



Effectiveness of *S.P.I.R.E.*

Customer Implementation Results

September, 2015

**Farmington Municipal School District
Farmington, New Mexico
2014-2015 School Year**

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INTRODUCTION

This report examines the effectiveness of *S.P.I.R.E.*® with non-proficient elementary school students in Farmington Municipal School District during the 2014-2015 school year. The district is located in the city of Farmington, New Mexico.

Information presented includes student gains on *S.P.I.R.E.* Level Tests and the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Tests.

As there are 10 elementary schools within Farmington Municipal School District, analyses are broken down by school in all sections, unless otherwise specified.

Students

To ensure fidelity of implementation, the following criteria were used to select which students were included in this report:

1. Student was active in *S.P.I.R.E.* during the 2014-2015 school year; and
2. Student pre-and post-test data was available for at least one of the reading tests provided by the district.

These criteria resulted in the selection of 215 students. The distribution of students by grade is displayed in Table 1.

Table 1: Distribution of students by grade who were active in *S.P.I.R.E.*

| GRADE | Number of Students |
|--------------|--------------------|
| 1 | 51 |
| 2 | 40 |
| 3 | 45 |
| 4 | 41 |
| 5 | 38 |
| Total | 215 |

SECTION 1: Fidelity of Implementation and Student Performance on S.P.I.R.E. Level Tests

Introduction

Information presented in this section focuses on fidelity of implementation (e.g., time spent in program per week) and student gains on *S.P.I.R.E.* Level Tests.

Implementation Fidelity

During the 2014-2015 school year, *S.P.I.R.E.* implementation varied among the 10 different elementary schools and multiple classes at Farmington Municipal Schools. The recommended best practices guideline for *S.P.I.R.E.* is 45-60 minutes per day, and the majority of teachers used *S.P.I.R.E.* five times a week, 45 minutes each day.

S.P.I.R.E. activity started in September and ended in May, however students missed an average of four weeks of *S.P.I.R.E.* instruction in the testing month of March. There was also no activity during the week of spring break in April, or during the winter break. Therefore, *S.P.I.R.E.* usage lasted about seven months during the 2014-2015 school year.

Performance on S.P.I.R.E. Level Tests

To examine student gains on *S.P.I.R.E.* Level Tests, the following selection criteria were implemented:

1. Student was active in *S.P.I.R.E.* during the 2014-2015 school year, and
2. Student was pre-and post-tested with the *S.P.I.R.E.* Level Test at the beginning and at the end of the *S.P.I.R.E.* level they were assigned.

These criteria resulted in the selection of 179 students of the original 215 selected students. The distribution of students by grade is summarized in Table 2.

| GRADE | Number of Students |
|--------------|--------------------|
| 1 | 17 |
| 2 | 21 |
| 3 | 36 |
| 4 | 51 |
| 5 | 54 |
| Total | 179 |

Table 2: Distribution of students by grade included in *S.P.I.R.E.* IPA analyses

There were 120 students active in Level 1 of *S.P.I.R.E.*, 38 students active in Level 2, and 21 students were using Level 3.

For *S.P.I.R.E.* Level Test gains by grade level, see Table 3.

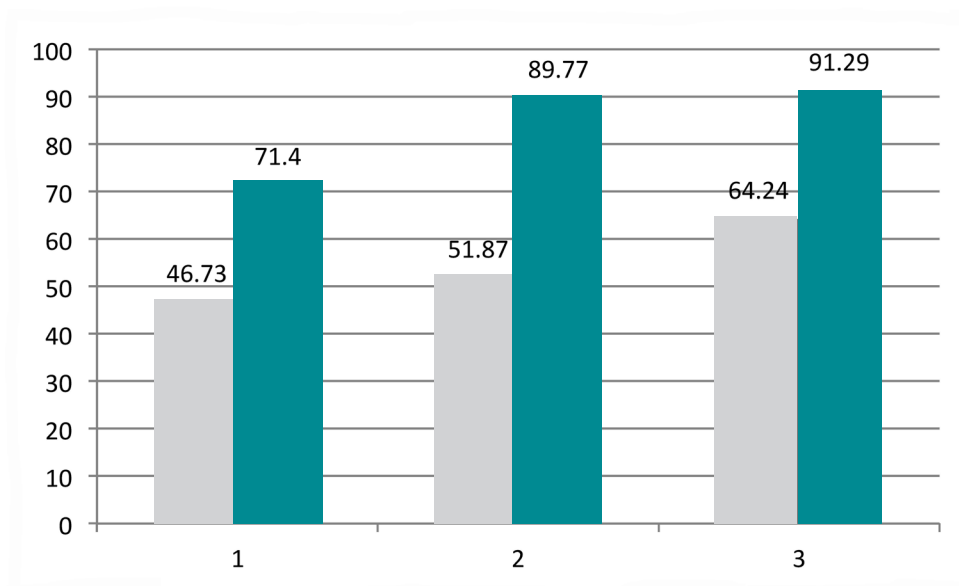
Table 3: *S.P.I.R.E.* Level Tests gains by grade

| GRADE | LEVEL 1 | | LEVEL 2 | | LEVEL 3 | |
|--------------|-------------------|--------------------|-------------------|--------------------|-------------------|--------------------|
| | Average Gains (%) | Number of Students | Average Gains (%) | Number of Students | Average Gains (%) | Number of Students |
| 1 | 19.92 | 15 | - | - | - | - |
| 2 | 31.94 | 19 | 15.5 | 2 | - | - |
| 3 | 19.33 | 27 | 44.80 | 5 | 37.50 | 5 |
| 4 | 32.96 | 32 | 56.25 | 12 | 30.85 | 7 |
| 5 | 17.66 | 27 | 28.63 | 18 | 18.77 | 9 |
| Total | 24.66 | 120 | 37.90 | 38 | 27.04 | 21 |

Students achieved significant average gains on **all** Levels on *S.P.I.R.E.* Level Tests. On Level 1, gains of 25% were statistically significant: $t(120) = 11.79, p < .001^*$. Level 2 gains of 38% were also statistically significant: $t(38) = 9.75, p < .001^*$. And Level 3 gains of 27% were statistically significant, $t(21)=7.38, p < .001^*$.

Overall, students at Farmington Municipal Schools achieved statistically significant gains on all *S.P.I.R.E.* Level Tests (all $p < .001^*$).

Figure 1 shows average gains (in percent) by level, based on *S.P.I.R.E.* Level Tests for students who were pre- and post-tested.



SECTION 2: Student Performance on DIBELS

Introduction

This section of the report examines the effect of the *S.P.I.R.E.* methodology on student DIBELS performance. Published by the Dynamic Measurement Group, DIBELS assessments are norm-referenced, individually administered measurements of student skills in each of the basic early literacy skills. DIBELS provides a set of procedures and measures for assessing the acquisition of early literacy skills from kindergarten through sixth grade. Assessments are designed to be short fluency measures used to monitor the development of early literacy and reading skills.

These tests were administered in the fall of 2014 and the spring of 2015. Students' scores were used to evaluate the impact of *S.P.I.R.E.* on their oral reading fluency, retell fluency, vocabulary, and maze comprehension skills.

The same selection criteria that were used in the first section were used in this section. In addition, students were required to have DIBELS test data for the beginning and the end of the school year on at least one DIBELS subtest. Note that different DIBELS tests are administered at different grade levels.

These criteria resulted in the selection of 77 students from grades 1-3 for inclusion in this section of the report. The distribution of students by grade is summarized in Table 4.

Table 4: Distribution of students included in DIBELS analyses

| GRADE | Number of Students |
|--------------|--------------------|
| 1 | 17 |
| 2 | 27 |
| 3 | 33 |
| Total | 77 |

Performance on DIBELS

Overall, students achieved statistically significant gains on comprehension, vocabulary, fluency, and non-sense word fluency (CLS) all $p < .001^*$. Their gains were approaching significant on one subtest of non-sense word fluency (WWR). Their gains on retell fluency were not significant.

Average gains by grade and overall district gains are summarized in Table 5.

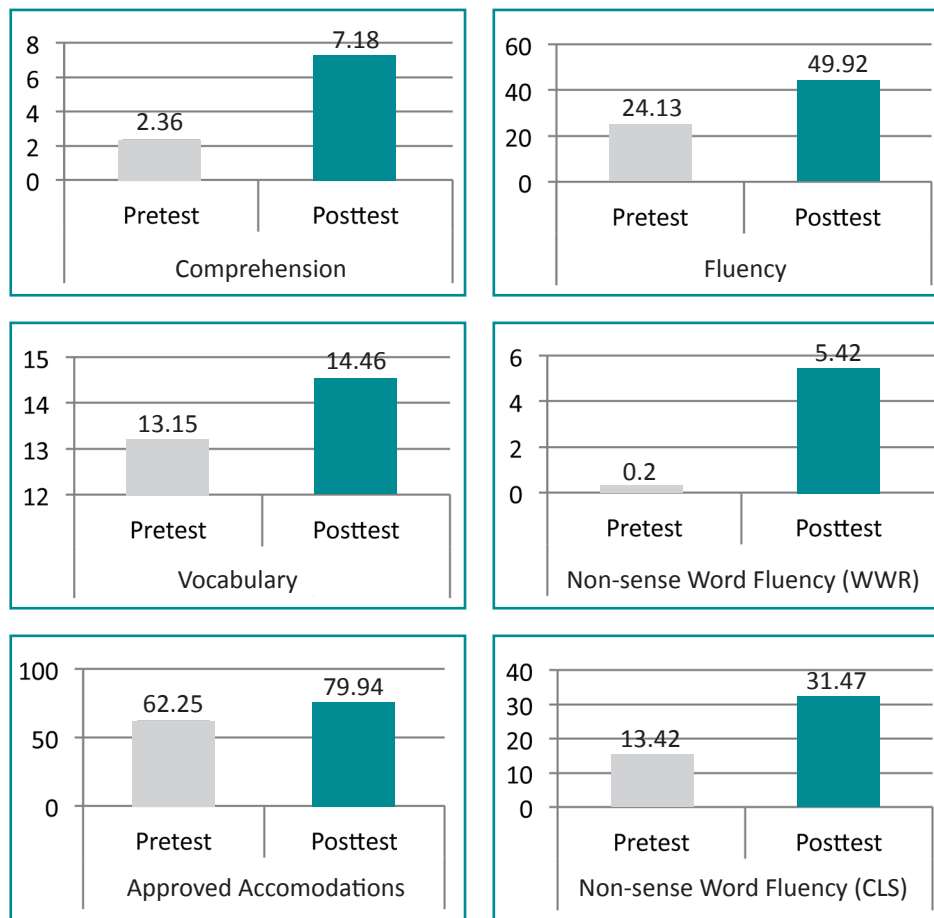
Table 5: Average DIBELS gains by grade level

| DAZE (Comprehension) | Number of Students | Average Gains | t-value | p-value |
|---|---------------------------|----------------------|----------------|------------------|
| Grade 3 | 33 | 5.30 | 5.86 | <.001* |
| Total | 33 | 5.30 | 5.86 | <.001* |
| VOCAB (Vocabulary) | Number of Students | Average Gains | t-value | p-value |
| Grade 1 | 6 | 1.83 | 4.56 | <.001* |
| Grade 2 | 3 | .33 | .50 | .66 |
| Grade 3 | 4 | 1.25 | 5.0 | <.001* |
| Total | 13 | 1.30 | 4.57 | <.001* |
| DORF (ACC) Approved Accommodations | Number of Students | Average Gains | t-value | p-value |
| Grade 2 | 6 | 21.66 | 3.84 | <.05* |
| Grade 2 | 10 | 15.30 | 5.2 | <.001* |
| Total | 16 | 17.68 | 6.31 | <.001* |
| DORF (FLU) Fluency | Number of Students | Average Gains | t-value | p-value |
| Grade 1 | 27 | 17.11 | 4.42 | <.001* |
| Grade 2 | 33 | 20.15 | 8.85 | <.001* |
| Total | 60 | 18.73 | 8.08 | <.001* |
| NWF (WWR) Non-sense Word Fluency | Number of Students | Average Gains | t-value | p-value |
| Grade 1 | 12 | 5.14 | 2.10 | .059 |
| Total | 12 | 5.14 | 2.10 | .059 |
| NWF (CLS) Non-sense Word Fluency | Number of Students | Average Gains | t-value | p-value |
| Grade 1 | 17 | 18 | 4.40 | <.001* |
| Total | 17 | 18.00 | 4.40 | <.001* |

* Significant difference $p < .05$

As presented in Table 5, student gains on comprehension, $t(33) = 5.86$, $p < .001^*$, vocabulary, $t(13) = 4.57$, $p < .001^*$, fluency, $t(60) = 8.08$, $p < .001^*$, and non-sense word fluency (CLS), $t(120) = 11.79$, $p < .001^*$, were statistically significant with all $p < .001^*$. Their gains were approaching significance on one subtest of non-sense word fluency (WWR), $t(12) = 2.10$, $p = .059$. Their gains on retell fluency were not significant, $t(4) = .75$, $p = .50$, however data for only 4 students was available for this subtest.

Figure 2 Summarizes average gains by grade and overall district gains on different subtests of DIBELS



SUMMARY

Overall, the results of this report were very positive. This report focused on non-proficient students who attended school in Farmington Municipal School District during the 2014-2015 school year and were placed in *S.P.I.R.E.* as a core reading intervention. These students achieved statistically significant gains on all *S.P.I.R.E.* Level Tests.

These same students also significantly increased their comprehension, vocabulary, fluency, and non-sense word fluency (CLS), based on their DIBELS performance. Their gains were approaching significant on one subtest of nonsense word fluency (WWR).

The results of these analyses clearly indicate that *S.P.I.R.E.* helped struggling readers improve their reading abilities in order to narrow the achievement gap in reading.

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