Impact of the Iowa SPDG Grant on Student Outcomes

The most recent findings from the external evaluation of Iowa's SPDG, summarized in this report, revealed that teachers' use of specially designed instruction (SDI) produced significant improvements in literacy outcomes for students with disabilities. These outcomes included increased numbers of students with disabilities who met grade-level benchmarks over time as well as increased rates of growth in reading. Improvements were most prevalent in schools where teachers expanded their use of specially designed instruction from the fall of 2017 to the spring of 2018. Specifically, teachers who gained 1 point or higher on a measure of SDI use (i.e., SDI Framework Implementation Tool) saw significantly higher rates of improvement in their students, grades 2, 3 and 6.[1] Remarkably, some students exhibited growth at or above the 50th percentile, hence putting them on the path towards achieving grade-level reading proficiency and closing the achievement gap with their same-aged peers.

Student performance, grades 2 through 6, was assessed using the universal literacy screening assessment, the Curriculum-Based Measurement for reading (CBMr) from FastBridge Learning. The CBMr provides an index for word reading efficiency—a predictor of reading comprehension—by measuring the number of words read correctly (WRC) in 1-minute timed test. The study measured changes in 1) the percentage of students who met grade-level benchmarks for the number of WRC, 2) the average rate of improvement, and 3) the percentage of student who made expected and ambitious growth gains from the 2016-17 to the 2017-18 school year. It employed a quasi-experimental design to determine the relationship between SDI implementation and student outcomes. Schools were designated into high and low SDI implementation groups based on the average change in teachers' use of SDI as

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About Iowa SPDG

In October 2015, the Iowa Department of Education received a five-year SPDG funding award from the Office of Special Education Programs, called *Ensuring Effective Specially Designed Instruction* (SDI). The project will develop a statewide system to effectively implement and support personnel preparation and professional development in the area of specially designed instruction. The goal is to build the capacity of educators to effectively implement SDI and improve literacy outcomes for learners with disabilities.

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[1] Changes in rates of improvement for grades 4 and 5 were nonsignificant.

measured by the SDI Framework Tool (SDI FIT). The SDI FIT assesses implementation of the nine critical features associated with the Diagnose, Design, and Deliver components of the SDI Framework. Teachers complete the assessment in the fall and spring by rating their level of implementation using a five-point scale that ranges from **not at all** to **sustained**. Schools were designated into the high group for each component if teachers made gains of 1 point or higher from fall 2017 to spring of 2018.[2] Conversely, schools were designated into the low group if teachers' use decreased at least 1 point or lower. **Table 1** outlines the average gains or losses and the number of schools in each group.

Table 1
High and Low SDI Groups
Mean Gains/Losses and Number of Schools in Each Group

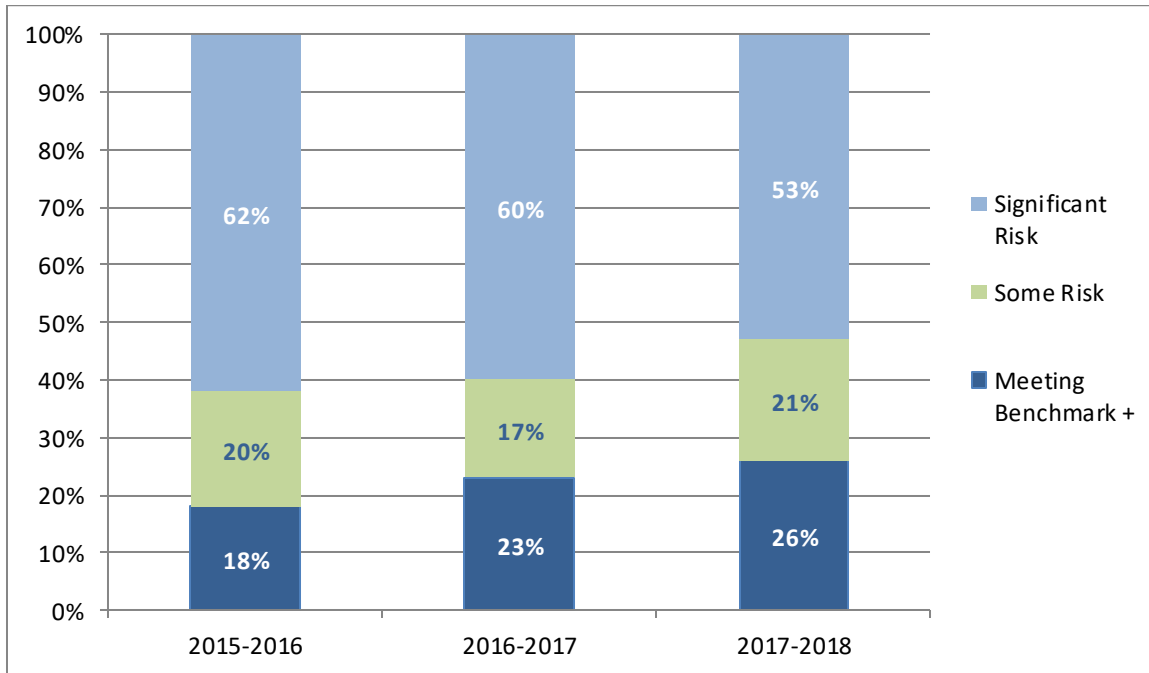|	High Group Mean Gain (n)	Low Group Mean Loss (n)
Diagnose	+2.39 (13 schools)	-1.30 (9 schools)
Design	+2.55 (11 schools)	-1.54 (11 schools)
Deliver	+2.68 (8 schools)	-1.69 (16 schools)

Benchmark Findings

As noted above, the CBMr includes a 1-minute test of WRC, with benchmarks established for each grade level. The benchmarks inform educators about students' progress towards successful reading and help them to identify students who may be at some risk or high risk for reading deficiencies. For example, a 2nd grade student should be able to read 106 words correctly per minute by spring in order to meet the benchmark. Students with disabilities typically have difficulty meeting benchmarks; however, SDI is intended to address these deficiencies by matching instruction to individual learner needs. The SDI Framework facilitates this process by guiding teachers in diagnosing, designing, and delivering instruction better aligned to students' unique reading needs.

The CBMr results showed that Iowa SPDG schools evidenced an increase in the percentage of students with IEPs, grades 2 through 6, who met benchmarks from Year 1 to Year 3 of grant implementation. Differences between the high and low implementation groups were not statistically significant; however, they trended in favor of the high group. **Figure 1** (following page), which contains averages across all schools, shows an 8-point gain in the percentage of students meeting benchmarks over the 3-year period (from 18% to 26%) and a corresponding 11-point decline in the percentage of students who were at significant risk (62% to 53%). The differences were statistically significant.

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[2] A school could be in the high or low group for one, two or all three of the components.

Figure 1
**Percentage of Students with IEPs at Meeting Benchmark, Some Risk, and Significant Risk[3]
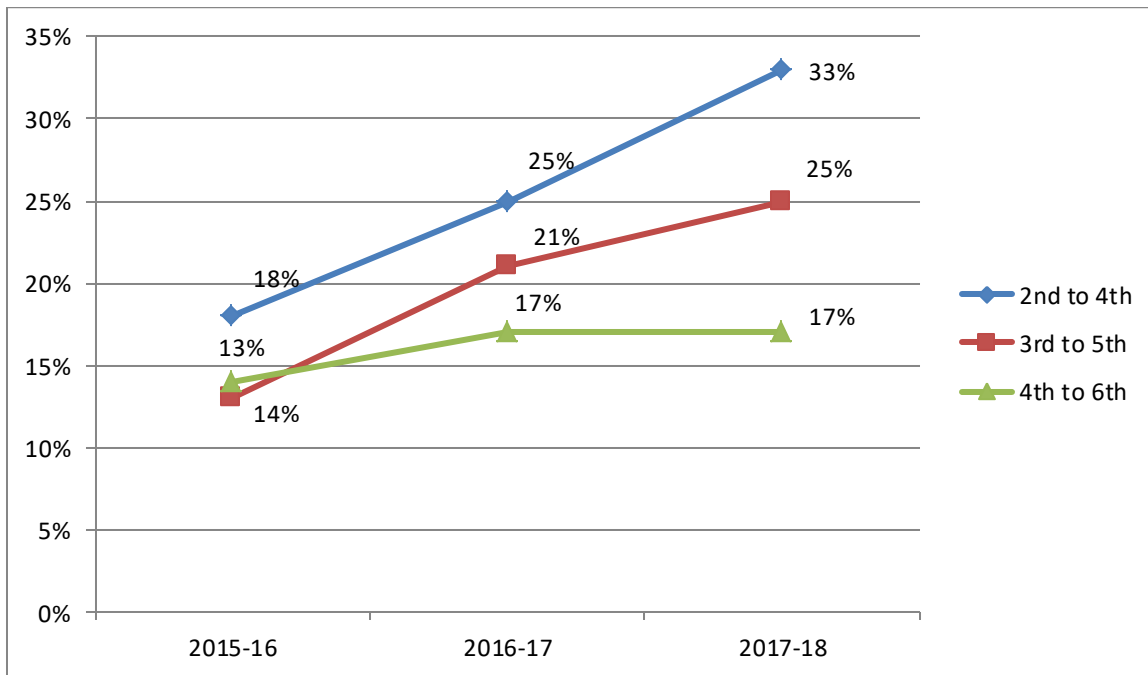Across 3 Years of the Iowa SPDG grant[4]**

Examining the 3-year trajectory by grade level (**Figure 2** following page) it is evident that students in the lower grades achieved more striking outcomes. For example, the percentage of 2nd graders who met the benchmarks nearly doubled from 18% to 33%, likewise for the percentage of 3rd graders (14% to 25%). In contrast, students in the 4th grade during year 1 of the grant improved only 3-percentage points by year 3 (14% to 17%). The better performance of lower grade students is consistent with research on the benefits of early intervention.

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[3] Averaged across grades
[4] Includes students with matched data for 2- and 3-years

Figure 2
Percentage of Students Meeting Benchmarks
3-year Longitudinal Comparison[5]
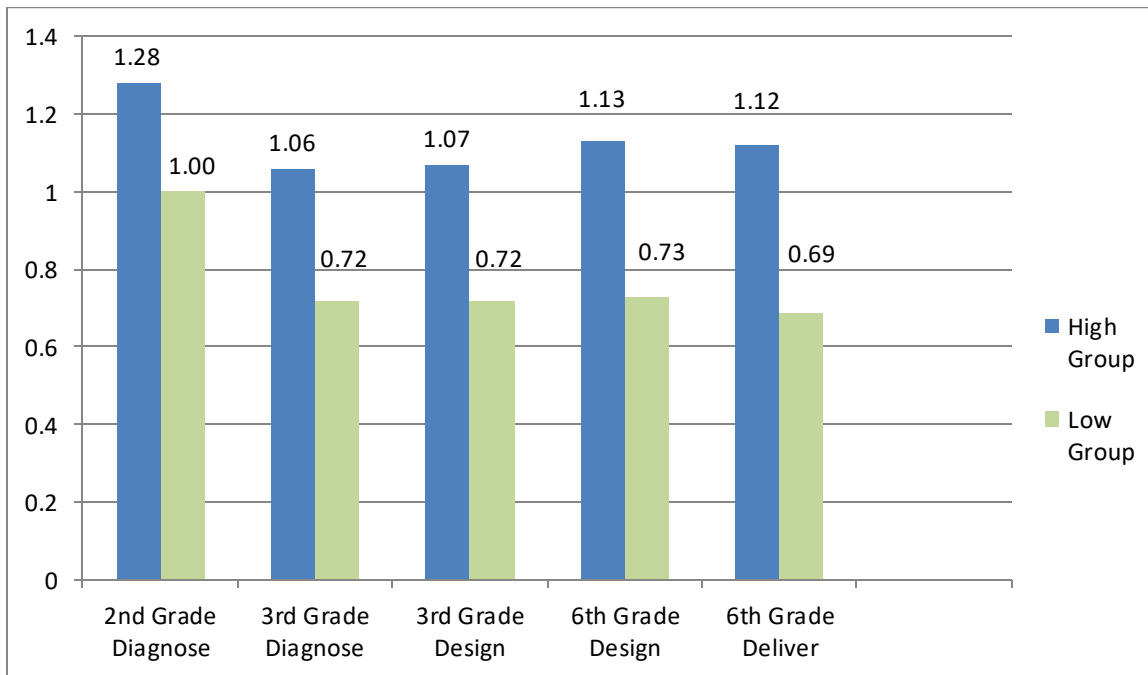

Growth Score Findings

In addition to meeting grade-level benchmarks for WRC, students' rate of reading improvement is another important indicator of reading development and comprehension. This is represented as a growth rate score on the CBMr, which is the average number of newly acquired words per week between fall and spring testing. Using the 2nd grade again as an example, students who are making expected progress at the 50th percentile typically gain an average of 1.34 words a week. Doing so will keep them on the path towards reading proficiency and ensure that they will meet the spring benchmark for their grade level.

The evaluation found that the increased use of SDI had its biggest impact on rate of improvement, as it relates to students' reading. For example, 2nd and 3rd grade students in schools where teachers increased their use of SDI practices related to diagnose for instructional design (e.g., defining areas of concern and determining critical supports needed for learner success) had higher growth rate scores compared to 2nd and 3rd grade students in schools where teachers decreased their use of SDI to diagnose.[6] The differences between the two groups are listed in **Figure 3**. Differences between groups were statistically significant and independent of students' prior growth rate scores.

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[5] Includes students from the 2015 and 2016 Cohorts (n=143 students, 17 schools)
[6] Other grade levels were not significant.

Figure 3
Spring 2018 Average Growth Rate Score[7]
Comparison between High and Low SDI Group

More specifically, in the high group, 2nd grade students gained about 1.28 words a week and 3rd grade students gained about 1.06 words a week, putting them both just below the 50th percentile for growth (i.e., 1.34 for grade 2 and 1.15 for grade 3). Conversely, in the low group, 2nd and 3rd grade students' growth scores (1.00 and 0.72 respectively) were well below the rate of expected progress for each grade.

Similar patterns were seen at the 3rd and 6th grade levels[8] in schools where teachers increased their implementation of design for instructional delivery, which involves determining the intensity and frequency of alterable variables, using high leverage instructional practices aligned to learner needs, and maximizing opportunities for access and engagement through appropriate accommodations and modifications, to name a few. Indeed, the rate of growth demonstrated at the 6th grade in the high group, i.e., 1.13 words weekly, was above the 50th percentile of 0.88 words for growth (see **Figure 3**). Unfortunately, 6th grade students in the low group had a growth rate of 0.73 words, which is below the rate of expected progress.

Significantly higher growth scores at the 6th grade level were also confirmed in schools where teachers increased their implementation of deliver for learner engagement.[9] Related practices
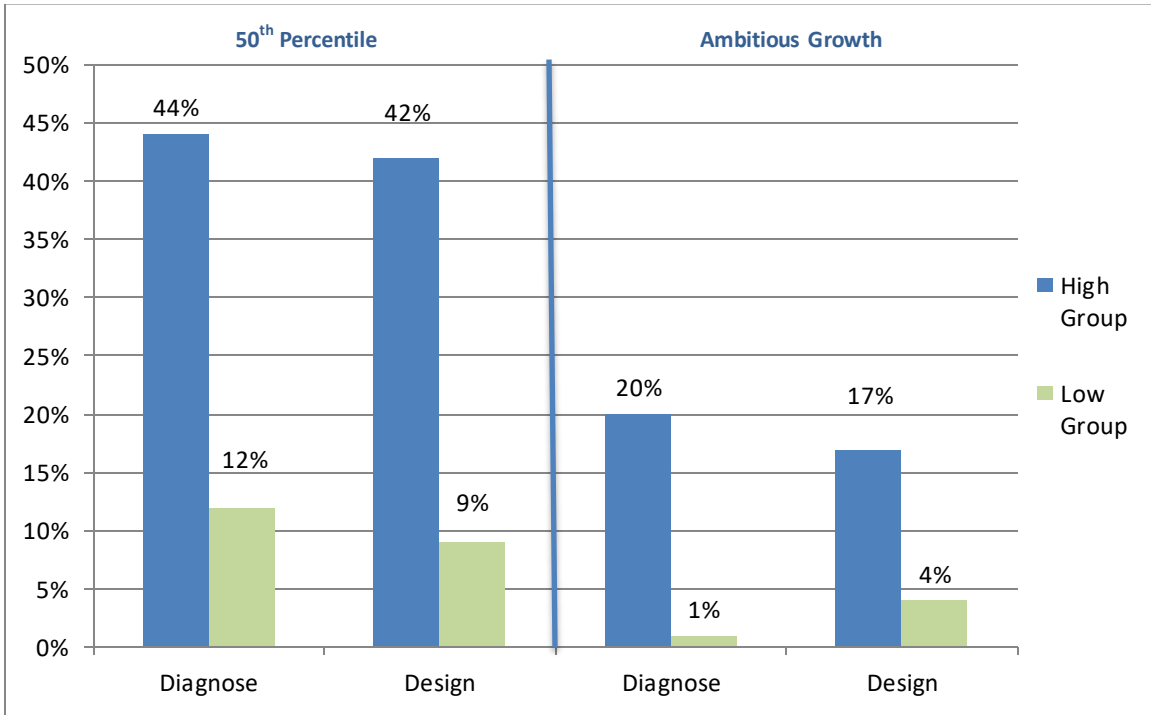
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[7] Estimated marginal mean score after factoring out spring 2017 growth score in ANOVA analyses.
[8] Other grade levels were not significant.
[9] Changes in growth scores at other grade levels were not significant.

include monitoring fidelity of instructional practices and learner progress, and adjusting instruction as necessary. Here, the rate of growth was 1.12 in the high group compared to 0.69 in the low group. Again, the rate of growth in the high group was above the 50th percentile for growth.

Figure 4
Percentage of 3rd Grade Students at 50th Percentile and Ambitious Growth Level Comparison between High and Low SDI Group

All told, higher growth scores for students in schools where teachers increased SDI practices helped to put these students on a trajectory towards meeting or exceeding benchmarks for successful reading proficiency, examples of which are provided in **Figure 4**. As seen in the figure, between 42% and 44% of 3rd graders in the high group had rates of improvement that put them at the 50th percentile for growth, as compared to only 9-12% of 3rd graders in the low group.[10] Equally impressive is that a higher percentage of 3rd graders in the high groups were at the ambitious growth level (>85th percentile) as compared to the low group. In essence, students performing at/above the 50th growth percentile are making more than expected progress which means that they are "beating the odds" and closing the gap. Differences between the groups at both levels were statistically significant and independent of students' prior growth rates.

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[10] There was a positive trend at the other grades, favoring the high group; however, the differences were not statistically significant.

Summary

The findings reported in this issue of the *SPDG Spotlight* extend the evidence for the impact of Iowa's SPDG on teaching and learning outcomes. In the previous edition, the *SPDG Spotlight* revealed significant improvements in teachers' implementation of SDI practices, particularly in schools where there was coaching support that included action planning, regular meetings or PLCs, and ongoing coaching conversations related to SDI and the application of the SDI Framework. This report adds to these findings by showcasing the connection between teacher implementation of SDI and positive student literacy outcomes. Specifically, in participating schools, more students met grade level benchmarks over time. Moreover, in schools where teachers increased their implementation of SDI practices, students had higher rates of growth, and in some cases enough to close the achievement gap, compared to schools where teachers decreased SDI implementation. Taken together, the report provides valuable information that can be used to build the capacity of educators to effectively implement SDI and improve literacy outcomes for learners with disabilities.