for Test B (version Beginning Reading – BR)</b>				
<b>Subtest</b>	<b>Treatment Group % Correct</b>	<b>Control Group % Correct</b>	<b>Gross Difference<sup>1</sup></b>	<b>Adjusted Difference<sup>2</sup></b>
<b>Initial Consonants</b>	86.21%	54.42%	31.79%**	15.75% **
<b>Final Consonants</b>	77.90%	46.41%	31.49%**	15.20% **
<b>Vowels</b>	66.21%	34.81%	31.40%**	20.69% **
<b>Total Score</b>	76.77%	43.35%	33.42%**	18.26% **

\*\* Statistically significant at the  $p \leq .001$  level

<sup>1</sup> Gross difference represents the outcome using non-adjusted, raw scores

<sup>2</sup> Adjusted difference represents the Treatment and Control group difference after adjusting for differences in socio-demographic variables and baseline test scores

The subtests were further analyzed, item-by-item. Looking at the items in each individual subtest, the Treatment group scored higher than the Control group on all items, and *significantly* out-performed the Control group on the following subtests:

- 53% (8 of 15) of the Initial Consonant items;  $p \leq .05$
- 33% (5 of 15) of the Final Consonant items;  $p \leq .05$
- 67% (10 of the 15) of the Vowel items;  $p \leq .05$

Recall that the baseline differences between these two groups were equalized prior to administering Test B, so the fact that the Treatment group performed better than the Control group on Test A was not a variable in this outcome. National norms for the spring of Kindergarten for the Beginning Reading version of the test were not available for individual subtests.

These findings indicate that, by the end of the school year, the Kindergarteners who used DR as a supplement to their regular reading programs showed significantly higher levels of reading skill in understanding initial and final consonants and vowels.