



Evaluation Matters

Volume 4, Number 2

September 2014

Steven Urdegar, Ph.D, Director

Links to Learning Applications: *An Analysis of Usage and Impact, 2013-14*

1. What is the purpose of this report?

This report examines the usage and impact of four of the applications that comprise the Links to Learning (L2L) suite, which provides supplemental access to online curriculum content via the student portal in support of student learning beyond the school day. Individualized student learning paths are updated each grading period. Tailored instruction is provided through different applications for reading and mathematics (see Table 1). Applications for science and social studies, though also available, do not have routine assessments with which to gauge their outcomes.

Table 1. Availability of Links to Learning (L2L) Applications

Reading			
Grade	Reading Plus	Successmaker	
3	x		x
4	x		x
5	x		x
6	x		
7	x		
8	x		
9	x		
10	x		
Mathematics			
Grade	Gizmos ^a	Odyssey	Successmaker
3			x
4	x		x
5	x		x
6	x	x	
7	x	x	
8	x	x	
9	x		
10	x		

Note. Practice level is determined, by each application, based on students' prior performance.

^aUsage data were not available or not usable.

2. Which populations were targeted in this report?

The sample for the study included all students in grades 3 through 10 who used any of the identified applications during the 2013-14 school year. Students who were not active at the end of the school year, or did not have valid pre- and post- test scores at consecutive grades, were excluded from the analysis.

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

Usage data were obtained from software vendors, supplemented by student demographic and assessment data. Usage time was not collected by the developer of Gizmos, so no results could be reported on that application. Usage patterns were examined through descriptive statistics. The impact of each application was analyzed by statistical procedures, which adjusted the test scores of students to remove the influence of initial ability and demographic differences, and then compared the adjusted means at different levels of usage.

4. To what extent were L2L and Successmaker used by M-DCPS students?

Large numbers of students used at least one of the applications, but the number of students that used any given application decreased sharply as the hours of use increased. Tables 2 and 3 provide the hours used by the “typical” student (50th percentile of usage) and by a “high-usage” student (95th percentile of usage) at each grade level and overall.

Table 3. Links to Learning
Reading: Annual Hours of Usage

Grade	Reading Plus			Successmaker		
	n	Percentiles		n	Percentiles	
		50	95		50	95
3	19,620	14.60	69.03	260	1.55	10.35
4	18,915	14.72	65.67	231	1.64	9.70
5	19,576	14.02	61.18	247	1.69	7.92
6	17,872	11.74	52.91	--	--	--
7	16,756	9.50	48.16	--	--	--
8	16,531	10.32	43.03	--	--	--
9	14,308	11.18	47.96	--	--	--
10	12,760	11.71	46.62	--	--	--
Total	136,338	12.18	56.90	738	1.64	9.18

- Reading Plus was used by between 13,000 and 20,000 students per grade, or 17,000 students on average, during the 2013-14 school year.
 - ♦ Half of the students used the software for less than 12.18 hours all year, and 5% used it for more than 56.90 hours.
- Successmaker Reading was used by around 250 students per grade during the 2013-14 school year. Although, the number of users was down from about 1,700 per grade during the 2012-13 school year, the amount of usage by the typical student was over four times greater.¹

- Half of the students used the software for fewer than 1.64 hours all year, and 5% of the students used the software for more than 9.18 hours all year.

**Table 3. Links to Learning
Mathematics: Annual Hours of Usage**

Grade	Odyssey			Successmaker		
	n	Percentiles		n	Percentiles	
		50	95		50	95
3	--	--	--	534	0.44	4.35
4	--	--	--	525	0.49	3.70
5	--	--	--	483	0.46	5.22
6	538	1.13	4.78	--	--	--
7	302	2.70	8.16	--	--	--
8	242	2.79	11.73	--	--	--
9	--	--	--	--	--	--
10	--	--	--	--	--	--
Total	1,082	1.48	8.31	1,542	0.46	4.25

- Odyssey Mathematics was used by over 1,000 students in grades 6-8, during the 2013-14 school year. The number of users was down from about 2,800 per grade during the 2012-13 school year.¹
 - Usage increased with grade, especially among the most avid users
 - Half of the students used the software for less than 1.48 hours all year, and 5% of the students used the software for more than 8.31 hours all year.
- Successmaker Mathematics was used by about 500 students per grade during the 2013-14 school year, significantly down from the 3,000 users per grade that used the software during the 2012-13 school year.¹ Half of the students used the software for around 0.46 hours all year, and 5% of the students used the software for more than 4.25 hours all year.

5. What is the impact of the L2L and programs?

Impact was gauged by comparing students' posttest scores at two levels of usage (50th and 95th) percentiles, controlling for their initial ability and demographic differences. Impact is summarized in Table 4 for reading and Table 5 for mathematics. Cells shaded in green represent grades at which an application had a statistically significant impact. Unshaded cells labeled "NONE" represent grades for which an application did not have a statistically significant impact for any students. Cells filled with dashes "--" represent grades in which an application was not available. Cells labeled "ALL" represent grades for which an application has a statistically significant impact for all students. Cells labeled "1-33 PCTILE," or "LEVEL 1," or "LEVELS 1-2" or "LEVELS 2-5," or "LEVELS 3-5," indicate the application only has a statistically significant impact for such students.

- Reading:

Table 4. Links to Learning Applications:

Reading Impact Summary

Grade	Reading Plus	Successmaker
3	1-33 PCTILE	NONE
4	LEVELS 2-5	LEVEL 1
5	LEVELS 3-5	NONE
6	ALL	--
7	ALL	--
8	ALL	--
9	ALL	--
10	ALL	--

Note. Shaded cells represent grades at which an application had a statistically significant impact for the group noted.

- ◆ Reading Plus had significant positive effects for different ability groups of students at different grades
 - Grade 3: students with scores on the pretest in the lowest third of test takers
 - Grade 4: students with scores on the pretest at Level 2 and above
 - Grade 5: students with scores on the pretest at Level 3 and above
 - Grades 6-10: students with any score on the pretest
- ◆ Successmaker had a significant positive effect for fourth graders who scored within Level 1 on the pretest, but did not have an significant impact at any other grade or on any other group of students

- Mathematics:

Table 5. Links to Learning Applications:

Mathematics Impact Summary

Grade	Odyssey Mathematics	Successmaker
3	--	ALL
4	--	NONE
5	--	LEVELS 1-2
6	LEVELS 3-5	--
7	ALL	--
8	NONE	--
9	--	--
10	--	--

Note. Shaded cells represent grades at which an application had a statistically significant impact for the group noted

- ◆ Odyssey Mathematics had a positive effect for sixth grade students who scored at levels 3-5 on the pretest and all seventh grade students regardless of their pretest score, but did not have an effect in eighth grade.

- ◆ Successmaker Mathematics had a significant positive effect on third grade students at all levels of ability and on fifth grade students who scored at Levels 1-2 on the pretest, but did not have an effect on fourth grade students.

6. What are the principal conclusions of this report?

Compared to prior years, all L2L applications other than Reading Plus experienced a sharp decline in the number of students who used them.ⁱ The results for the 2013-14 school year of the Links to Learning suite support those found in earlier years of the program in so far as Reading Plus was found to have a consistent beneficial impact on the achievement of most of the students who used it, although the effects seen in grades 3 -5 were limited to specific groups of students. Odyssey Mathematics and Successmaker Mathematics were also found to be effective only for some grades and for some groups of students.

i

ⁱ Urdegar, S.M. (2013). Links to Learning applications: An analysis of usage and impact, 2012-13. *Evaluation Matters*, 3(3), 1-5.