Secret Stories® Study:
1st Grade, California

Study Summary

The case study teacher implemented Secret Stories® in their grade 1 class in an urban district of California in the fall of 2018. The efficacy of Secret Stories® was assessed in this case study using a pre-test/post-test model based on the DRA® reading assessment. An analysis comparing the student DRA® outcomes to expected DRA® levels was also completed to further bolster the validity of these results. **A Hedge's g effect size was found of 2.19**, suggesting an extremely large magnitude of effect for Secret Stories®.

Additionally, students in this class increased their reading levels by an average of 458%. By the end of the year, the average student was reading at almost a grade 3 level, with the majority reading at a grade 4 level. This is even more impressive when considering that 76% of these grade 1 students were reading at a kindergarten level at the beginning of the year.

Product Description

Secret Stories® is a multisensory, neuroscience based approach to fast-tracking phonics skills for reading that can be used alongside any reading or phonics curriculum. Rooted in the science of reading and aligned with early brain development, Secret Stories® uses familiar schemas to help children make sense of the sounds letters make together, along with embedded mnemonic images to help them remember for independent reading and writing.
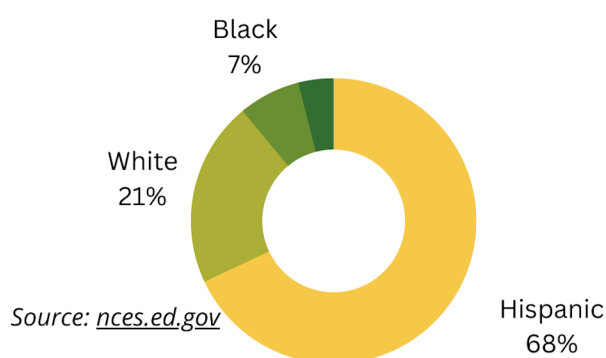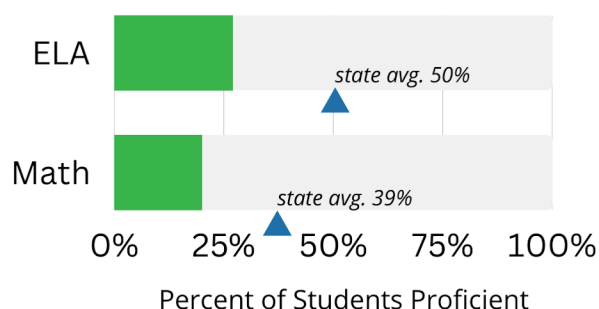
Figure 1: Enrollment by Ethnicity

Black 7%
White 21%
Hispanic 68%

Source: nces.ed.gov

Figure 2: District Summary Ratings

ELA
state avg. 50%
Math
state avg. 39%

0% 25% 50% 75% 100%

Percent of Students Proficient

School Setting

This case study school was a very low-performing school with only 27% of students meeting grade level expectations and test scores that were almost half of the state averages. 23% of students are English language learners (ELL) students and 78% of students come from low-income families. The vast majority of students are of hispanic origin, with a small population of black and caucasian students.

Academics Ratings for School: 2/10

Test scores at this school fall far below the state average. This suggest that students at this school are likely not performing at grade level.

Methodology

The primary assessment for this analysis was the DRA®, a benchmark assessment that also measures vocabulary and comprehension. First, efficacy was measured using a Hedge's G calculation on pretest to post-test scores. Next, we compared the post-test results to the expected results according to the DRA® guidelines. According to those guidelines, the students should have been at level 16 by the end of the year. The researchers used 16 as the control group's mean and borrowed the SD and N from the treatment group. Of course, such an analysis may not be fair, as it assumes that all the students started at an appropriate level. That being said, the pre-test mean for the treatment group was 6.18 and according to the DRA® guide, the students should have been at 5. This provided a pre-test effect size of .15, which is not significant, suggesting equivalent groupings.

To ensure validity, the researchers examined the pre-test scores for each student. 6 students started the year at level 10 or higher. To correct this variable, a third analysis was conducted in which all students who started far above the predicted level of 6 were excluded. Unfortunately, this created a new problem, as the rest of the class was reading at an early kindergarten level. Indeed, the corrected treatment group started at a negative effect size of 3.17. With these factors in mind, it is the position of the authors that the most scientifically valid effect size is the non-corrected comparison one.

All effect sizes were independently calculated by a second writer, to ensure the integrity and then reviewed by a third party, independent research firm.

Generally speaking, effect sizes for studies within reading education research can be interpreted based on the following benchmarks:

Studies with Control Groups

Low	0.2
Medium	0.5
Large	0.8
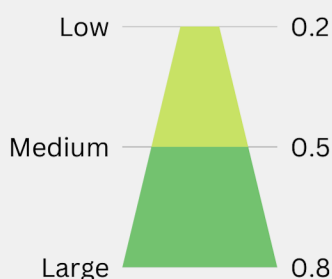
Studies Without Control Groups

Low	0.4
Medium	0.7
Large	1
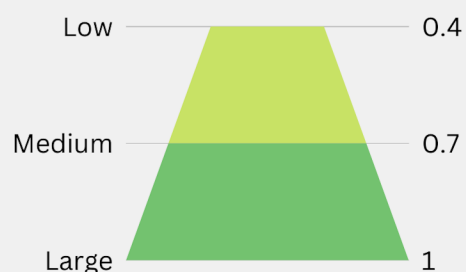
Key Findings

Three different types of analysis were conducted to find the effect size and efficacy of Secret Stories® in this case study. All three showed promising results. The first analysis used a pre-test/ post-test calculation, which resulted in an effect size of 2.19. The second analysis compared the class results to the DRA benchmarks, resulting in an effect size .98, which, again, is significant. The third analysis removed the 6 top performing students from the class, which changed the result to a moderate effect size of .83. However, the pre-test scores for the third analysis were extremely biased against the treatment group with a negative effect size of -3.17.

Table 1: **DRA® Assessment Scores**

	Mean	**Standard Deviation**	**N**	**Effect Size**
Pre-Test	6.18	6.94	24	
Post Test	28.36	12.5	24	2.19
DRA® Benchmark BOY	6	NA	NA	.15
DRA® Benchmark EOY	14	NA	NA	1.2
Corrected Pre-Test Scores	2.25	1.18	19	-2.3
Corrected Post-Test Scores	24	12.02220168	19	.83
Mean				1.4

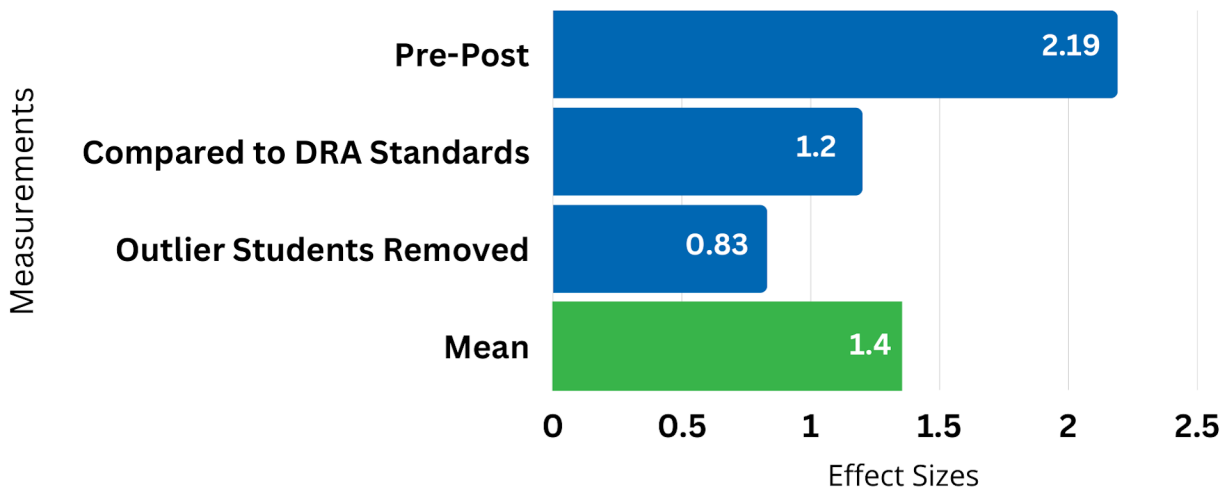*Figure 2*: Secret Stories® Grade 1 DRA® Outcomes

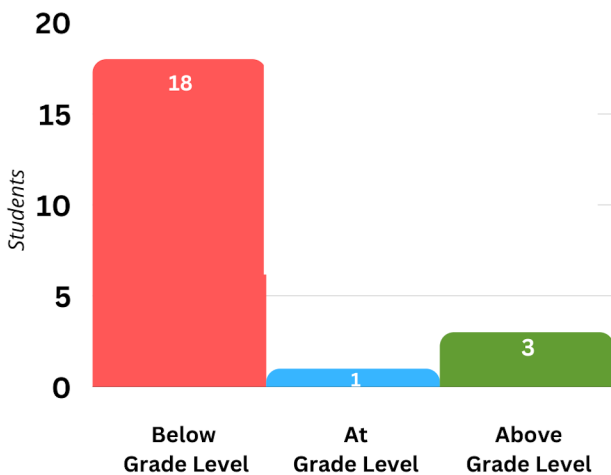*Figure 3*: DRA® Outcomes Before Secret Stories®
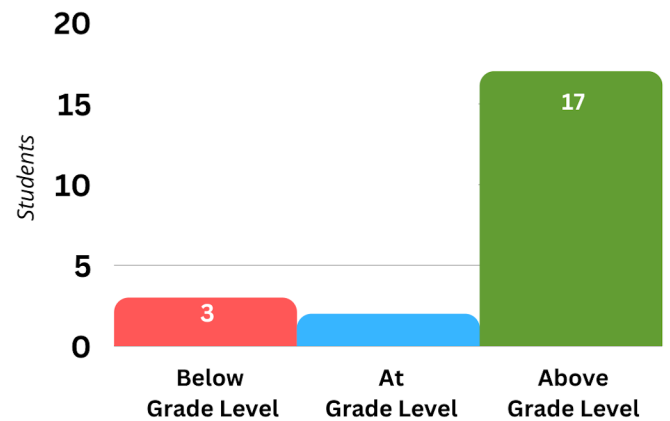

Figure 4: DRA® Outcomes After Secret Stories®

Conclusion

In terms of absolute results, students in this class increased their reading levels by an average of 458%. By the end of the year, 20/25 students were reading above grade level, with the average student reading at almost a grade 3 level, and the majority of students reading at a grade 4 level, despite the fact that 76% of the class was reading at a kindergarten level at the beginning of the year.

Research Limitations

This study report was written and analyzed via secondary data analysis, as the authors did not design the study. The fidelity of the implementation of Secret Stories® (or the control group curriculum) could not be verified with this study.

Ethics Agreement

This case study was written by an independent firm on behalf of Secret Stories®, under a contractual agreement that all results would be published, regardless of outcomes and that no data would be withheld from said firm. All data and methods were independently checked by a third party education research firm not associated with Secret Stories®, or the writers of this report.

Independent Verification

Learning Experience Design (LXD)
Research & Consulting
a division of Charles River Media Group, LLC

This case study was written by an independent analyst on behalf of Secret Stories who verified the results.
All reports were also independently reviewed by Learning Experience Design Research, a third-party education research firm.