Reading Plus: An Analysis of Usage and Impact, 2016-17

1. What is the purpose of this report?

Reading Plus is an online application comprised of a series of modules that bolster word recognition and recall, teach phonemic awareness, phonics, fluency, and support reading comprehension and analysis (Taylor Associates, 2012). Modules that strengthen visual motor control and enhance visual attention are also available to provide additional support to struggling readers (Shelly-Tremblay & Eyer, 2009). Secondary students have access to modules that build independent reading skills and confidence to prepare them for high-stakes tests, academic success, and challenges beyond secondary school. Integrated assessment tools adjust material to students' reading levels (Taylor Associates). The purpose of this paper is to tabulate the usage and analyze the impact of Reading Plus on the M-DCPS students who used it during the 2016-2017 school year.

2. Which populations were targeted for this survey?

The samples for this report are comprised of the 28,731 M-DCPS students in grades 3 to 10 who utilized Reading Plus during the 2016-17 school year; an amount that has decreased by 79%, from 136,338 to 28,731, in the last three years (Urdegar, 2014). The sample for the usage analysis was based on all 2016-17 users, while the sample for the impact analysis was based on those students who used the software for the developer-specified amount of time, 25 hours (J. Pascoe, personal communication, July 14, 2017). A comparison group was defined for the impact analysis by identifying students who did not utilize Reading Plus during the 2016-17 school year and matching them to students in the treatment group on selected student/ school demographic characteristics and geographic proximity. The impact analyses included only students who had valid pre- and post- test scores and excluded students who utilized Reading Plus for less than the recommended time.

3. How were the data for this report collected and analyzed?

Utilization data, obtained from Reading Plus, was received in minutes and converted into hours. Usage patterns were examined using descriptive statistics. Demographic information and school characteristics were obtained from the District's database. Scores from the 2016-17 administration of the Florida Standards Assessment/English Language Arts (FSA/ELA) in Grades 4-10 were used as the posttest for this analysis. The 2015-16 administrations of the FSA/ELA in Grades 3-9 and the Stanford Achievement Test, Tenth Edition (SAT-10) in Grade 2 were used as the pretest. Table 1 displays the pre- and post- test scores utilized for each grade.

Table 1. Reading Achievement Test Administered by Grade

Grade (2017)	Pretest (2016)	Posttest (2017)
3	SAT-10	FSA ELA
4	FSA ELA	FSA ELA
5	FSA ELA	FSA ELA
6	FSA ELA	FSA ELA
7	FSA ELA	FSA ELA
8	FSA ELA	FSA ELA
9	FSA ELA	FSA ELA
10	FSA ELA	FSA ELA

The impact of Reading Plus on student status (scoring level 3 or higher on FSA ELA) was examined through a logistic regression, which explored the impact of Reading Plus (used as specified) on the likelihood of being proficient compared to non-users, considering student demographic variables and pretest scores. The impact on student growth was analyzed through linear regression conducted to evaluate the impact of the program on the posttest scaled scores compared to non-users, once the demographic variables and pretest scores were considered. Interaction terms were also included to examine the extent to which the impact of the program varied with pretest. To estimate the practical significance of the program, the impact of Reading Plus (treatment coefficient) was divided by the largest difference between the state-tabulated achievement-level limits at consecutive grades to conservatively approximate a year of instruction.

4. What is the impact of Reading Plus on Reading Achievement Tests?

Usage

Reading Plus usage was sorted within grade and classified into two groups based on the 50th and 95th percentiles. Table 2 depicts the total number of students by grade and the hours used at each of the percentiles.

Table 2. Reading Plus Usage

Grade	Overall			Recommended (25 Hours)	
	Percentiles				
	n	50	95	n	%
3	908	13.38	46.36	252	28
4	967	14.55	53.22	266	28
5	1,013	14.98	62.19	333	33
6	1,425	22.03	68.07	644	45
7	1,437	19.60	62.91	553	39
8	1,548	20.21	53.32	567	37
9	11,053	15.87	55.07	3,277	30
10	10,380	14.98	52.66	2,986	29
All	28,731	16.15	55.41	8,878	31

As shown in the table, over 28,000 students in Grades 3-10 in the M-DCPS, used Reading Plus during the 2016-2017 school year.

- The largest number of users was found in Grades 9 and 10.
- Half of the students used the software for less than 16.15 hours, and 95% used it for less than 55.41 hours.
- A total of 31% utilized the software for the recommended amount of time, 25 hours or more.

Impact

Table 3 shows the impact of Reading Plus on student's status and growth. Cells labeled "All" indicate grades for which the recommended usage of Reading Plus had a significant impact on all students regardless of their pretest level. Cells labeled "Level 1-Top of Level 2", "Level 1-Top of Level 3" or "1-55 Percentile" indicate that the software had a significant impact for specific students. Cells labeled "None" indicate that there was no impact on those grades. The impact of Reading Plus (treatment coefficient) was divided by the largest difference between the state-tabulated achievement-level limits at consecutive grades to provide an estimate of the program's practical significance.

Proficiency. Table 3 shows Reading Plus to have had a beneficial effect on status for selected groups of students in Grades 4 and 7-9.

- **Grade 4—**Students who utilized Reading Plus for the recommended amount of time and who were between Level 1 and 2 in their pretest were more likely to be proficient than students who did not use the software.

- **Grade 7-9—** Students, at all levels of ability, who utilized Reading Plus for the recommended amount of time were more likely to be proficient than students who did not use the software.

Table 3. Impact of Recommended Reading Plus Usage on Status and Growth

Grade	Status	Growth	
	Ability Level Range	Ability Level Range	Effect Magnitude
3	None	1-55 Percentile	N/A
4	Level 1-Top Level 2	Level 1- Top of Level 3	1.8 Months
5	None	None	None
6	None	None	None
7	All	None	None
8	All	All	3.3 Months
9	All	All	4.6 Months
10	None	Level 1- Top of Level 3	1 Month

Note. Shaded cells refer to significant impact of recommended usage of Reading Plus.

Growth. Table 3 also shows that Reading Plus had a significant positive impact on growth for Grades 3-4, 8, and 9-10 for different ability groups of students. Specifically,

- **Grade 3 -** There was a significant positive impact on students who scored between the 1st and 55th percentile on the SAT-10 while in grade 2.

- **Grade 4 -** There was a significant positive impact, on students whose pretest scores ranged between levels 1 and 3, that equaled or exceeded 1.8 months of growth.

- **Grade 8-9 -** There was a significant positive impact on students, at all levels/ability groups on the pretest, that ranged from 3.3 (Grade 8) to 4.6 (Grade 9) months of growth.

- **Grade 10 -** There was a significant positive impact, on students whose pretest scores ranged between levels 1 and 3, that equaled or exceeded 1 month of growth.

5.   What are the principal conclusions of this report?

Reading Plus continues to be used by students in grades 3 to 10. However, despite the beneficial impact of the software, the number of users in those grades has declined by 79% in the past three years. Overall, the results from this report indicate that using Reading Plus for the developers' specified amount of time has a beneficial impact on the reading achievement of lower performing 3rd, 4th, and 10th graders and on students across ability levels in grade 7-9. The software had a positive impact on both status and growth, with the amount of growth associated with the recommended usage of this supplemental educational software ranging from 1 to 4.6 months. The findings from this report are consistent with previous evaluations of Reading Plus (e.g. Urdegar, 2014) which show that the software had a beneficial impact on achievement scores.

References

Shelley-Tremblay, J., & Eyer, J. (2009). Effect of the Reading Plus program on the reading skills of second graders. *Journal of Behavioral Optometry, 20 (3)*, 1-66.

Taylor Associates (2017, July 7). Recommended Usage of Reading Plus (personal communication with Jeffrey Pascoe).

Urdegar, S.M. (2014). Links to learning applications: An analysis of usage and impact, 2013-14. *Evaluation Matters 4*, 1-5.