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Assessment of the Impact of Reading Mastery Implementation on a Group of First to Third Grade Students Receiving Special Education Services

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ASSESSMENT OF THE IMPACT OF READING MASTERY IMPLEMENTATION ON A GROUP OF FIRST- TO THIRD-GRADE STUDENTS RECEIVING SPECIAL EDUCATION SERVICES

by

Christopher M. Jones

A creative project submitted in partial fulfillment
of the requirements for the degree

of

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in

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(With Administrative Supervisory License)

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ABSTRACT

Assessment of The Impact of Reading Mastery Implementation

On A Group of 1st To 3rd Grade Students Receiving

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Utah State University, 2016

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Reading Mastery was instituted with a group of first to third grade students receiving special education services as a supplemental reading intervention to regular education reading instruction. The students were enrolled in a kindergarten through eighth grade rural, Title I school with a high Native American population. Student performance was assessed with the easyCBM reading measure and the Fountas and Pinnell Benchmark Assessment System (Field Study, 2016).

Results showed that students who received the Reading Mastery intervention performed with mixed results on the easyCBM measure not making clear gains in all areas. The Fountas and Pinnell measure showed gains commensurate with expectations for students at the assigned grade levels. Unfortunately, the results of this project were marred by problems of implementation that precluded the ability to determine if Reading Mastery did positively impact student performance.

Recommendations for future implementation, adjustments to measurements, and data collection are discussed. A train the trainer model is recommended and briefly discussed as a remedy to the implementation problems. New questions related to the effectiveness of Reading Mastery with Native population of students were made in light of the performance and findings of this project.

(51 pages)

PUBLIC ABSTRACT

Assessment of The Impact of Reading Mastery Implementation On A Group of 1st To 3rd Grade Students Receiving Special Education Services

Christopher M. Jones

The imperative to ensure that students are reading on grade level continues to demand rigorous research of reading program implementation at the classroom, school, district and state levels. Research-based practices in instruction are also increasingly demanded at these levels; in addition to verifying the impact of chosen programs both for fidelity of implementation and outcomes on student performance. This project sought to do that with Reading Mastery with a small group of primary grade children receiving special education services. The legal expectation that students receiving special education services are served with research based practices requires that we use programs with a strong research base. Reading Mastery satisfies this demand with the existing research base. However, this project goes a step further by carefully tracking implementation and results to demonstrate that we are seeing the kinds of results we want when such a program is put in place.

Generally mixed results were found after a year of Reading Mastery instruction with a group of eleven first, second and third graders. Problems with implementation, measurement, data analysis and systemic structures and change were addressed along with recommendations for resolving these difficulties. Creating change in the education system requires patience and careful, systematic efforts at improvement if we are to see

the kind of improvements in performance we are aiming for, especially in populations with disabilities. This project is an example of a first level implementation aiming at such improvements and can serve as an example and advisory source of information for other teachers, administrators and educators seeking to implement such evaluations in their learning communities.

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Without a doubt my wife, Jana Jones, deserves much credit in supporting me during my master's degree and the at times stressful completion of this project. Lastly, credit goes to my parents, Gene and Marie Jones who first instilled in me a love of learning and a desire to help others learn to love it as well.

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Literature Review

The literature on the efficacy of Reading Mastery is broad and varied. Almost all evidence shows implementations to be successful across regular and special education groupings. Most studies tend to be with lower grades with first and second grade being the most common settings for application (O'Connor, Jenkins, Cole & Mills, 1993; Ocokoljich, 1997; Riepl, Marchand-Martella, & Martella, 2008). Older grades are often targeted with a different program, such as Reading Horizons or Corrective Reading (Barton-Arwood, Wehby, & Falk, 2005). For this literature review I have chosen a historical review across a variety of subject and setting designs. I will take them in historical order, as they are each varied enough in design to not fall into any other neat groupings or patterns.

O'Connor, Jenkins, Cole, and Mills (1993) looked at the effect of different designs in reading programs on sound recognition (California Achievement Test subtest), reading recognition, and spelling measures (Peabody Individual Achievement Test subtests) for kindergarten students with disabilities. They compared the Superkids program and Reading Mastery program with a pre and posttest after randomly assigning the students to each group. This study showed that students who made advanced progress in the reading mastery program showed greater reading gains as measured by the California Achievement Test and the Peabody Individual Achievement Test. These same students also outscored the Superkids groups a year later on reading as well as spelling measures.

While the study above looked at all students with disabilities in a grade level placement, Ocokoljich (1997) focused on a study with first and second grade students

identified as having low phonological awareness. While these 108 students were not all receiving special education services they were identified as being at-risk "low readers". The Test of Phonological Awareness and the Stanford Achievement Test were used as a pre and post measure of effectiveness. Students receiving instruction with the district wide basal were the control group for the study. The study focused on sound, letter, and word study skills; word reading, sentence reading and reading comprehension; as well as the total reading score. On all measures, students in the Reading Mastery group outperformed the control group and first grade students were shown to make sufficient progress to enable them to catch up to their peers.

In contrast, Barton-Arwood, Wehby, and Falk (2005) implemented Reading Horizons (Reading Horizons, 2016) with three small groups of students (n = 2 per group) identified as having emotional and behavioral difficulties. Reading Horizons is similar to Reading Mastery but more suited to remediation for older students who lack decoding skills (Engelmann, 2000). Barton-Arwood et al., (2005) formed three groups, two of which had previously received teacher created instruction mostly worksheet based, and a third which received prior instruction with the Wilson Reading System (Wilson Reading Systems, 2015). This previous instruction was used as a control comparison for all three groups. In the study all three groups of students received interventions with the Horizons reading program. Pre and post measures were gathered with Woodcock Reading Mastery Test-Revised and the Comprehensive Test of Phonological Processing and were tracked for behavioral incidents during the extent of the intervention. The researchers compared phoneme segmentation, phoneme blending and basic reading scores. Results showed little to no reading gains of significance, and all scores remained well below the 50th

percentile. Behavior remained unchanged across groups. The conclusion of the study did not support implementation of Horizons for students with emotional or behavioral disabilities.

Riepl, Marchand-Martella, and Martella (2008) studied Reading Mastery Plus as an intervention kindergarten through second grade students with intellectual disabilities and developmental delays. This study is one of the only recent studies looking at Reading Mastery with children with intellectual disabilities and developmental delays, significant for our potential study population. However, the group was small as only six children were a part of the study group. DIBELS was used to measure reading fluency progress with a pre and post test given before and after the implementation. Riepl et al found that significant progress was made in reading fluency as measured by DIBELS with all six children.

In the past 10 years Stockard, has done a number of studies (Stockard 2008, 2011a, 2011b) looking at the effectiveness of Reading Mastery. In 2008 she conducted a study comparing progress of two Oregon schools. One school used a Three Tier Intervention model with occasional implementation of direct instruction based on teacher discretion; and the second school implemented Reading Mastery. They used a modified form of DIBELS to measure progress. Results showed statistically significant gains in measures of oral reading fluency, onset recognition fluency, phonemic segmentation fluency, and nonsense word fluency in students in the Reading Mastery program for grades 1 through 3. There were no significant differences in letter recognition between kindergarten groups, but Reading Mastery does not teach letter recognition at that level.

However, onset recognition fluency was higher in the DI group, but was not statistically significant.

A frequent approach to reading instruction and intervention is the use of guided reading. Green (2010) conducted a study with sixty-six second grade students where she compared the use of Reading Mastery versus guided reading. The readers were shown to be "at-risk" and at least one year behind level based on the Northwest Education Association, Measures of Academic Progress reading subtest (2010). Measures of Academic Progress were used as pre and post measures. Additionally, elements of race and socio-economic status were examined to determine if use of strategies were related to these factors. Before implementation it was acknowledged that the guided reading group scored slightly higher on initial pre test scores than the Reading Mastery group. Results showed that the guided reading group outperformed the Reading Mastery group with a midyear effect size of -.51 and an end of year effect size of -.55. It was further noted that gains were not significantly related to strategy in regards to race, gender or socioeconomic status. In other words, students of different genders, races and socioeconomic backgrounds scored similarly regardless of strategy chosen. Notably there were no fidelity measures taken during the course of the study which brings into question the rigor and accuracy of implementation of the programs under study.

Stockard conducted two studies in 2011 investigating Reading Mastery effectiveness as compared to a basal from Harcourt Brace (HB); and a second study where she compared results between students who started Reading Mastery in Kindergarten and those who started in grades one through three in several rural schools. In the first study the Reading Mastery students started lower than the students who

received the HB basal, yet significantly outperformed their HB peers by the end of the year. This improvement was observed in the total reading score from STAR reading tests and fluency, comprehension and word placement measures from the Florida Assessment for Instruction in Reading (FAIR). These results are consistent with previous studies that show Reading Mastery has the greatest success with students who are traditionally considered at risk.

In the second study (Stockard, 2011b) conducted in several rural schools administered Reading Mastery with two different groups and compared performance longitudinally. The first group started Reading Mastery in kindergarten; the second group started in later grades. Mid year DIBELS percentile scores on the Nonsense Word Fluency and Oral Word Fluency were higher for the kindergarten group than the first and second grade groups. Later cohort testing showed continued higher scores for the group that had started Reading Mastery in Kindergarten as late as fourth grade. This study supported the implementation of Reading Mastery as early as possible to achieve the greatest gains over time at least through grade four.

The extent of the research on Reading Mastery is robust. The review above brings out several points to consider for future implementation of the program. There are also several issues not addressed in the review of the literature above. These areas give us windows of potential future research where we can answer questions that other studies may not have addressed, at least in the last few years.

- Evidence suggests that Reading Mastery outperforms most other basal programs as shown in the Superkids, and Harcourt Brace program. Currently Uintah School District has no universal basal for students receiving special education services.

Special Education teachers are free to use whatever program they feel works for their instructional purposes. A project that evaluates the implementation of Reading Mastery in one special education program can be used as a model for conducting similar evaluations in the future.

- Native Americans tend to be underrepresented in many studies, and Eagle View Elementary has a significant Native American population. This is an opportunity to analyze results from Reading Mastery implementation with this often underrepresented subgroup.
- The potential for scaling up Reading Mastery for use with all students K-5 has been discussed at the school level. A preliminary study with a small group may offer insight into a school wide implementation and allow us to more effectively assess reading progress as compared with other programs.

With these items I wanted to systematically study how our implementation of Reading Mastery affects reading progress for students receiving special education services in the resource room grades one through grade three. The three questions I thus would like to answer are:

1. Does Reading Mastery increase the reading performance of students receiving special education services as measured by easyCBM?
2. Does Reading Mastery increase the reading performance of students receiving special education services as measured by Uintah School District's benchmark reading test?

3. Is there a difference in performance between Native American students receiving special education services and non-Native students receiving special education services on easyCBM or SAGE after students receive the Reading Mastery instruction?

Method

Participating School

Eagle View Elementary is a new school that serves the western portion of Uintah County in grades K-8. Previously the schools that served the area were Todd Elementary School and West Middle School. Those schools failed to make AYP repeatedly and West Middle School came under danger of closure under NCLB. The district and community decided to close both schools and restructure the new school to continue to serve the community in grades K-8. As a priority Title 1 school, Eagle View has moved up forty places on the Title 1 list among schools in Utah and has seen improved attendance and academic performance, though still far below state averages.

Enrollment at Eagle View is 470 students, 267 (56%) of which are Native American mostly from the local Ute Reservation; 26 students are Hispanic (5%); and 166 (35%) Caucasian. We have 15 ELL students, mostly native Spanish speakers. 57 students are under IEP, with the bulk of those served for specific learning disability and speech language impairment. Forty-three students with disabilities identify as Native American (77%). A total of 336 students are on free and reduced lunch (71% of the school).

There are 27 teachers at Eagle View, 25 regular educators and 2 special educators. Nineteen of these educators are certified and highly qualified by USOE criteria and six are teaching on a temporary license under the state's ARL program. Eagle View has a

part time instructional coach that is in the building two days a week, a full time counselor, assistant principal and principal. Eighteen para-educators work in the building as well, mostly operating as teaching assistants and aides. Four of these aides are special education aides, one of which will be delivering the Reading Mastery Program. Included in the 18 aides are also four specialists, two computer specialists, one music specialists and a library media aide responsible for delivering these subjects to students once a week per class. No other full time staff other than kitchen and custodial personnel are assigned to the building, although we do receive visits from related service personnel one to two times a week including, occupational therapy, physical therapy, speech therapy, school nurse, school resource officer, social services therapists, and the district autism team.

Teachers in the Study

The teachers teaching the students in the study group are listed in the table below as to level of certification and teaching experience:

Table 1: Teachers in the Study

Name	Grade	Certification	Years Experience
Teacher 1	1	Level 2	28 years
Teacher 2	1	Level 2	30 years
Teacher 3	1	Level 2	4 years
Teacher 4	2	Level 2	16 years
Teacher 5	2	Level 2	12 years
Teacher 6	2	Level 1	2 years
Teacher 7	3	Level 1	2 years
Teacher 8	3	Level 2	11 years

Teacher 9	3	Level 1	1 year
Teacher 10	4	Level 2	22 years
Teacher 11	4	ARL	0 years
Teacher 12	4	ARL	1 year

The regular education teachers that were assigned the students with disabilities in the study group were from first, second and third grade (see Table 1). All of the teachers use the Mondo Reading Core Literacy Program (discussed below) as the primary literacy program in their classroom. Writing instruction in both classes aligns with research-based practice and implemented with help from Dr. Ray Reuztel (as of 2016 assigned as Dean of Education at Wyoming State University) using Powerful Writing Strategies (Harris & Graham 2007). Student performance on benchmark measures is similar across these first and second grade teachers. However, Teacher 8's students tend to score much higher on Utah's Common Core end of level assessment SAGE. With an average of 52% of Teacher 8's students scoring proficient on SAGE English Language Arts assessment and 32% of students in Teacher 7's class. This will be kept in mind when looking at progress measures for students in these two classes.

Generally, students receive 120 minutes of language arts instruction at Eagle View Elementary. 60 minutes of instruction should be in direct, tier one reading instruction. This is usually delivered via the Mondo program. Thirty minutes of instruction must be focused on guided reading groups where students tend to receive ten minutes of reading instruction with the teacher, ten minutes with a para-educator and ten minutes of partner shared reading. The last 30 minutes is writing instruction as a class.

Reading Mastery was administered to the students in the study for 45 minutes during the guided reading groups period of the regular education class. This portion overlapped with a non-reading related activity that varied from class to class. The ideal time for Reading Mastery according to the trainers in the professional development was 60 minutes, unless a teacher was not using the writing portion of the program in which case 30 to 45 minutes would be sufficient.

Students Selected

Though we had initially desired to perform the project with a larger study group, we decided to just use the students who were assigned by IEP to receive pull-out special education services for reading. This eliminated the kindergarten group from selection as the students were receiving reading readiness and phonics based instruction in the kindergarten mainstream with special education aides. It also eliminated grades four and up as they were receiving special education services through Corrective Reading, a related but different program from Reading Mastery.

Thus, four first grade students, five second graders and two third grade students participated in the project. The demographics of these students are as follows:

Table 2: Students in the Study

Students	Grade	Disability Classification	Ethnicity
1	First		Native American
2	First	DD	Caucasian
3	First	SLI	Caucasian
4	First	SLD	Native American
5	Second	DD	Native American

6	Second	SLI	Native American
7	Second	SLI	Native American
8	Second	SLI	Native American
9	Second	SLD	Native American
10	Third	SLI	Native American
11	Third	SLI	Native American

Reading Mastery Teacher

The para-educator selected to deliver the Reading Mastery program has been a special education para-educator at Eagle View for twenty years. She is a trained para-educator and has received numerous specialized trainings including the Reading Mastery professional development that was offered at the beginning of this year.

Measures

EasyCBM progress monitoring measure. For the purposes of this project progress monitoring data were gathered with the easyCBM assessment tool. This tool is currently used by the Uintah School District for State mandatory reporting purposes on reading progress for grades 1 to 3. This tool aligns with district requirements. Using easyCBM increased the possibility that these data will be used in future comparison studies with the implementation of Reading Mastery in other schools as well as different reading programs the district may consider.

EasyCBM was last normed in 2013 /2014 and comes with two normative tests. One is designed for district wide assessment and is slightly different from the other norm which is designed for individual teacher use. For reliability measures easyCBM uses

internal consistency, alternate form, and test-retest (Anderson, Alonzo, and Tindal, 2014). The results of these reliability studies are provided in Table 1.

Table 3: easyCBM Reliability Measures

SubTest	Reliability Measure	Results
Letter Names	Alternate Form	.89 ≤ *r* ≥.82
	Test Retest	Correlation = .79. to .82
Letter Sounds	Alternate Form	.82 ≤ r ≥ .89
	Test Retest	C = .64 to .87
	Generalizability	G = .87 to .95
Phonemic Segmentation	Alternate Form	.62 ≤ r ≥ .89
	Test Retest	C = .57
	Generalizability	.50 to .83
Word Reading Fluency	Alternate Form	.87 ≤ r ≥ .96
	Test Retest	C = .92 to .95
	Generalizability	G = .74 to .99
Passage Reading Fluency	Alternate Form	.95 ≤ r ≥ .97
	Test Retest	C = .97
	Generalizability	G = .90 to .98
Vocabulary	Rasch Analyses	α = .81
Multiple Choice Reading Comprehension	Rasch Analyses	r = varied by grade .00 to .83
CCSS Reading	Internal	α = .83 to .90

Validity of a measure means that the scores can be interpreted as measuring what they purport to measure. Two types of validity are evaluated for easyCBM, criterion and construct validity. Criterion validity compares easyCBM to other standardized tests and shows how well easyCBM correlates to these other well-known measures. Construct validity shows how well easyCBM measures what it says it is measuring. The results of these validity studies are provided in Table 2 (Anderson et al, 2014).

Table 4: easyCBM Validity Measures

Subtest	Validity Measure	Results
Letter Names	Criterion	ρ_s = .81 to .86
	Construct	.80s to .90s
Letter Sounds	Criterion	.55 to .58
	Construct	Fair to Good
Phoneme Segmentation	Criterion	DIBELS ρ_s = .75 to .85
	Construct	.30 to .50
Word Reading Fluency	Criterion	.60 to .70
	Construct	Strong
Passage Reading Fluency	Criterion	Approx. .50 to .80
	Construct	.70 to .90
Vocabulary	Construct	Fit = .995 FL = .50 to .80
Multiple Choice Reading Comprehension	Criterion	.37 to .71
	Construct	Fit = .994 FL .900
CCSS Reading	Criterion	.41 to .71
	Construct	.50 to .80

The easyCBM tool is also granular enough to provide relevant data across several critical reading skills; skills that are addressed by the Reading Mastery program and which research into reading acquisition have picked out as being critical to reading success. Ideally we wanted to look at the following skills at each grade level.

Table 5: easyCBM Subtests

First	Phoneme Segmentation
	Letter Names
	Letter Sounds
	Word Reading Fluency
	Passage Reading Fluency
Second	Word Reading Fluency
	Passage Reading Fluency
	MC Reading Comprehension
	Vocabulary
Third	Word Reading Fluency
	Passage Reading Fluency
	MC Reading Comprehension
	Vocabulary
	CCSS Reading

Uintah School District requires administration of the easyCBM measure three times a year. More frequent gauging of progress was desired for this study, however the

teachers involved in the study were concerned about losing instructional time to test, and of allocating para-educators for testing instead of reading interventions. Since this project is designed to be integrated with the existing structures in school throughout the district, we assessed students three times during the year to assess progress patterns. Another less than ideal state was the fact that not all subtests are given according to district mandate. Though the above table identifies the tests that can be given by grade, the district only administers the subtests as follows:

Table 6: easyCBM Subtests Administered

Grade	Subtests Administered	Dates Administered
First	Phoneme Segmentation	Only at the first administration
	Letter Sounds	All
	Word Reading Fluency	All
	Passage Reading Fluency	Only the second and final administrations
Second & Third	Passage Reading Fluency	All
	MCRC	All
	Vocab	All

The problems with leaving out certain subtests are several. The lack of the tracking of phoneme segmentation and letter names hindered efforts at tracking progress, especially with students who are struggling. Though the lack of letter names is not critical to our determination of the effectiveness of Reading Mastery as a reading intervention for

these students (as Reading Mastery does not teach letter names) phoneme segmentation certainly does. Likewise, Word Reading Fluency is a desired measure not only for tracking students who might be struggling, but for the determination of decoding skills which Reading Mastery should also positively effect.

The assessment calendar was as follows:

Table 7: easyCBM Assessment Calendar

Window	Dates	Proctoring Agency
Fall Window	9/8/15 to 9/30/15	District Mandated Testing
Winter Window	1/5/16 to 1/29/16	District Mandated Testing
Spring Window	5/2/16 to 5/20/16	District Mandated Testing

Mean raw score as well as mean percentile rank for student's performance were reported at each measurement report. Uintah School District reports student progress on a high, some, low risk indicator for parental ease of understanding. For the purposes of this project percentile ranks gave us data based on national norms.

District Reading Benchmark: Fountas & Pinnell (2016)

The district "power standard" or main goal for reading in grades kindergarten through five is "Students will read on grade level" (Uintah School District Power Standards 2014). Verifying progress in reading across the district for the benchmark standard of "reading on grade level" is currently performed via the Fountas and Pinnell Benchmark Assessment System (Field Study 2016). In reporting to the state of Utah how many students in grades one through three are reading on level, teachers are allowed to use easyCBM, Fountas and Pinnell and other measures in assigning a low, some and high risk

level to students reading abilities. However, the default measure tends to be Fountas and Pinnell. Given this, it made sense to use Fountas and Pinnell as a measure of progress for the students in our project group. This way we could make sure we could say if students with disabilities in grades one through three made progress on Fountas and Pinnell after receiving instruction with Reading Mastery that it made a positive difference on an existing, accepted and widely used District measure.

The Fountas and Pinnell Benchmark Assessment System is an assessment system where students read an assigned text in the system. The texts are leveled according to difficulty from level A (approximately Kindergarten) to level Z (approximately eighth grade). Assessors keep a running record of the student's reading, noting errors in decoding, repeats, self-corrections, skips, and replacements The assessors also determine the student's reading rate. After the student finished reading the book, the assessor then asks a series of predetermined comprehension questions to assess comprehension of the text read. These two assessments, reading and comprehension, are combined based on charts provided by Fountas and Pinnell and a student is assigned a level from A to Z which can be roughly correlated to grade level according to the system's leveled chart (See Appendix 2).

Fountas and Pinnell is published by Heinemann and research on its validity and reliability by outside evaluators is scarce. However, on the Heinemann website dedicated to Fountas and Pinnell the report provided findings that:

- The levels of the books provided for purposes of assessment and placement do increase in difficulty according to grade level text gradients.
    - 81.1 % in the K-2 groups and 95.8% in the 3 through 8 groups

- Students assigned to a level read similar books in the series at the same level with the same degree of facility and accuracy.
    - 76.2% in the K-2 groups, 69.2% in the 3 to 8 groups
- Validity measures on the K-2 Group showed a strong correlation (.94 fiction and .93 non-fiction) with measures attained with the Reading Recovery Text Level Assessments.
- Validity measures on the 3-8 group showed moderate correlation (.69 fiction and .62 non-fiction) with the Slosson word reading measure; and a moderate correlation (.44 fiction and .42 non-fiction) on the DRP word reading measure.

The concerns about a measure with such moderate validity measures for grade three was a concern for this project, but since the assessment is in use by the district we decided to go ahead with the measure.

The assessment schedule for Fountas and Pinnell is aligned with district expectations:

Table 8: Fountas and Pinnell Assessment Calendar

Assessment	Dates	Proctoring Agency
Incoming Measure	8/25/15 to 9/15/15	District Mandated
Fall Interim	10/1/15 to 11/13/15	District Mandated
Winter Interim	1/11/16 to 2/26/16	District Mandated
Spring Summative	3/28/16 to 5/20/16	District Mandated

A Note on Utah SAGE Assessment

Utah assesses student mastery of the Utah Common Core across the state with the SAGE assessment system in grades three through twelve. Initially we wanted to use the

measures to assess progress, as that is how districts, schools, and increasingly teachers and administrators are deemed effective or ineffective. The ability to show Reading Mastery's effect on student performance on SAGE is something which we need to pursue. However, SAGE and the Common Core generally are a politically charged topic that has led many parents to opt their students out of such testing.

Unfortunately, in this project SAGE could not be used as a measure of progress. While it will be important in the long run to determine if Reading Mastery improves performance on SAGE reading measures we ran into several problems using the measure in this study. The first two grade groups do not take SAGE, as SAGE administration begins in grade three. The third grade group, however, had all students in this study opted out of testing. As mentioned above more study should be done to verify Reading Mastery's effect on student performance on state end of level assessments. Since this is the measuring stick by which the efficacy of such programs are often determined, such research would be helpful.

Independent Variable

Reading Mastery Program

Reading Mastery has been through several incarnations, but the solid research-based strategies are consistent through its many versions. We implemented the 2008 Signature edition.

Professional Development & Training

As this is a district-wide implementation, professional development had been a priority from the start of our discussions. The district special education director, and the special education team leader committee, led the implementation and they agreed training would be essential. The district has a number of veteran special education teachers who were trained at Utah State University where Reading Mastery was used and is the program of choice for their direct instruction training. However, plans were changed mid-stream for reasons unknown to me and official trainers McGraw Hill, the publishers of Reading Mastery, were scheduled to come out and deliver training to Reading Mastery teachers. This training was a full day professional development in-service led by a representative from McGraw Hill. Four trainers were scheduled to come, two for Reading Mastery and two for Corrective Reading, but half the team did not make it. Thus we had one trainer each for the respective groups. The Reading Mastery training took about five and half hours, and included about an hour of actual practice with the system. The topics covered included (See Appendix 3):

- Program Overview: Strands, Correlations & Content
- Understanding Reading Mastery Text Conventions
- Signals, Prompts, Cues & Correction, Rhythm of Instruction
- Modeling and Practice of Signals, Prompts, Cues and Rhythm with whole group
- Lesson Construction “5 Day Cycle”
- Spelling, Vocabulary Activities and Written Components
- Additional Practice in small groups
- Digital Program Components (given time)

The training was in my opinion rushed. Little time was given for practice and no coverage of the digital components were addressed. I made contact with the trainer and explained what I wanted to try and do as a formal project as a part of my masters of education. At the time she seemed supportive and we exchanged emails in order for me to be given a copy of the PowerPoint used in the training and a copy of their implementation fidelity measure.

Initially, additional district level professional development was planned over the course of the year to be developed and delivered by those familiar with the program in district. Unfortunately, none was ever delivered. Evidently, when the change was decided to move away from district trainers to official McGraw Hill trainers we also dropped the interim trainings by district trainers over the course of the year. The district teacher-trainers reportedly felt like they could do little beyond what had been delivered by the McGraw Hill trainer. I also could not get the trainer from McGraw Hill to respond to my emails and never received a copy of the training materials or the implementation fidelity measure. I contacted the district special education director to intervene for me, but she never followed up.

This left me working with the Reading Mastery teacher at Eagle View to seek to improve her implementation of the program. I worked closely with her in the planning of instruction, selection of groups, monitoring of students and troubleshooting problems during the course of the year. However, the lack of effective training and support from the corporate or district level multiplied concerns over implementation and engendered less confidence in the results.

Implementation Fidelity Measure

To measure implementation, we administered a fidelity measure (see appendix 1) designed to evaluate fidelity of implementation for Reading Mastery. This tool was used to evaluate delivery of Reading Mastery instruction in the areas of Organization, Procedures, and Monitoring Independent Work and provides an overall percentage to gauge fidelity of delivery. This measure helped us to assess whether the program was implemented accurately and correctly. The assumption was that a low score on the fidelity measure might explain low performance results, where a higher score might predict higher student performance outcomes.

Two teacher observations were conducted during the middle of the fall and early spring. The implementation measure was used to record implementation fidelity and was used for both observations (see Appendix 1). The results of these two fidelity measures showed 65% and 80% implementation respectively. The initial observation showed failures in, begins lesson promptly, finishes lesson in allotted time, students respond on signal in a conversational tone, teacher uses clear signals, teacher allows think time when appropriate, students are at mastery, and teacher has good pacing. In addition, all the monitoring independent work was marked N/A as no independent work was covered. Some of these issues were related to scheduling issues with teachers. The second observation had failures in, teachers uses clear signals, students respond on signal in a conversational tone, teacher corrects all errors, students are at mastery.

Evaluation Design

This project employs a repeated measures design using the easyCBM and expected vs actual growth measure with the Fountas & Pinnell (2016) test. There was no control group for this project.

Results

Analysis of data for this project was conducted using the tables below. Scores for easyCBM are reported using mean raw scores and mean percentile ranks for each subtest outlined below. These scores are averaged by grade to yield an overall score per grade. In addition, the mean raw score at each measurement point is graphed to show progress during the academic year. Results are examined for growth over the course of the year and the assumption was that growth would mean Reading Mastery helped students improve on their easyCBM scores over the course of the year. The assumption was that other instruction in the classroom was held constant and that the growth we saw is due to the addition or substitution of Reading Mastery during the guided reading period.

Data in the first grade were disaggregated for Native American students with disabilities and non-Native American students with disabilities and graphed to show student growth during the academic year. In addition, differences were described between the mean scores of Native American students with disabilities and non-Native students with disabilities at each measurement point. The second and third grade groups were all Native American students, thus this study was only applied to the first grade students.

The Fountas and Pinnell results were gauged for overall growth in terms of number of levels gained. This was compared to the expected growth in levels that the

system says should occur from grade to grade. A measure that was close to or above the expected growth would be considered favorable for Reading Mastery implementation, other instruction held constant as in the case with easyCBM.

Each question the project aimed to address is taken in order below with a brief summary and explanation of results below the data table and graphs.

Does Reading Mastery increase reading performance for students receiving special education services as measured by easyCBM?

Table 9: First Grade easyCBM Results

Subtests	9/24/2015 Raw score / Percentile rank	1/ 2016 Raw score / Percentile rank	5/2016 Raw score / Percentile rank
Phoneme Segmentation	7 / 14	Not given	Not given
Letter Names	Not given	Not given	Not given
Letter Sounds	29 / 43	37 / 38	53 / 83
Word Reading Fluency	3 / 8	11 / 14	20 / 14
Passage Reading Fluency	Not given	9 / 9	24 / 16

In First grade there is a strong increase in letter sounds from the 43rd percentile to the 83rd percentile and a clear indication that great progress was made in that area. Letter sounds is an area we would expect to see a large effect due to Reading Mastery's focus on this area. The gains in percentiles for word reading fluency and passage reading were less, but still positive overall.

Table 10: Second Grade easyCBM Results

Subtests	9/24/2015 Raw score / Percentile rank	1/ 2016 Raw score / Percentile rank	5/2016 Raw score / Percentile rank
Word Reading Fluency	Not given	Not given	Not given
Passage Reading Fluency	10 / 2	14 / 3	24 / 5
Multiple Choice Reading Comprehension	4 / 18	5 / 21	5 / 12
Vocabulary	2 / 7	2 / 3	5 / 5

The second grade showed little percentile improvement on all measures and an overall drop in Multiple Choice Reading Comprehension. Passage Reading Fluency and Vocabulary showed very slight gains over the course of the year.

Table 11: Third Grade easyCBM Results

Subtests	9/24/2015 Raw score / Percentile rank	1/ 2016 Raw score / Percentile rank	5/2016 Raw score / Percentile rank
Word Reading Fluency	Not given	Not given	Not given
Passage Reading Fluency	17 / 2	29 / 2	51 / 6
Multiple Choice Reading Comprehension	4 / 7	5 / 4	4 / 3
Vocabulary	4 / 3	5 / 1	11 / 6
CCSS Reading	Not given	Not given	Not given

The third grade results show a drop in the reading comprehension similar to the second grade students. Passage fluency and Vocabulary show negligible improvement in percentile ranks.

Does Reading Mastery increase performance for students with disabilities receiving special education services on Fountas and Pinnell?

Table 12: First Grade Fountas and Pinnell

Student	8/2015	11/2015	2/2016	5/2016	Levels of Growth
Student 1	Non reader	B	D	E	5
Student 2	Non reader	C	C	E	5
Student 3	Non reader	A	B	E	5
Student 4	Non reader	B	E	I	9

The goal for First grade is to grow six levels from level D to the beginning of level J. These levels are considered the instructional level for a child in first grade. In other words, the assigned level is the level at which they should be instructed. Three students grew five levels and one student grew nine levels. While these results will not close the gap for the three students who grew five levels, this performance is much better that what was anecdotally reported previously for students with disabilities.

Table 13: Second Grade Fountas and Pinnell

Student	8/2015	11/2015	2/2016	5/2016	Levels of Growth
Student 5	D	C	E	F	2
Student 6	D	C	F	F	2
Student 7	C	C	D	E	2
Student 8	B	B	C	C	1
Student 9	B	D	D	E	3

In second grade we observed two levels of growth, which is one level below what is expected for this grade. One student grew one level while another grew three levels.

Table 14: Third Grade Fountas and Pinnell

Student	8/2015	11/2015	2/2016	5/2016	Levels of Growth
Student 10	D	D	F	J	5
Student 11	C	D	E	J	6

Third grade results are quite a bit better than the expected growth of three levels. In the third grade one student grew five levels and another student grew six levels. While this is notable, it is important to keep in mind that it is at third level that the Fountas and Pinnell validity and reliability begins to drop as reported above in the measures section.

Is there a difference between reading performance between Native American Students receiving special education services and non-Native students receiving special education services after Reading Mastery instruction?

Table 15: First Grade easyCBM Native vs Non-Native

Subtests	PreTest Date		Interim Date		PostTest Date	
Race	Native	Non	Native	Non	Native	Non
Phoneme Segmentation	N/A	N/A	N/A	N/A	N/A	N/A
Letter Names	N/A	N/A	N/A	N/A	N/A	N/A
Letter Sounds	28/43	29/43	37/39	37/37	55/78	51/88
Word Reading Fluency	2/6	3/9	12/18	10/10	24/0	16/0
Passage Reading Fluency	N/A	N/A	11/0	8/0	26/0	21/0

First grade was the only grade that had non-Native students included in the group. In this group there were two Native American and two Caucasian students. In letter sounds the Native American students grew from the 43rd percentile to the 78th percentile, 34 percentile points. The non-Native students grew from the 43rd to the 88th percentile, 45 percentile points. In word reading the Native American students dropped 6 percentile points and the non-Native students dropped 9 percentile points. Passage reading fluency saw no growth in either group.

Conclusion

Throughout this project, there were problems with implementation of reading mastery and delivery of assessments. This limits the extent to which clear conclusions may be drawn about application of Reading Mastery with low performing student in the school district. The first question under considerations was:

Does Reading Mastery increase the reading performance of students receiving special education services as measured by easyCBM?

In first grade there is an increase in the letter sounds and passage reading fluency subtests, but a decrease in word reading fluency. In second grade an increase in passage reading fluency and vocabulary is offset by a rather large decrease in multiple choice reading comprehension. Similarly, there are slight gains in passage reading fluency and vocabulary subtests in third grade and a steady decline in multiple choice reading comprehension. The mixed results with easyCBM make it difficult to determine if Reading Mastery positively or negatively influenced performance.

The strong increase in letter sounds in the first grade are telling, since this is a strong emphasis in the K-3 Reading Mastery programs. Letter sounds were not tracked

for second and third grade students so it is not clear if student performance on letter sounds improved more during these grades. Phonemic segmentation was not tested in any grade except for the beginning of first grade. This is another area strongly focused on by Reading Mastery and might have given another indicator that the program was building foundational skills in these early grade students. The implementation of the program was initially weak and continued to be pressed for time often excluding the portions of the program focusing on more advanced reading skills such as comprehension and vocabulary. In addition to this, all the students in the project group started with the kindergarten Reading Mastery level kit and progressed through the end of the first grade kit by year's end. This may have affected results by focusing on areas that were not adequately tested with the easyCBM.

The second question in this project was:

Does Reading Mastery increase the reading performance of students receiving special education services as measured by Fountas and Pinnell Benchmark Reading Assessment System?

The Fountas and Pinnell results are more promising. Fountas and Pinnell is used by the Uintah School District much more than easyCBM and is used to determine whether students are reading on grade level by the end of their grade (Uintah School District Power Standards 2014). Unfortunately, past performance data were not available for comparison. But we do see solid progress in this area in the data. To see students receiving special education advancing nearly as much or more than their regular education peers is promising.

In first grade Fountas and Pinnell scores are slightly below what was expected for all but one student. In second grade there is a slight lag in scores for students in the project compared to expected growth. But in third grade there is almost twice the growth than is expected at that grade level. Again, this may not be enough to close the gap quickly, but is enough to assert that students receiving special education services did progress when given Reading Mastery as a reading intervention.

Given the number of students used in this evaluation, it was not possible to determine whether there was a meaningful difference between Native American students receiving special education services and non-Native students receiving special education services on the easyCBM or the Fountas and Pinnell measures after students received the Reading Mastery instruction.

The groups in the project were predominantly Native American. Only first grade had non-Native students, but there were only two students in each category. Making comparisons with such a small group is difficult. There are small differences in scores in this group, with Native American students scoring lower in letter sounds. However, both groups decreased in word reading fluency scores and made no progress on passage reading fluency. Determining how generalizable the observed differences are is impossible given the small number of students.

Recommendations

The research base for the effectiveness of Reading Mastery is solid. This base alone provides strong reasons for implementing the program with students with disabilities. Legislation is increasingly requiring that students receiving special education services are

served with research-based practices and Reading Mastery certainly fits that bill. However, as always, programs, schools, and districts implementing a new practice should seek to implement these programs as outlined in the research to successfully transfer the results of research into practice. During the implementation educational entities should carefully track results of fidelity of implementation as well as outcome data. In the light of this initial effort to fulfill this goal we make the following recommendations based on the findings of this study.

Testing must be more rigorous to increase confidence that students are progressing. It is recommended that all of the easyCBM subtests (except perhaps CCSS) be utilized. Since easyCBM is the agreed upon measure between the Utah State Office of Education and Uintah School District then it should be used maximally to track progress of Reading Mastery implementation.

It is also recommended that teachers, administrators and aides work to increase assessment literacy of all measures, but especially with easyCBM. There are few teachers who knew how to read easyCBM results other than assigning low, some, or high risk. Teachers were not even aware that they could get other measures on subtests or that they could use the tool for progress monitoring. The test was chosen evidently by a small group of teachers within the district some time ago to satisfy state requirements instead of going with the state recommended measure, DIBELS. The assessment is thus looked at as a hoop to jump through for the state with little relevance to classroom instruction or intervention. This needs to change to maximize the use of this measure and to use it to monitor the effectiveness of the Reading Mastery program. This is especially important

given the mixed results of effectiveness in this project. Comparison with control groups and students without disabilities may also prove useful.

The Fountas and Pinnell Benchmark Assessment System (Field Study 2016) has only moderate validity and reliability as outlined in this project. Anecdotally Fountas and Pinnell also does not correlate well with SAGE as noted anecdotally by the Uintah School District curriculum director. According to the curriculum director, students only score proficient on the SAGE measure if they are testing four levels higher than recommended on the Fountas and Pinnell Benchmark Assessment System. Combined with the validity and reliability issues, especially in grades three and higher, this makes the usefulness of Fountas and Pinnell questionable.

Ultimately SAGE or whichever state level summative test is required should be incorporated where possible. However, this may require a broader implementation as many students are being opted out of testing and may require the inclusion of the Corrective Reading program, as SAGE testing does not begin until grade three.

It is simply required that ongoing professional development be a part of implementation. No follow-up trainings other than what I provided to the Reading Mastery teacher was provided and this would have been helpful. In the implementation phase of this project para-educators were given the responsibility for delivering Reading Mastery with little support and almost full responsibility over results. While para-educators are a valuable addition to the classroom and can be trained to deliver services, a more fully supported system of implementation is recommended. An ideal model would be a train the trainer model (Murphy and Carson-Warner 2016) where certified special

education teachers, possibly along with building or district administrators, become the experts, actively modelling, coaching, supervising and evaluating implementation until a high level of facility is attained.

Perhaps the largest failure in implementation of this project was the lack of mentoring and professional development that is key for the movement of research into practice. (Vaughn and Coleman 2004, Little and Houston 2003). Since it was not possible to have industry professionals from Reading Mastery deliver more than a cursory first of the year training, we must develop the experts that can coach implementation to all who are expected to deliver the program. For as pointed out by Vaughn and Coleman in their work on mentoring "coaching from an expert peer should be provided," (2004) for effective professional development.

The train the trainer model offers a structure for developing the capacity to support teachers and paraeducators as they learn new instructional strategies and apply those strategies in their classrooms, a hallmark of effective professional development (Little and Houston 2003). The "Train the Trainer Manual", (Murphy & Carson-Warner, 2016) at offers a straightforward three step train the trainer mentoring process for trainers to use with trainees consisting of 1) Acquisition of Knowledge, 2) Application and 3) Reflective Supervision. Such an approach is highly recommended, supported by research on mentoring and professional development (Little & Houston 2003; Vaughn & Coleman 2004,), and might mitigate the problems that plagued this project. Thereby we will be more confident in being able to assess the impact of Reading Mastery on student with disabilities.

There also must be better coordination between regular education teacher and special education teachers for scheduling pull out times in order to allot adequate time for the program. Without adequate time for the program it will be difficult to determine effectiveness.

Lastly, the issues of Native American performance compared to non-Native peers is a clear area in need of further study. Such study is not widely represented in the research base and will strengthen the findings of Reading Mastery with underrepresented groups. Also, the of overrepresentation of Native students in the special education program at Eagle View demands attention above and beyond the present project.

Overall the design of this project is recommended with the insights and recommendations provided above. In the future, however, researchers should take into consideration the weaknesses of this initial project and the fact that the implementation of the program was a concern and that assessment measures were not adequate to granularly track student reading progress after receiving Reading Mastery. The research base alone supports the continued use of Reading Mastery as an evidence based practice. Further tracking of progress of the students in this project and in the population more generally as they continue on the Reading Mastery program, with attention to the recommendations above, will give further and better insight into the effect of this program on students at Eagle View and at other schools in the district.

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APPENDICES

Appendix 1

Implementation Check Reading Mastery

Teacher: _____ **Date: _____**

Location: _____ **Group: _____**

Comments By: _____ **Time: _____**

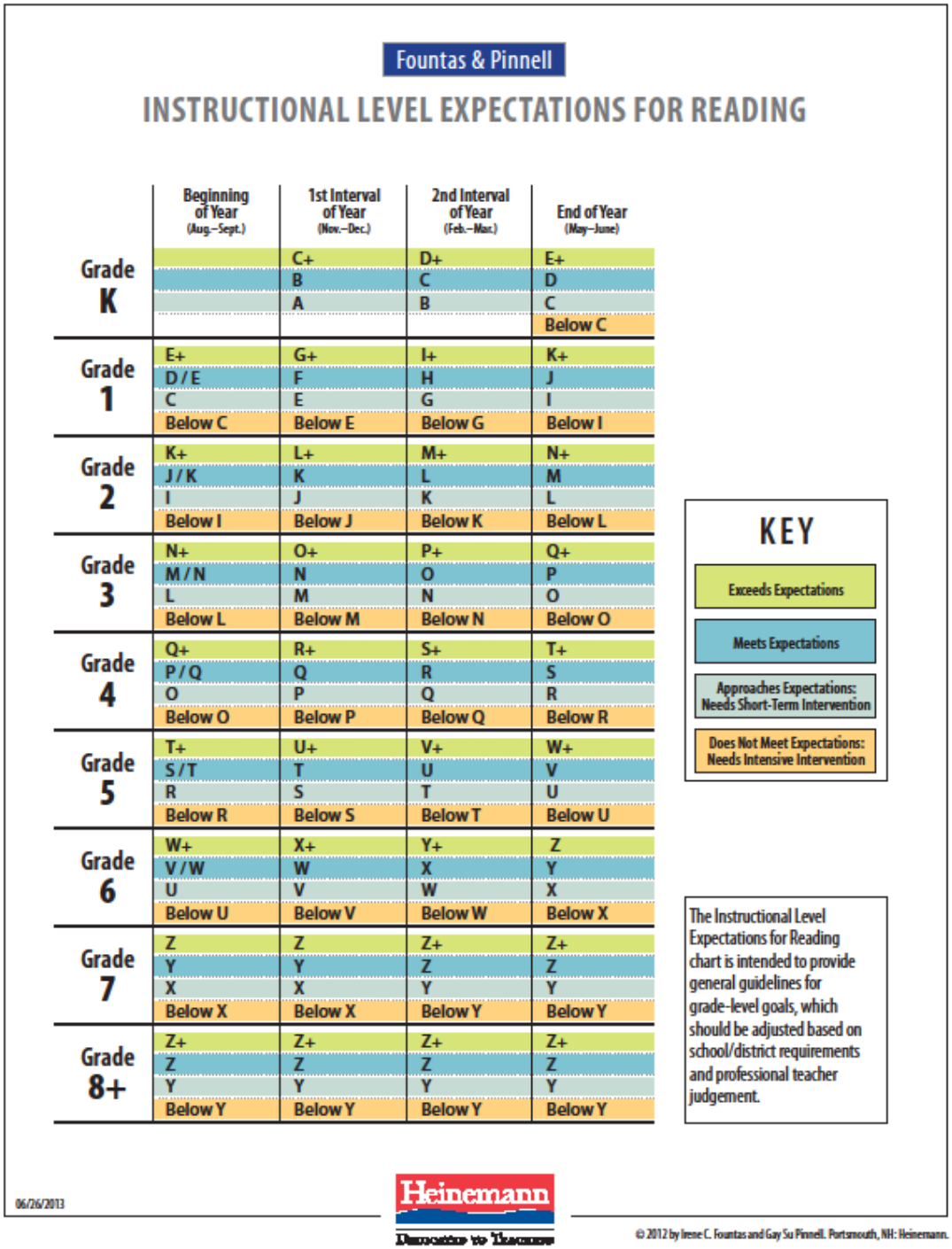
Organization	**Yes**	**No**	**N/A**	**Comments**
Materials organized and ready				
Begins lesson promptly				
Finishes lesson in allotted time				
Students on Task				
Procedure	**Yes**	**No**	**N/A**	**Comments**
Teacher follows steps and wording in exercises				
Teacher uses clear signals				
Students respond on signal in a conversational tone				
Teacher allows think time when appropriate				
Teacher corrects all errors (group and individual)				
Teacher provides delayed tests for missed items				
Students are at mastery				
Teacher presents individual turns quickly				
Teacher moves quickly from one exercise to the next				
Teacher completes lesson in expected amount of time				
Teacher has good pacing				
Monitoring Independent Work	**Yes**	**No**	**N/A**	**Comments**
Students are on task and working independently				
Students completed assignments in the expected amount of time				
Work is neat and has few or no mistakes				
Teacher monitors seat work and reinforces good work				
Teacher provides work checks and firms weak items				

% of steps completed = _____

Additional Comments

Appendix 2

Fountas and Pinnell Benchmark Reading Levels



Fountas & Pinnell

INSTRUCTIONAL LEVEL EXPECTATIONS FOR READING

	Beginning of Year (Aug.–Sept.)	1st Interval of Year (Nov.–Dec.)	2nd Interval of Year (Feb.–Mar.)	End of Year (May–June)
Grade K		C+	D+	E+
		B	C	D
		A	B	C
				Below C
Grade 1	E+	G+	I+	K+
	D / E	F	H	J
	C	E	G	I
	Below C	Below E	Below G	Below I
Grade 2	K+	L+	M+	N+
	J / K	K	L	M
	I	J	K	L
	Below I	Below J	Below K	Below L
Grade 3	N+	O+	P+	Q+
	M / N	N	O	P
	L	M	N	O
	Below L	Below M	Below N	Below O
Grade 4	Q+	R+	S+	T+
	P / Q	Q	R	S
	O	P	Q	R
	Below O	Below P	Below Q	Below R
Grade 5	T+	U+	V+	W+
	S / T	T	U	V
	R	S	T	U
	Below R	Below S	Below T	Below U
Grade 6	W+	X+	Y+	Z
	V / W	W	X	Y
	U	V	W	X
	Below U	Below V	Below W	Below X
Grade 7	Z	Z	Z+	Z+
	Y	Y	Z	Z
	X	X	Y	Y
	Below X	Below X	Below Y	Below Y
Grade 8+	Z+	Z+	Z+	Z+
	Z	Z	Z	Z
	Y	Y	Y	Y
	Below Y	Below Y	Below Y	Below Y

KEY

- Exceeds Expectations
- Meets Expectations
- Approaches Expectations: Needs Short-Term Intervention
- Does Not Meet Expectations: Needs Intensive Intervention

The Instructional Level Expectations for Reading chart is intended to provide general guidelines for grade-level goals, which should be adjusted based on school/district requirements and professional teacher judgement.

06/26/2013

Heinemann
Dedicated to Teachers

Appendix 3

Reading Mastery Professional Development Agenda

Uintah School District

Reading Mastery Training
Agenda: 14th August 2015

- **7:30 to 8:00 Continental Breakfast**
- **8:00 Introductions & Expectations – Shannon Deets**
    - **Split into Reading Mastery & Corrective Reading Groups**
- **8:15 Training – MHA**
- **11:30 Lunch** (on your own)
- **12:30 Training -- MHA**
- **3:30 or 4:00 Dismiss – Shannon Deets**

Please inventory all supplies you take today and contact Elaine for other supplies you may need.