

Shoreline Reading Intervention Program 2016

foundry10
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1.0. Introduction

1.1. Brief Overview of Program

During the summer of 2016, foundry10 teamed up with Shoreline School District to provide a monthlong reading program that had an integrated drama component with the goal of enhancing student skills and motivation.

1.2. Description of Student Data Collected by foundry10

1.2.1. Demographic data

The Shoreline School District provided foundry10 with anonymized data on students participating in the reading program. Student gender, Special Education status, ELL status, school, and race were reported for each participating student.

1.2.2. Test scores

Students completed a number of grade-specific DIBELS measures at the start and end of the reading program. The measures used were:

- First sound fluency (FSF)
- Phoneme segmentation (PSF)
- Nonsense word fluency (NWF)
- Oral reading fluency – correct words per minute (DORF)
- Sight words read (Sight words)

1.2.3. Student-reported data

Students were asked to assess their own skills and opinions regarding reading. At the beginning and at the end of the program, students were asked to respond to the following Likert-type questions:

- How do you feel about reading for fun at home?
- How do you feel about reading in school?
- How do you feel about stories you read in reading class?
- How do you feel when you read out loud in class?
- An important reason I read is because I am interested in it.
- I am a good reader.
- I know I will do well in reading next year.
- I like reading that I'll learn from, even if I make a lot of mistakes.
- I share my ideas with other kids in reading class.
- It is very important to me to be a good reader.

2.0. Analyses and Results

2.1. Analysis

Data was included in the analysis if the student had both a PRE and POST score for a given measure. PRE and POST scores were compared. Change in scores overall, by grade level, and by ELL status were calculated. PRE and POST student self-ratings were compared. POST student ratings for drama questions were summarized overall, by grade level, and by class.

2.2. Test Results

2.2.1. Overall results

Data was collected from a total of 156 students. Table ## shows the demographics of the students who participated in the program.

Table 1. Demographics of students participating in reading program.

		Grade			
		K	1 st	2 nd	3 rd
Total number of students		38	30	45	43
Gender	<i>Female</i>	13 (34%)	11 (37%)	18 (40%)	19 (44%)
	<i>Male</i>	25 (66%)	19 (63%)	27 (60%)	23 (53%)
	<i>N/A</i>	--	--	--	1 (2%)
Special Ed	<i>Yes</i>	11 (29%)	3 (10%)	13 (29%)	14 (33%)
	<i>Unknown / N/A</i>	--	3 (10%)	--	1 (2%)
ELL	<i>Yes</i>	10 (26%)	12 (40%)	20 (44%)	19 (44%)
	<i>Unknown / N/A</i>	--	3	--	2
School	<i>Briarcrest</i>	4	3	5	3
	<i>Brookside</i>	3	2	1	4
	<i>Cascade</i>	2	3	--	4
	<i>Echo Lake</i>	8	2	4	8
	<i>Home Education Exchange</i>	--	--	1	--
	<i>Highland Terrace</i>	2	4	4	1
	<i>Lake Forest Park</i>	1	3	4	4
	<i>Meridian Park</i>	6	4	5	5
	<i>Parkwood</i>	3	2	9	3
	<i>Ridgecrest</i>	6	6	7	7
	<i>Syre</i>	3	1	5	2
	<i>Unknown</i>	--	--	--	2
Race	<i>Am Ind / Alaska Nat</i>	1 (3%)	--	--	--
	<i>Asian</i>	4 (11%)	6 (20%)	8 (18%)	6 (14%)
	<i>Black</i>	2 (5%)	2 (7%)	5 (11%)	6 (14%)
	<i>Hawaiian / PI</i>	--	--	1 (2%)	--
	<i>Hispanic</i>	13 (34%)	5 (17%)	10 (22%)	13 (30%)
	<i>Multi</i>	6 (16%)	--	6 (13%)	3 (7%)
	<i>White</i>	12 (32%)	14 (47%)	15 (33%)	13 (30%)
	<i>Unknown</i>	--	3 (10%)	--	2 (5%)

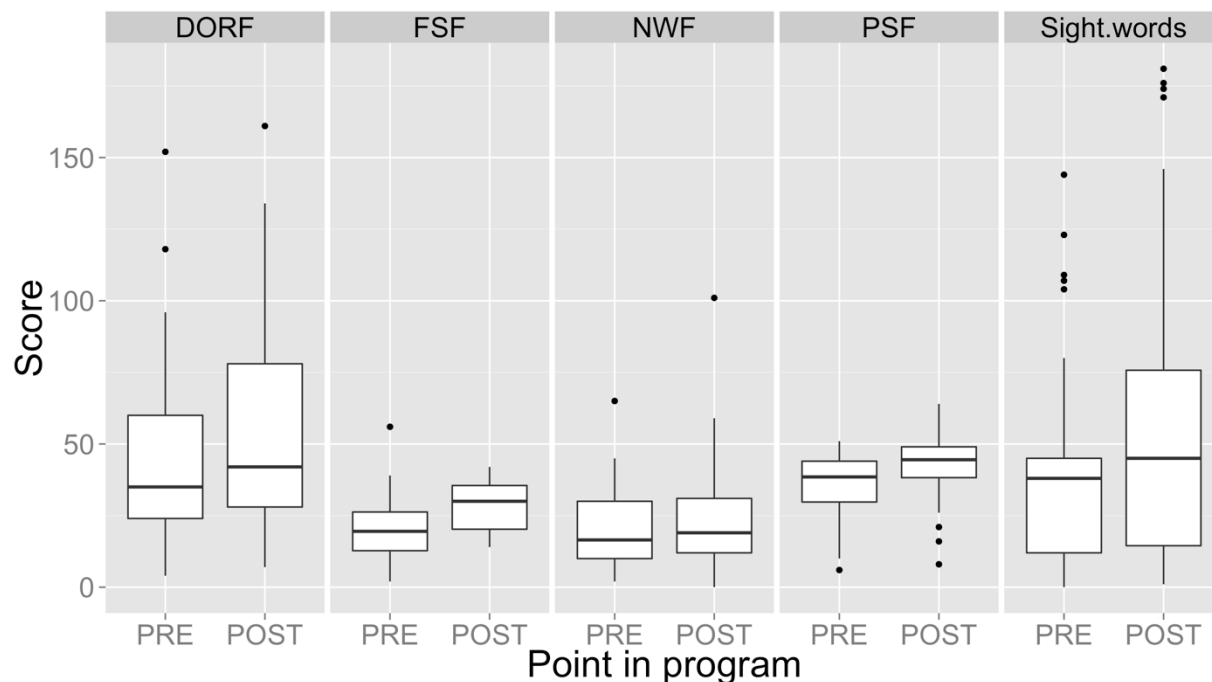
Table 2 shows the number of students who had reported PRE and POST scores for each measure.

Table 2. Number of scores analyzed for each measure, by grade and ELL status

Measure	K	K – ELL	1 st	1 st – ELL	2 nd	2 nd – ELL	3 rd	3 rd – ELL	Total
FSF	7	1	-	-	-	-	-	-	8
PSF	21	7	-	-	-	-	-	-	28
NWF	23	7	14	8	-	-	-	-	52
DORF	-	-	14	8	-	2	11	10	45
Sight words	22	7	17	11	22	15	20	12	126

Figure 1 shows changes over time for each measure. Results are summarized by measure below.

Figure 1. PRE and POST scores for each measure – whole sample

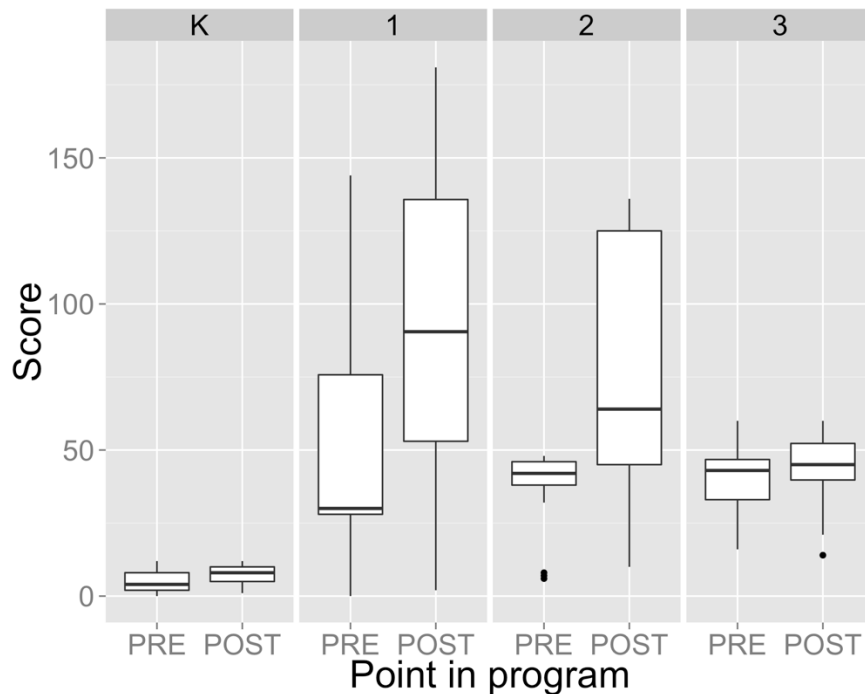


PSF: Mean PSF scores significantly improved over time (PRE mean=35, POST mean=42, $p=0.037$). Twenty-five of 28 students showed improvement in PSF scores, more than expected by chance ($\chi^2=15.75$, $p=0.000$).

Sight words: Mean number of sight words significantly improved over time (PRE mean=35, POST mean=56, $p=0.000$). Out of 126 students, 102 showed improvement in the number of sight words

($\chi^2=47.06$, $p=0.000$). All grades showed a trend towards improvement in sight word reading; the improvement appears to be greatest in grades 1 and 2.

Figure 2. PRE and POST Sight word scores, by grade



NWF: Mean NWF scores did not show significant improvement over time, but 34 out of 52 students showed improved NWF scores, more than expected by chance ($\chi^2=4.33$, $p=0.038$), and 13 out of 52 students showed decreased NWF scores. This suggests that improvements were modest but offset overall by those students whose scores decreased.

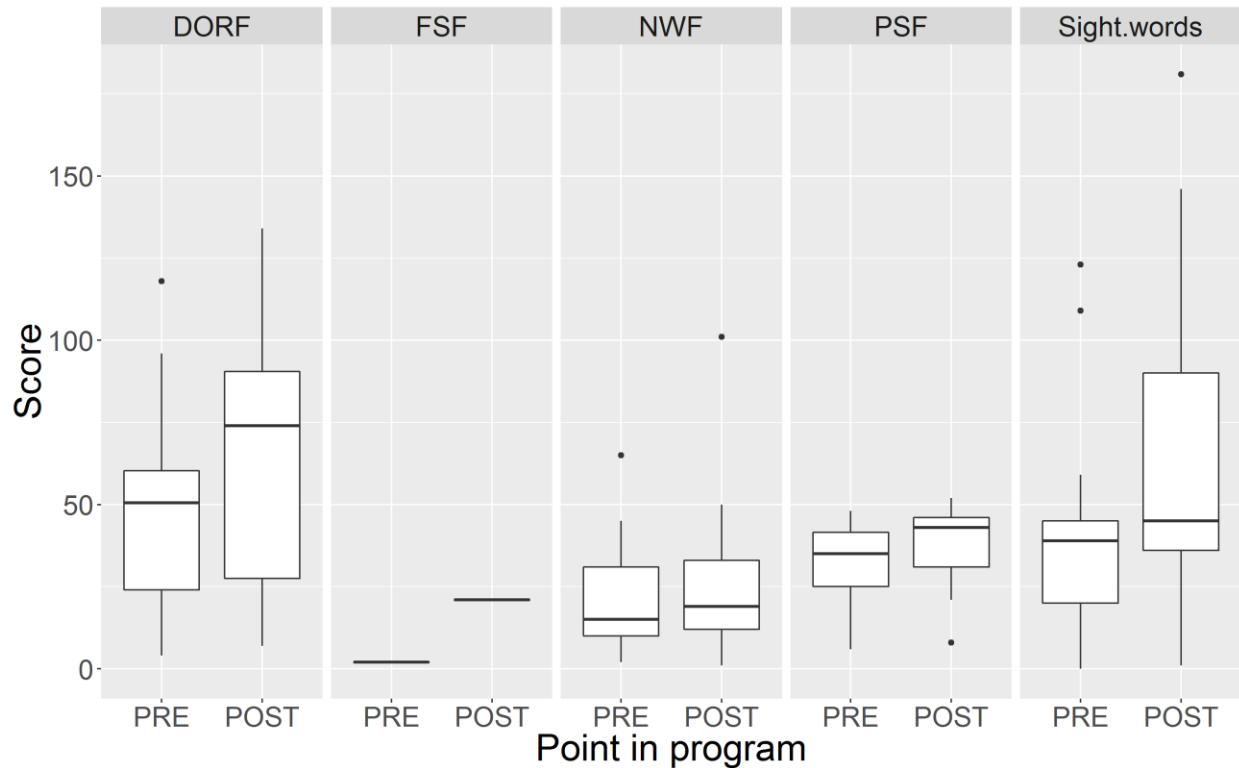
DORF: DORF scores did not change significantly from PRE to POST, but 35 out of 45 students showed improved DORF scores, more than expected by chance ($\chi^2=14.21$, $p=0.000$). This suggests that improvements were modest but offset overall by those students whose scores decreased.

FSF: FSF scores did not change significantly from PRE to POST.

2.2.2. Results for ELL students

For the subset of ELL students (n=176), each measure showed change in the right direction over time. Mean number of sight words significantly improved over time (PRE mean=36, POST mean=62, $p=0.002$).

Figure 3. PRE and POST scores for ELL students



2.3 Student-reported results

Qualitative data was used for summarization and statistical analysis if both PRE and POST responses were provided. Data from a total of 122 students was analyzed.

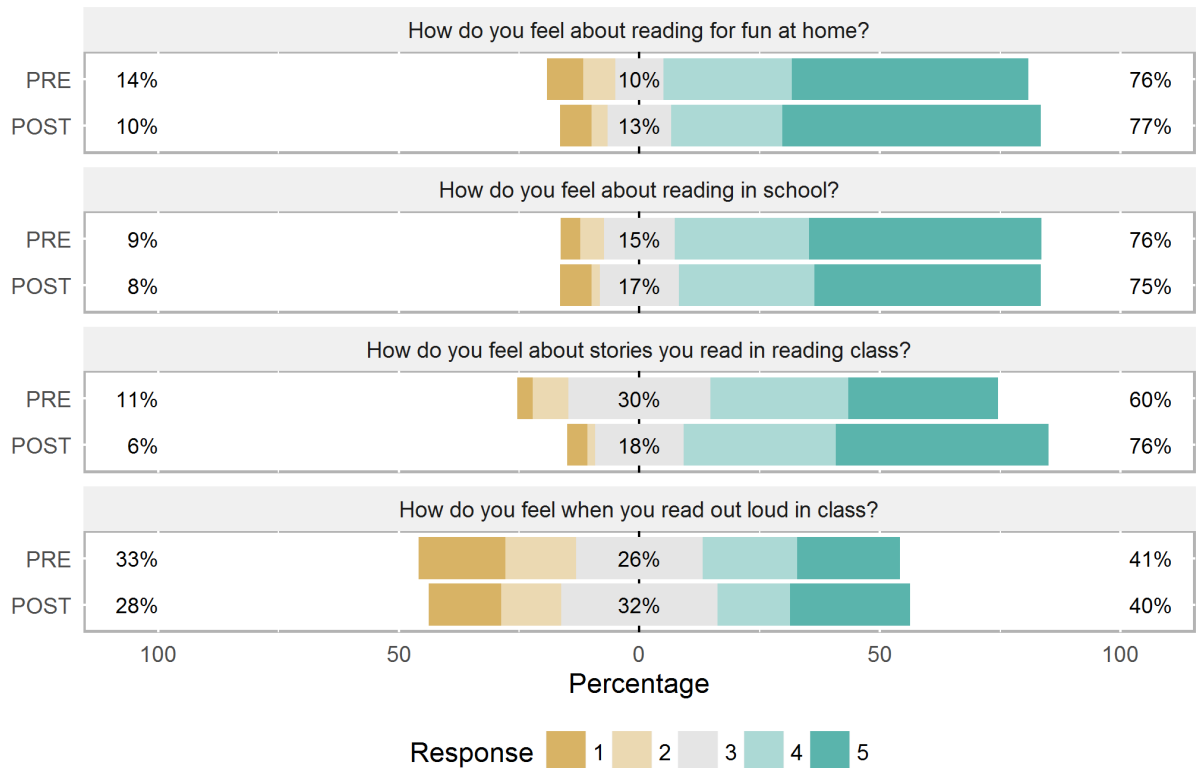
Table 3. Number of students completing attitudinal questions

Grade / Class	K	1 st	2 nd	3 rd	ELL
Number of students	26	26	34	25	11

Overall, it appears that students' self-rated feelings about stories read in school improved over time, Fifty-one out of 122 students had a positive change in feelings about stories read in school, and 22 out of 122 had a negative change; a sign test shows that POST scores were higher for a significant

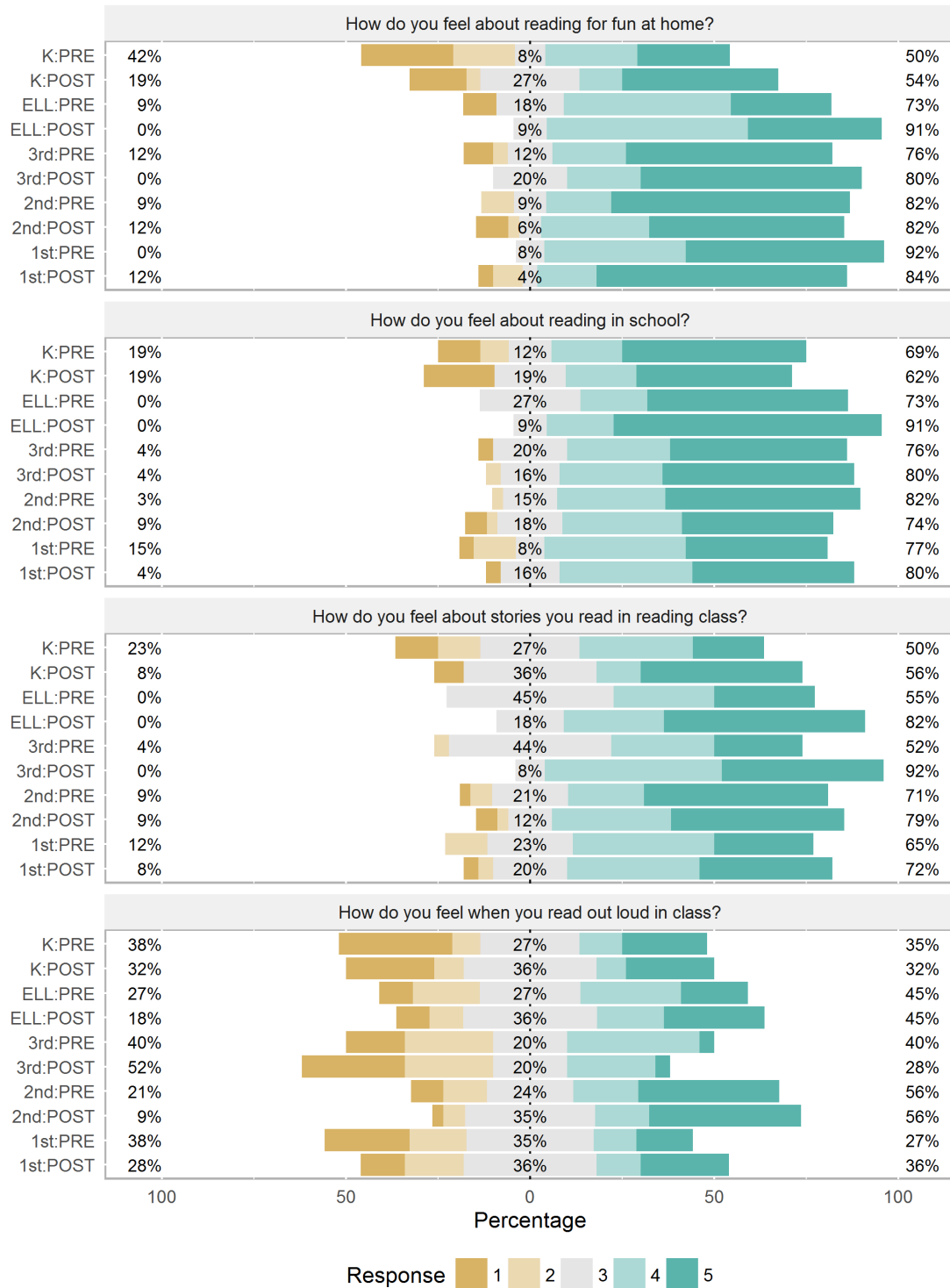
proportion of students ($p=0.000$). Using a Wilcoxon signed rank sum test, we found that feelings about stories read in class were higher after the program ($V=1913$, $p=0.001$). For the other three attitudinal questions, there was a shift in the right direction between PRE and POST, but the shifts were too small to be deemed significant.

Figure 4. PRE and POST responses to reading attitude questions



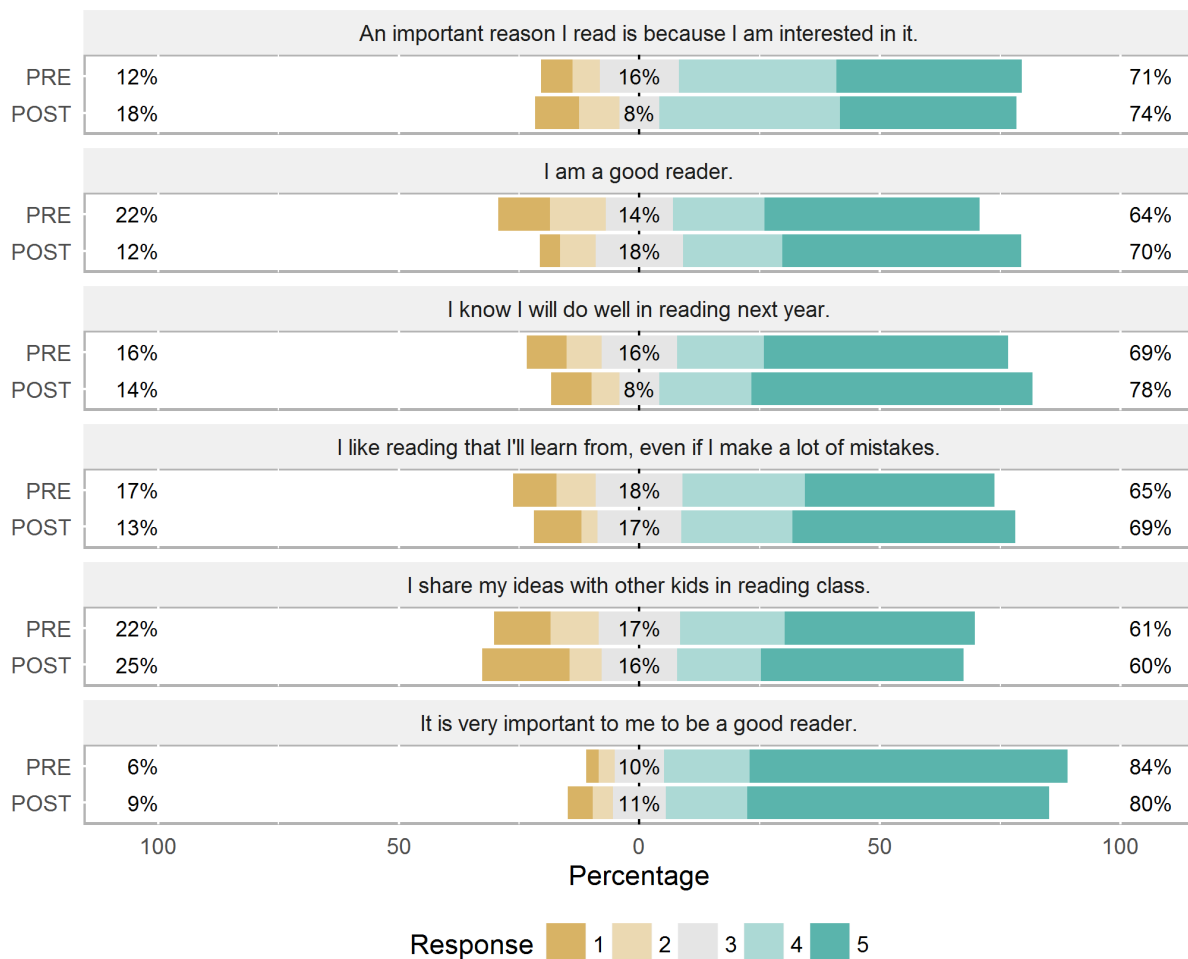
Results for the same questions sorted by class show similar trends. Third graders had a significant difference between PRE and POST responses for “How do you feel about stories you read in reading class?” ($V=118$, $p=0.008$). ELL students consistently showed improved self-ratings. However, these shifts were not found to be significant, due to low student counts. Identifying ELL students in non-ELL classes and comparing their responses at a future point would bolster the argument that ELL students responded positively to the program.

Figure 5. PRE and POST responses to reading attitude questions, by grade



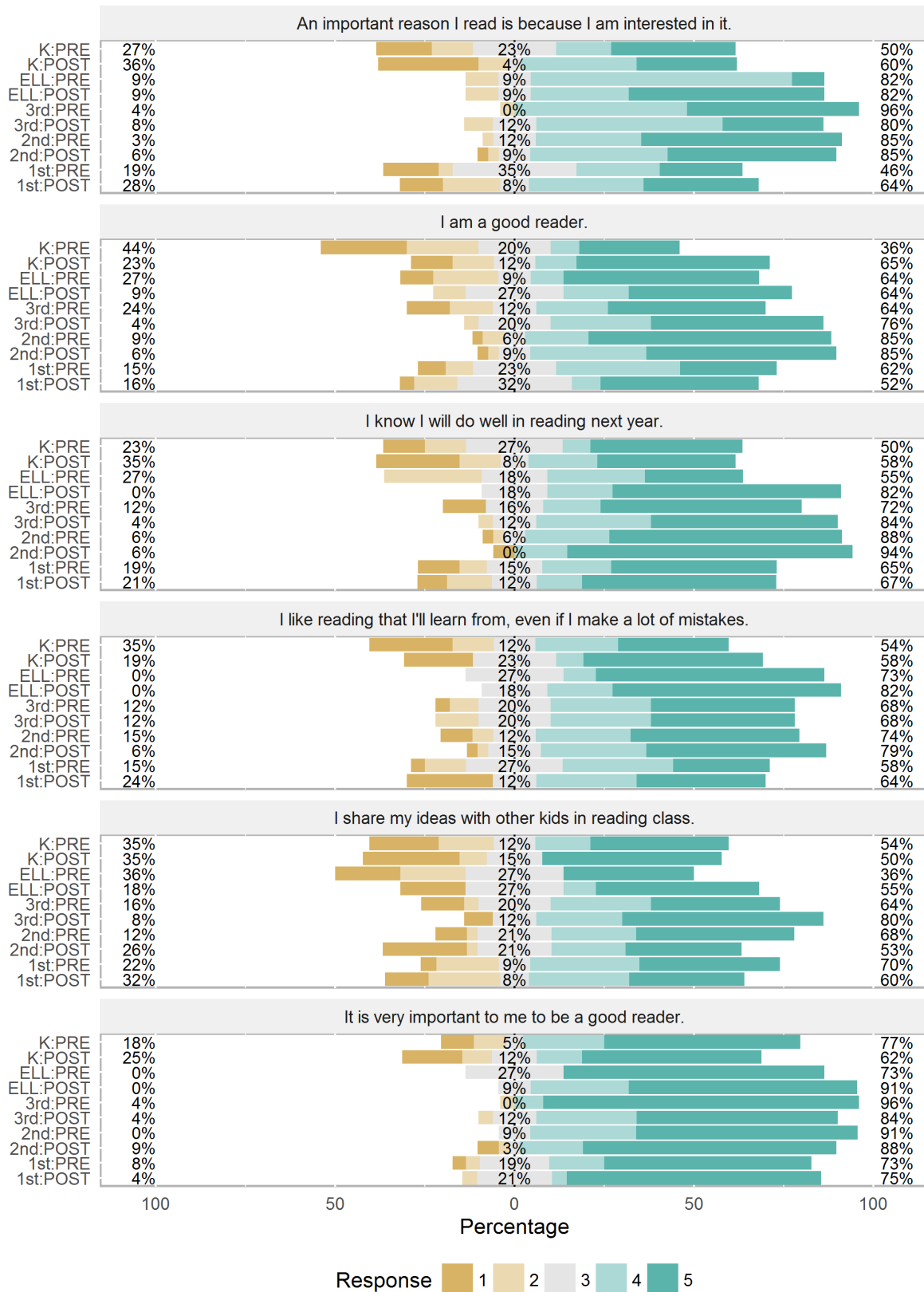
Self-ratings for “I am a good reader” improved ($V=1356$, $p=0.015$). The other self-reflecting questions about reading did not show a significant change from PRE to POST.

Figure 6. PRE and POST responses to reading agreement questions



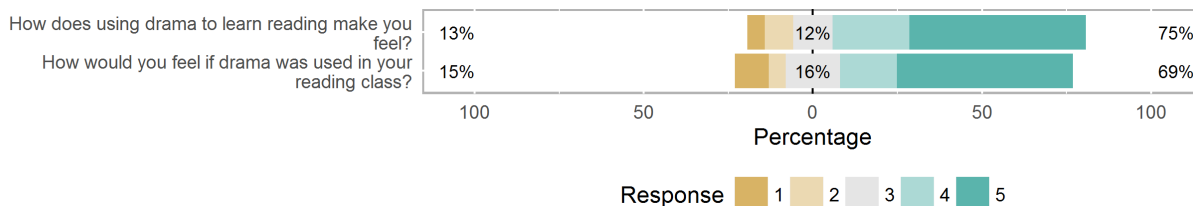
Responses to this set of items varied a great deal by grade. ELL students were more likely to agree that it is important to them to be a good reader after the program ($V=15$, $p=0.037$) and for “I know I will do well in reading next year” ($V=21$, $p=0.034$). Kindergarten students were more likely to agree with “I am a good reader” ($V=126.5$, $p=0.018$).

Figure 7. PRE and POST responses to reading agreement questions, by grade



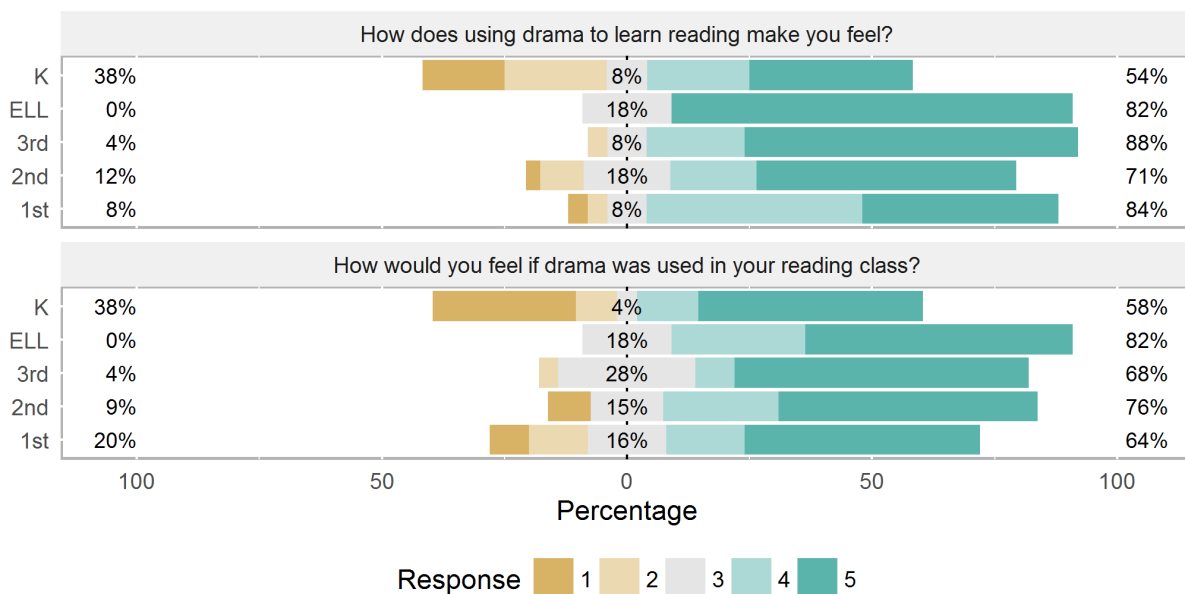
Overall, the group had a positive response to the drama component of the program. Seventy-five percent of students rated a 4 or 5 for “How does using drama to learn reading make you feel?”, and 69% of students rated a 4 or 5 for “How would you feel if drama was used in your reading class?”

Figure 8. POST responses to drama questions



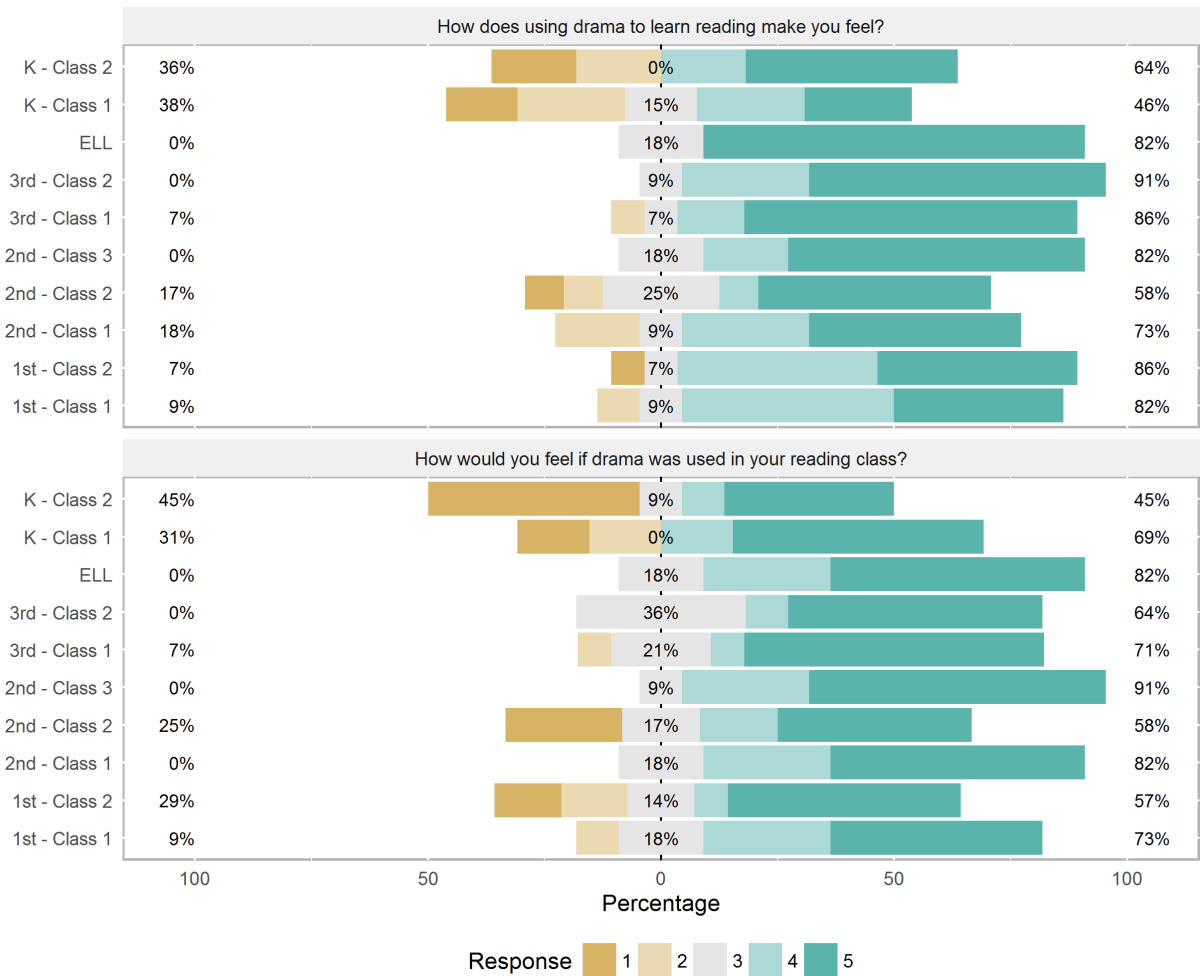
The ELL and 3rd grade students had the most positive reaction to the drama component. The kindergarten classes had the least positive reaction.

Figure 9. PRE and POST responses to drama questions, by grade



There was variation in the appeal of the drama component according to class as well. Looking at the three 2nd grade classes, for example, 58%, 82%, and 91% of students, respectively, rated a 4 or 5 for “How would you feel if drama was used in your reading class?”, and 58%, 73%, and 82% for “How does using drama to learn reading make you feel?”

Figure 10. PRE and POST responses to drama questions, by teacher



3.0. Conclusions

Overall, students showed changes in some DIBELS scores (PSF, Sight words) but not others (NWF, FSF, DORF). ELL students showed score improvements similar to non-ELL students.

Overall, students' self-rated feelings about stories read in school and ratings for the item "I am a good reader" improved over time. The data tentatively suggests that ELL students had the most consistent improvements in attitude ratings; students in the ELL class showed increased attitude ratings after the program. Over two-thirds of students had a positive reaction to the drama component of the program, and the ELL and 3rd grade students had a particularly positive reaction. Attitudes towards reading and the drama component varied a great deal by grade and by class.