A DESCRIPTION AND SUMMARY OF THE ALMADINA/READING FOUNDATION DISCOVER READING© PROJECT – YEAR TWO (September, 2014 to June, 2015)

The Reading Foundation, directed by psychologist and educator Dr. Steve Truch, is a private clinic in Calgary that was started in 1990. For the last 25 years, the clinic has offered intensive one-to-one interventions for students of all ages in basic reading/spelling; comprehension; written language and math. The programs used at the clinic were all written by Dr. Truch and his staff and are based on research findings for each of the four core literacy areas. The Discover Reading© program was written for teaching basic reading and spelling skills; the Discover Meaning© program was developed to teach comprehension; Discover Math™ for math and Discover Writing© for written expression. In each of the programs, the teaching strategies and processes taught to the students are ones supported by extensive research. For example, The Report of the National Reading Panel, released in 2000, (the most extensive review of reading research ever undertaken) recommended several very specific teaching methods for the teaching of basic reading and spelling skills. All the teaching methods recommended by the Panel (as well as other research-based strategies) are incorporated into the Discover Reading (DR) program, which is the subject of this report.

The one-to-one delivery method used when students come to the clinic for individual help makes the DR program difficult to implement in the classroom. However, in the last two years, The Reading Foundation began programming the DR program into a SMART Board format so that DR could be used by Language Arts teachers as a program for all students.

Almadina Charter School aims at providing a quality education to English language learners. Students from over 50 different countries of origin attend this school, which currently has classes from Kindergarten to grade 9, inclusive. The school will expand to cover all high school grades in the near future. Total current enrollment is close to 900 students within two campuses. Students from Kindergarten to grade 3, inclusive, attend the Mountain View campus and those from grade 4 to 9 attend the Ogden campus. There are over 50 full-time teachers at both campuses and several Educational Assistants (EAs).

Part of the mandate of the Almadina Charter includes forming partnerships and conducting research with appropriate agencies. As a result, an initial, small pilot project was introduced in the 2012-2013 school year using DR as a one-to-one intervention for students who were weak in reading. That project was supervised by Merton Palmer, an independent consultant hired by Almadina to oversee the project. The Pre and Post-testing that was conducted was encouraging, though limited in scope. As a result, the Almadina Board approved an expansion of the project to cover the next three school years.

For 2013-2014, the SMART Board version of the DR program was introduced into several elementary classrooms at Almadina and was also used as a remedial program for small group and individual intervention with students who were struggling with reading. A detailed report with several layers of statistical analyses was written and presented to the Board.

For this school year, 2014-2015, the following activities were carried out as part of Year Two of the project:

1. Twenty-two teachers and EAs were provided with four days of training in the DR program near the beginning of the school year by experienced trainers from The Reading Foundation. Whereas last year's project involved one ECS teacher and selected teachers from grades 1 to 3, this year's project involved all three ECS teachers and selected teachers from grades 1 to 7, inclusive. No teachers in grade 8 or 9 were trained in DR. However, some students in grade 8 still received one-to-one assistance.

2. Most students who received DR last year were tested again this year. For the other students, the Post-test scores from the 2013-2014 school year became the Pre-test scores for this year's analysis. As well, selected students from both Almadina campuses (those who were not Post-tested last year or who were new to the school) were administered a brief screening assessment in early September by Dr. Truch, two of his staff and trained EAs from Almadina. The results were scored and tabulated, and students were selected for remedial work in DR based on the screening results and teacher input.

The EAs were first trained in the testing procedures for the TOWRE and the other tests used in this project. Analysis of the Pre-test and the Post-test data showed no significant differences among testers, indicating a high level of inter-rater reliability. Standard scores were calculated by Dr. Truch and two staff members from The Reading Foundation.

3. Teachers who were trained in SMART Board DR started implementing the program with all students in their classes. Simultaneously, those students who required individual intervention received it from the trained EAs at both campuses. Based on the cut-off scores from the testing, approximately 5% of the entire student population at Almadina required individual remedial work (down from 7% the prior year) and most of those students received it. (In a few cases, students received remedial help in small groups of 2 or 3.) Additionally, some students at the Ogden campus had SMART Board DR incorporated into their English Language Option (ELO) classes. Thus, some students at the Ogden campus had both classroom SMART Board DR in their ELO classes and one-to-one DR remedial work. Students in Mountain View received one-to-one assistance if they needed it (grades 1 to 3) and some classrooms also used SMART Board DR in their classrooms. As mentioned above, some small-group interventions were provided at this campus, as well.

4. Teachers and trained EAs received regular consulting support and feedback from an experienced member of The Reading Foundation. Almadina staff were guided as to the appropriate use of the program in both the regular class and with the individual students. This guidance included everything from modeling the lessons in the DR program for classroom teachers and EAs to demonstrations on how to "trouble-shoot" for students receiving the one-to-one assistance. There were many challenges for this portion of the project from a scheduling point of view and other sources. These were dealt with as expeditiously as possible so, in the end, most students received at least some DR exposure.

5. Post-testing occurred in April, 2015, at the Mountain View campus for the three kindergarten classes. The results were tabulated and a separate report was presented to the Superintendent of Schools. Students at the kindergarten level this year, as with last year, showed strong gains as a result of their exposure to the DR program (Kindergarten Level). Because of their experience with the program from the prior year, all three teachers received only minimal consulting support from the Reading Foundation.

   As there will be some teacher turnover at the kindergarten level for next school year, training one or perhaps two new kindergarten teachers in DR will be required.

6. All available students at both Mountain View and Ogden have now been Post-tested and the results are the subject of this report. For the last year of this project (2015-2016), any new classroom teachers at Almadina who need it will be trained in the SMART Board version of the Discover Reading program and the project will be carried on in large part as stated in the original proposal, but modified, as it was this school year, at both campuses based on experiences gained from the previous years.

As it stands, the partnership project between Almadina and The Reading Foundation is both unique and comprehensive. It follows the "Response to Intervention" (RTI) model advocated by reading experts (and enshrined in law in the United States). The RTI model ensures that, first, **all** students are taught to read in the regular classroom using a strong research-based program. Next, **all** students are assessed to determine their reading status and finally, from there, **all** students who need additional support and intervention for reading receive it in a timely fashion with the results continuously monitored and evaluated. This model is difficult to implement, but many school districts in the United States have made the attempt. Canadian schools, for the most part, provide some form of remedial assistance to struggling readers, but typically not in the systematic and rigorous fashion suggested by the RTI model.

Achieving the number of instructional hours in SMART Board DR in each classroom was challenging both years. The minimum hours recommended per classroom was 80 over the course of the school year. This target was achieved for several students at the Ogden campus if they received both the large-group ELO classroom instruction using DR and the one-to-one intervention.

TESTS USED

The assessment tools used for this project were limited given that screening involved nearly 900 students and a very stringent budget. The tests used this year were the same as last year, with one exception. The tests were:

1. The Test of Word Reading Efficiency or TOWRE (Torgesen, J.K.; Wagner, R.K. and Rashotte, C.A, 1999). This test has two subtests: (1) one where students read a list of real words under timed conditions and (2) one where students read a list of non-words under timed conditions. This is a well-standardized test that is useful in research projects as the scores on the TOWRE correlate well with overall reading, including comprehension. It has been used as a tool to (a) monitor student progress over time and (b) identify students who require extra assistance for their reading development. The TOWRE was used both ways in this project. The test was normed on American students. The average standard score last year for the 877 Almadina students was close to 100, suggesting no difference in the two populations (American vs. Almadina). This year's standard scores were greater than 100 for both portions of the TOWRE test, suggesting overall reading growth for the students. A standard score of 100 on this test is the 50^{th} percentile and standard scores from 90 (percentile 25) to 110 (percentile 74) are considered to be in the average range. It is also possible to provide grade-equivalent scores, and these are provided in the classroom printouts. But for statistical analysis for this project, standard scores were primarily used. In some instances, it was more appropriate to analyze raw scores and when that occurred, an ^ is used in the Table to indicate that this was the case.

   All students who were Pre-tested in September who fell below a standard score of 90 on *both* portions of the TOWRE were provided with one-to-one remedial assistance in DR with an EA who had been trained in the program.

2. An informal measure of "code knowledge." Code knowledge is the ability to orally produce the appropriate sound for the letter or combination of letters presented to the student. For example, if the student is shown the letter "t," he should be able to say /t/. A total of 50 letters and letter combinations were presented to the students. For older students, an additional test of suffix knowledge was also used. Students were asked to produce the sounds for up to 11 different suffix endings, depending on grade level. The code knowledge score was calculated as a percentage, except for the suffix endings, which were calculated as number correct out of 11. Four of the basic vowel sounds were extracted from the overall scores and calculated as a separate entity and reported as a score out of 4.

   Code knowledge is an important component of efficient word identification and spelling. As recommended in the Report of the National Reading Panel, the DR program provides students with explicit instruction in the "code," and in different teaching sequences, thus allowing for a high degree of individualizing. Students in lower grades are typically taught less complex letter/sound combinations than students in upper grades.

The results for the measures used for this report were analyzed and tabulated in several ways, each of which will be described and presented sequentially, first for the school as a whole, then campus by campus and finally, grade by grade.

Analysis of variance was used to determine if results were significant or not and a probability level of $p<0.05$ was set as the minimum for each variable. If a result is significant at the $p<0.05$ level, then it means that the probability of getting the differences in average scores between the Pre and the Post-test is just 5 in 100. That is a low probability and therefore considered "statistically significant." In other words, the results can likely be attributed to the DR teaching itself and not to other variables such as "maturity" or "regular classroom teaching". This project is, however, "quasi-experimental" in nature. There were some control groups of classrooms where teachers used SMART Board DR were compared to a "no-treatment" condition of regular classroom instruction. However, there was no random assignment of students to treatment or no treatment conditions and no third control to test DR against other programs that may have produced similar results.
In all cases, *parametric t-tests* were used to compare the Pre and Post-test scores. Parametric analysis is very powerful and valid when scores are normally distributed, which was the case for the majority of the Almadina data.

Rationale for Tests Used and Test Results

The tests used for this project were chosen to be as parsimonious as possible and still provide some meaningful data. The tests used in this project are part of the battery of tests used at The Reading Foundation clinic whenever a student is referred for an individual assessment.

The tests are chosen to reflect current scientific knowledge on how students best learn how to read. According to the results of The Report of the National Reading Panel, which is a summary of the most extensive review of reading research ever undertaken, students must be taught the following skills:

1. Phonemic processing
2. Letter/sound connections
3. Decoding and spelling words
4. Reading fluency
5. Comprehension

In the 2012-2013 pilot project, the phonemic processing skills of segmenting and blending were tested using the informal measurements from the DR program. The Pre and Post-test results clearly indicated positive changes for students in these variables, so they were not assessed as part of the Year One scores, nor again for Year Two, this year's project.

Letter and sound connections were not assessed in the pilot project, so they were included both in Year One and Year Two. Decoding using the Woodcock Word Attack subtest was measured in the pilot project and again for Year One and Year Two, but using a different and well-standardized measurement tool (the TOWRE). Reading fluency was not measured in the pilot project, but it was measured in part using the two subtests from the TOWRE for both Year One and Year Two. Finally, overall reading comprehension was not measured in any year because of the practical difficulties in doing so with the entire population of students.

The tests and the sequence presented above reflect the teaching sequence of the DR program. Interim assessments at the clinic for students on some of these tests typically occur after 20 and 40 hours of one-to-one instruction. Gains after 20 and 40 hours are typically seen sequentially. First, the phonemic variables change rapidly and next, the student's knowledge of letters and sounds changes. Finally, gains in word identification, spelling and overall fluency occur last (though not always so). Comprehension changes typically occur for students but do not surface until the Post-test, which takes place after a minimum of 80 hours of remedial work.

Measuring student growth in reading is a complex task, made more difficult in this project because of its quasi-experimental nature. Positive changes on variables occurred, often with no instruction in DR. The teaching methods of teachers *not* using DR were never observed. It is possible that all the teachers were using appropriate methods, or they may have been over-using "sight" words methods. While asking students to memorize words by sight can produce gains for students on test scores, it may not be the best way to teach students how to read since the essential element of sounding out a word using "orthographic mapping" (i.e., learning the relationship of a sound to a letter or letter combination) is bypassed. In the end, the best way to learn to read the English language's words (there are now over 1,000,000 words in the Oxford English Dictionary, which is twice that of any other language) is to learn how 26 visual symbols can be used to represent the 44 sounds of English. This is a very powerful alphabet system, so "learning the code" is the best long-term way for student to learn to read any of those 1,000,000 words. Additionally, English is one of the few languages in which the written word provides some clues as to the meaning of the word. Knowledge of prefixes, suffixes and other aspects of English morphology help students to at least get some clues as to the possible meaning of the word. Such in-depth advanced code knowledge is not typically taught in schools, but it has an important and appropriate place, particularly in upper elementary and junior high school, to further develop students' overall reading, both for decoding and comprehension.
The pilot project clearly showed that the DR program develops phonemic awareness and basic decoding skills. Last year's project clearly shows that "code knowledge" changes with instruction in DR, more than when such direct instruction is not present. Those results are consistent with clinical experience for the students instructed in DR. The remaining

variables used in the test battery also show changes, with and without DR, but in many (but not all) cases, the results are greater when DR is used.

This year and last year the project had a form of control group in that some classrooms had teachers using DR and some did not. However, what was not controlled, or possible to know, was the instructional methods used by teachers not trained in DR. As mentioned previously, there may have been a preponderance of sheer memorization in those classes that could have produced results. This is not to fault the teachers, but simply a confounding variable in this natural-setting project.

RESULTS FOR ALMADINA CAMPUS AS A WHOLE

The first analysis of the data was undertaken with the following rationale: Almadina teachers are experienced and have used similar teaching methods in their classrooms over the years. There is typically also very little staff turnover. It would, therefore, seem reasonable to conclude that no radically new instructional element was used in most classrooms this year, apart from DR, in those classrooms using SMART Board DR and some of the students receiving one-to-one remedial assistance in DR.

It is therefore reasonable to speculate that if direct instruction makes a difference to overall reading, then, the Post-test results for the school as a whole could change in a positive direction. Therefore, we compared the Pre and Post-test scores for the entire population of students on the two standardized subtests of the TOWRE for Year One and Year Two.

Here are the results:

ALMADINA CAMPUS AS A WHOLE
YEAR ONE (2013-2014); YEAR TWO (2014-2015)

	Year One (N = 877)		Year Two (N = 808)	
	Pre	Post	Pre	Post
TOWRE Real Word	102.43	108.47***	106.18	109.84***
TOWRE Nonsense Word	104.49	108.68***	106.90	109.58***

*** = $p<0.001$

The difference between the Pre and Post-test averages is highly significant ($p<0.001$) both years, and would occur by chance less than one in 1,000 times. It is possible, then, that the addition of the DR program into several classrooms, as well as providing remedial assistance in DR to students who needed it, made a positive difference to the *overall* outcomes in the school. The change in percentiles from Pre to Post-testing was percentile 55 to percentile 70, which is another way to illustrate the nature of the positive shift in scores. It is apparent that a positive overall change in reading scores occurred for the school as a whole on these two important variables, but it is not possible to be definitive about *why* it occurred.

We next compared *all* the students in Mountain View who received DR versus those who did not, with the following results:

MOUNTAIN VIEW YEAR ONE AND TWO OVERALL RESULTS

YEAR ONE DR vs. No DR

	DR (N = 108) Avg. Hrs. = 68.16		No DR (N = 238) Avg. Hrs. = NA	
	Pre	Post	Pre	Post
Code Knowledge	45.91	72.28***	61.76	71.29***
Basic Vowels (x/4)	2.59	3.49***	2.96	3.12(ns)
TOWRE Real Word	97.06	109.29***	102.17	109.96***
Percentile	42	73	55	74
TOWRE Nonsense	101.17	109.37***	102.48	108.61***
Percentile	52	73	55	73

(ns) = not significant
NA = Not Applicable wherever noted in the remainder of the tables

The average number of DR hours (classroom and ELO combined in Year One) was 68.16, which was short of the minimum of 80 hours recommended for classroom alone.

All students in both groups made significant gains over the course of the school year. The starting point for the DR students was typically lower, but they either surpassed or matched the Post-test scores of the non-DR group, suggesting that DR made the difference.

YEAR TWO DR vs. No DR

	DR (N = 225) Avg. Hrs. = 38.00		No DR (N = 100) Avg. Hrs. = NA	
	Pre	Post	Pre	Post
Code Knowledge	51.51	69.79***	71.40	73.62(ns)
Basic Vowels (x/4)	2.82	3.23***	3.05	2.52(declined)
TOWRE Real Word	99.00	109.31***	110.88	114.21***
Percentile	48	73	77	82
TOWRE Nonsense	101.85	107.57***	108.72	109.68***^
Percentile	55	70	73	74

^ = analysis on raw scores

Students in Year Two at Mountain View who received DR, even with just a limited number of hours (about half of what they received in Year One), made stronger gains than students who did not receive DR.

YEAR TWO BREAKDOWN AT MOUNTAIN VIEW BY DELIVERY MODE

	Classroom (N = 194) Avg. Hrs. = 34.88		Classroom & 1-to-1 (N = 17) Avg. Hrs. = 69.06		1-to-1 (N = 14) Avg. Hrs. = 50.36	
	Pre	Post	Pre	Post	Pre	Post
Code Knowledge	54.00	69.38 ***	34.24	67.65 ***	50.93	82.57***
Basic Vowels (x/4)	2.93	3.16*	1.94	3.82***	2.93	3.36(ns)
TOWRE Real Word	101.19	111.77***	89.47	102.59***	89.00	95.21***
Percentile	52	79	23	58	23	36
TOWRE Nonsense	103.87	109.73***	93.59	100.47*	89.50	93.36*
Percentile	61	74	35	50	25	32

* = $p<0.05$

Next, we analyze all the Ogden students for year two.

ODGEN YEAR TWO OVERALL RESULTS

STUDENTS WHO RECEIVED DR IN ELO AND/OR ONE-TO-ONE PRE AND POST-TEST SCORES (YEAR TWO)

	ELO (N = 62) Avg. Hrs. = 65.39		ELO & 1-to-1 (N = 26) Avg. Hrs. = 115.88		1-to-1 (N = 6) Avg. Hrs. = 70.17	
	Pre	Post	Pre	Post	Pre	Post
Code Knowledge	73.52	83.97***	67.62	86.38***	71.33	92.67*
Suffix Endings (x/11)	2.84	3.50***	2.85	3.85***	0.83	6.17***
Basic Vowels (x/4)	2.74	3.22*	1.31	3.42***	3.17	4.00(ns)
TOWRE Real Word	103.98	104.68***^	85.00	88.81***	86.67	89.67*
Percentile	61	64	16	23	19	25
TOWRE Nonsense	102.29	104.68*	80.96	88.65***	83.83	90.83***
Percentile	55	64	10	23	14	27

Keeping track of instructional hours teacher by teacher was a challenge in itself, so the reported hours should be seen as approximations of the reality. In addition, the standard score on the TOWRE Real Word portion was >100 for many of the DR students. The selection of students and assignment to the DR ELO classes did not always rely on low scores for both portions of the TOWRE, as was the case for students selected for one-to-one assistance.

We next examine the grade by grade results for students at each campus.

MOUNTAIN VIEW SCHOOL

GRADE 1 STUDENTS YEAR TWO (N = 110)

	Classroom (N = 102) Avg. Hrs. = 34.26		Classroom & 1-to-1 (N = 8) Avg. Hrs. = 55.00		1-to-1 (N = 0) Avg. Hrs. = NA	
	Pre	Post	Pre	Post	Pre	Post
Code Knowledge	43.35	64.94***	22.75	57.75***	--	--
Basic Vowels (x/4)	2.67	3.35***	1.63	3.88***	--	--
TOWRE Real Word	96.93	109.62***	90.75	99.88*	--	--
Percentile	42	74	27	50	--	--
TOWRE Nonsense	103.50	109.41***	98.75	99.88 *^	--	--
Percentile	58	73	48	50	--	--

No students in grade 1 received just one-to-one DR assistance.

GRADE 2 STUDENTS YEAR TWO (N = 92)

	Classroom (N = 76) Avg. Hrs. = 32.30		Classroom & 1-to-1 (N = 8) Avg. Hrs. = 77.88		1-to-1 (N = 8) Avg. Hrs. = 44.88	
	Pre	Post	Pre	Post	Pre	Post
Code Knowledge	63.95	73.89***	43.75	76.50***	45.38	79.75***
Basic Vowels (x/4)	3.29	2.95(declined)	2.38	3.75*	2.88	3.38(ns)
TOWRE Real Word	105.18	114.25***	87.63	104.38***	88.75	95.00*
Percentile	64	82	21	61	23	36
TOWRE Nonsense	103.99	110.49***	89.13	101.88*	91.13	95.75***^
Percentile	58	77	23	55	27	39

GRADE 3 STUDENTS YEAR TWO (N = 23)

	Classroom (N = 16) Avg. Hrs. = 51.00		Classroom & 1-to-1 (N = 1) Avg. Hrs. = 111.00		1-to-1 (N = 6) Avg. Hrs. = 57.67	
	Pre	Post	Pre	Post	Pre	Post
Code Knowledge	74.63	76.25(ns)	50	76	58.33	86.33***
Suffix Endings (x/2)	0.75	0.94(ns)	0	2	0.17	0.83(ns)
Basic Vowels (x/4)	2.94	3.00(ns)	1	4	3.00	3.33(ns)
TOWRE Real Word	109.31	113.75***	94	110	89.33	95.50*
Percentile	73	82	35	74	23	39
TOWRE Nonsense	105.69	108.13***^	88	94	87.33	90.17*^
Percentile	66	70	21	35	19	25

Only one grade 3 teacher used DR in the classroom.

ECS STUDENTS – Results were presented in a separate report for Year Two.

OGDEN SCHOOL

Students at this campus received SMART Board DR in their ELO classes or one-to-one DR through an EA, or both. The total number of DR hours, regardless of their source, was combined for these analyses. All students were selected because of low initial scores on the screening Pre-tests, typically as a combination of weaknesses in one or more of the TOWRE subtests and/or Code Knowledge. However, as a group, their initial TOWRE Real Word scores were still strong and >100.

GRADE 4 STUDENTS YEAR TWO (N = 22)

	ELO (N = 14) Avg. Hrs. = 68.00		ELO & 1-to-1 (N = 8) Avg. Hrs. = 119.00		1-to-1 (N = 0) Avg. Hrs. = NA	
	Pre	Post	Pre	Post	Pre	Post
Code Knowledge	70.71	78.00*	65.75	80.75***	--	--
Suffix Endings (x/4)	0.86	1.57*	0.5	1.25(ns)	--	--
Basic Vowels (x/4)	2.57	3.00(ns)	3.13	4.00*	--	--
TOWRE Real Word	105.57	105.00***^	78.75	82.63***^	--	--
Percentile	66	64	8	13	--	--
TOWRE Nonsense Percentile	96.71	99.79***^	82.13	87.38*	--	--

The standard scores on the TOWRE Real Word test declined for the ELO only group, but their raw score Pre and Post scores showed a significant increase.

No students in grade 4 received just one-to-one DR assistance.

GRADE 5 STUDENTS YEAR TWO (N = 13)

	ELO (N = 9) Avg. Hrs. = 67.00		ELO & 1-to-1 (N = 4) Avg. Hrs. = 111.75		1-to-1 (N = 0) Avg. Hrs = NA	
	Pre	Post	Pre	Post	Pre	Post
Code Knowledge	69.56	87.11***	64.00	83.00*	--	--
Suffix Endings (x/6)	2.00	2.67(ns)	0.50	3.25(ns)	--	--
Basic Vowels (x/4)	2.11	3.22*	2.75	3.5(ns)	--	--
TOWRE Real Word	99.33	106.67***^	90.00	92.50***^	--	--
Percentile	48	67	25	32	--	--
TOWRE Nonsense Percentile	101.44 52	106.11* 66	83.75 14	91.50(ns) 29	-- --	-- --

No students in grade 5 received just one-to-one DR assistance.

GRADE 6 STUDENTS YEAR TWO (N = 19)

	ELO (N = 11) Avg. Hrs. = 78.00		ELO & 1-to-1 (N = 6) Avg. Hrs. = 129.17		1-to-1 (N = 2) Avg. Hrs. = 68.00	
	Pre	Post	Pre	Post	Pre	Post
Code Knowledge	78.73	83.64(ns)	69.00	92.00*	73.00	95.00(ns)
Suffix Endings (x/6)	3.55	3.73(ns)	1.17	4.50***	0.00	6.00$
Basic Vowels (x/4)	2.73	3.27(ns)	2.83	3.83*	3.50	4.00(ns)
TOWRE Real Word	107.64	109.45***^	91.83	98.17*	88.50	93.50*
Percentile	70	73	29	48	23	35
TOWRE Nonsense	107.55	111.09*	79.83	92.50*	89.00	95.00$
Percentile	70	77	9	32	23	36

$ = Data could not be analyzed as it was not normally distributed and/or the sample size was too small. Gains however, may be evident from visual inspection.

GRADE 7 STUDENTS YEAR TWO (N = 21)

	ELO (N = 15) Avg. Hrs. = 60		ELO & 1-to-1 (N = 3) Avg. Hrs. = 105.33		1-to-1 (N = 3) Avg. Hrs. = 78.33	
	Pre	Post	Pre	Post	Pre	Post
Code Knowledge	75.47	85.20***	89.33	85.33(declined)	66.00	92.67(ns)
Suffix Endings (x/7)	3.13	3.80*	2.33	3.00(ns)	0.66	6.67***
Basic Vowels (x/4)	3.00	3.40(ns)	4.00	4.00$	2.67	4.00(ns)
TOWRE Real Word	104.53	106.07***^	85.33	83.33(declined)	81.33	84.00(ns)
Percentile	64	66	16	13	10	14
TOWRE Nonsense	106.53	106.87*^	85.00	81.33(declined)	74.00	83.33*
Percentile	67	67	16	10	4	13

Significant gains on all variables (except for Suffix Endings and Basic Vowels) were made from Pre to Post-test by the ELO DR students.

The minimum Code Knowledge score for grade 7 should be 90% with some furthering knowledge of Suffix Endings.

There is definitely a case to be made for using the DR program at the grade 7 level to enhance the student's foundation for subsequent reading and spelling.

GRADE 8 STUDENTS YEAR TWO (N = 18)

	ELO (N = 13) Avg. Hrs. = 57.00		ELO & 1-to-1 (N = 5) Avg. Hrs. = 104.60		1-to-1 (N = 0) Avg. Hrs. = NA	
	Pre	Post	Pre	Post	Pre	Post
Code Knowledge	72.62	87.08*	58.80	92.00*	--	--
Suffix Endings (x/9)	4.62	5.62(ns)	2.80	6.00*	--	--
Basic Vowels (x/4)	3.08	3.23(ns)	1.80	3.80*	--	--
TOWRE Real Word	101.77	100.92*^	82.60	87.80***	--	--
Percentile	55	52	13	21	--	--
TOWRE Nonsense	99.54	105.62*	75.80	88.20***	--	--
Percentile	50	66	6	21	--	--

No students in grade 8 received just one-to-one DR assistance.

OVERALL PROJECT IMPRESSIONS FOR YEAR TWO

The project was again very successful in terms of outcomes and well received by the kindergarten teachers in Year Two. (The kindergarten scores are part of a separate report.)

The one-to-one instruction in DR for students was highly successful again this year as it was last year and in the pilot project year.

The challenge of providing sufficient instructional time in DR in the classrooms remained. At the Ogden campus, this was managed effectively by using DR as a primary instructional tool in the ELO option classes. Students were placed in those classes because of weak scores on a number of the testing variables. Post-test scores were encouraging for those ELO students.

RECOMMENDATIONS FOR YEAR THREE

1. New kindergarten teachers need training and consultation time for DR implementation in their classrooms.
2. Selection of students for one-to-one intervention should occur as in previous years.
3. Instruction at the Ogden campus using DR in the ELO classes should continue as in Year Two.
4. Use of DR in Mountain View classrooms should be discussed and decided upon early in the school year in an attempt to maximize DR instructional hours for students in Year Three, the final year of this special project.

LIMITATIONS OF THIS STUDY

1. This study is quasi-experimental in nature as it occurred in a natural school setting and was intended to meet the needs of Almadina School's charter mandate. It was not intended to be a formal scientific study as, to accomplish that, a much larger budget and a strong experimental design, would have been necessary. Nevertheless, some valuable and interesting data collection and analysis was still possible.
2. There were some confounding variables in collecting the Suffix Ending data with students. Because of this, analysis of Suffix Endings scores was limited in scope.

REFERENCES

1. Torgesen, J.K., Wagner, R.K. and Rashotte, C.A. (1999) Test of Word Reading Efficiency (TOWRE). Pro-Ed Publications, Austin, Texas.