IOWA READING RESEARCH CENTER

Student Reading Success Through Research and Collaboration

# Evaluation of the Council Bluffs Community School District's 2017 Summer School Program


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# Summary of Student Outcomes in Grades 1-4

The Council Bluffs Community School District's summer reading program demonstrated the following effects on students' RAPID scores when compared to eligible students who did not participate in the program.

| Grade Level | Statistically Significant Reading Outcome |
|---|---|
| 1 | Overall reading ability and Word Reading |
| 2 | Spelling |
| 3 | None *[Non-participating students outperformed participants on Word Recognition]* |
| 4 | Reading Comprehension |

Other effects on RAPID scores were found for the supplemental pullout intervention and attendance.

| Variable | Grade Level(s) | Statistically Significant Reading Outcome |
|---|---|---|
| CIM participation | 1 | Overall reading ability and Word Reading |
| Attendance in core program | 1 | Word Reading |
| Attendance in CIM | 1 | Overall reading ability and Word Reading |
| | 4 | Word Recognition |

Moderate positive effects on FAST scores were found for Kindergarten and Grade 1 students.

| Grade | FAST Outcome | Effect Size |
|---|---|---|
| K | Composite Score | 0.466 |
| 1 | Median WRC | 0.350 |

# Overview

For several years, the Council Bluffs Community School District (CBCSD) has been offering a summer learning and enrichment opportunity to elementary students who are identified by school personnel as being at risk of reading failure. For the past 3 years, the Iowa Reading Research Center (IRRC) at the University of Iowa has been working with CBCSD to analyze their students' reading data and support the district in refining their summer program. In 2017, CBCSD identified five elements as priorities for continuous improvement of the program:

- Using a different assessment to measure not only overall reading ability, but also subskills
- Decreasing the variability of students within classes
- Providing more structured core reading instruction
- Offering more intensive support to small groups of students with the highest needs
- Distributing the summer program over more of the summer time

The IRRC served as the external evaluator of the 2017 program, analyzing the data obtained from instructing students who had just completed kindergarten and Grades 1-4.[1]

## Reading Assessment

To form the reading classes and identify students for the intensive supplemental intervention, CBCSD administered the Reading Assessment for Prescriptive Instructional Data (RAPID). Unlike the measures used in previous summers, RAPID provided both an overall reading score (referred to as the Reading Success Probability Score or RSP) as well as scores on individual components of reading. The subtests varied by grade level as shown in Table 1.

| Subtest | Kindergarten | Grade 1 | Grade 2 | Grades 3-5 |
|---|---|---|---|---|
| **Phonological Awareness** | X | | | |
| **Letter Sounds** | | | | |
| **Word Reading** | X | X | X | |
| **Spelling** | | | X | |
| **Word Recognition** | | | | X |
| **Vocabulary Pairs** | X | X | X | |
| **Following Directions** | | X | X | |
| **Vocabulary Knowledge** | | | | X |
| **Syntactic Knowledge** | | | | X |
| **Reading Comprehension** | | | | X |

*Table 1.* RAPID reading subtests administered in each grade

[1] Within CBCSD, the students are referred to by the grade level in which they will be instructed in the fall of 2017: Grades 1-5. Because the data analyzed by the IRRC was based on students' spring 2017 grade placement, this report will refer to the students by that tested grade level: K-4.

All students in Grades K-4 who were eligible for the summer program were pretested in the spring of 2017. The demographics of the students who did (treatment) and did not participate (control) in the summer program are provided in Table 2.

| **Sample Size** | Female | Black | Hispanic | White | FRL | ELL | IEP |
|---|---|---|---|---|---|---|---|
| **Kindergarten** | | | | | | | |
| Treatment (*n* = 84) | 41.7% | 4.6% | 17.1% | 76.1% | 35.2% | 14.3% | 50.0% |
| Control (*n* = 117) | 47.9% | 12.0% | 14.5% | 72.7% | 44.4% | 10.2% | 44.4% |
| **Grade 1** | | | | | | | |
| Treatment (*n* = 82) | 39.0% | 4.9% | 13.4% | 78.1% | 26.8% | 12.2% | 46.3% |
| Control (*n* = 132) | 40.2% | 7.6% | 15.2% | 75.8% | 39.4% | 15.2% | 50.0% |
| **Grade 2** | | | | | | | |
| Treatment (*n* = 97) | 48.5% | 6.2% | 16.5% | 75.3% | 41.2% | 17.5% | 74.2% |
| Control (*n* = 194) | 40.7% | 6.2% | 16.6% | 75.7% | 47.7% | 14.4% | 67.4% |
| **Grade 3** | | | | | | | |
| Treatment (*n* = 93) | 51.6% | 3.2% | 20.4% | 75.3% | 34.4% | 19.4% | 73.1% |
| Control (*n* = 235) | 46.4% | 6.0% | 16.2% | 74.9% | 37.0% | 12.3% | 67.7% |
| **Grade 4** | | | | | | | |
| Treatment (*n* = 56) | 48.2% | 1.8% | 21.8% | 72.7% | 23.6% | 14.3% | 65.5% |
| Control (*n* = 221) | 47.1% | 6.3% | 16.7% | 73.8% | 45.3% | 12.7% | 73.8% |

*Table 2.* Demographic characteristics of treatment and control students by grade level

All eligible students in Grades 1-4 were posttested in the fall of 2017. Only those kindergarten students who attended the summer program were posttested. This was because the RAPID subtests would have changed by the fall, precluding pre- to posttest comparisons. Therefore, no control group data are available for kindergarten.

## Decreasing Variability Within Classes

To the extent possible, RAPID data were used to more homogeneously group students within classes for the 2017 summer program. The ideal configuration of groups was not always possible because students voluntarily enrolled and attended the program. Class sizes were capped at 15 students, so balancing of classes based on enrollment often resulted in less homogeneity within each class. Moreover, as attendance waned over the summer, some classes were condensed.

## Providing Structured Core Reading Instruction

Summer program participants spent 3 hours per day (8:30 – 11:30 AM) in reading instruction. CBCSD utilized their Wonders core reading curriculum from the regular academic year for whole-group instruction. Wonders includes three primary components: Whole Group Reading, Whole Group Language Arts, and Small Group Differentiated Instruction. Each component is intended to be taught daily. Within each component, there are multiple lessons and activities. All students in the summer program were to receive the Whole Group Reading and Whole Group Language Arts components. In addition, some students were to receive Small Group Differentiated Instruction based on their needs.

WonderWorks and the Foundational Skills Kit are supplemental intervention materials aligned with the skills and content of Wonders. Most students in the summer program received the WonderWorks and Foundational Skills Kit interventions during small-group rotations provided by the classroom teacher for 10-minute segments. Students were to receive two small-group lessons per day. When not with the teacher during the small-group time, students were to participate in literacy stations such as:

- Read to Self
- Lexia (computer-delivered instruction)
- Interactive Wonders Materials
- Responding to Reading
- Word Work
- Writing or spelling

### Offering More Intensive Supports

Students with the lowest performance on the RAPID Word Reading or Word Recognition measures were prioritized for the supplemental pullout intervention. This was delivered by a reading intervention teacher to small groups of no more than 4 students. Identified students were pulled from the core reading classes for 20 minutes per day. These students were not to participate in any WonderWorks small-group intervention lessons within the core class, but instead were to receive CIM intervention provided by a specially trained teacher.

### Distributing the Summer Program

To offer students an extended period of time for students' summer learning, CBCSD offered the program for a total of 28 days between June 19 and August 10. There was a one-week break over the Fourth of July holiday that was planned to accommodate the high rate of absences experienced at that time during previous years. The schedule spanned most of the summer with students having a few weeks' break just after the spring 2017 semester ended and just before the fall 2017 semester began.

## Results of the Summer Program

### Data Cleaning

Students were removed from analysis for the following reasons:

- Student was listed with a grade level other than K-4
- Student was listed with different grade levels for their pretest and posttest entries
- Student's testing date fell outside of the ranges May1 – May 31 or July 24 – Sept 11, or the testing date was blank

Test scores with a date between May 1 – May 31 were considered *pretest*, and test scores with a date between July 24 (kindergarten) – Sept 11 (grades 1-4) were considered *posttest*.

Students marked as having dropped or who were crossed out in the data file provided by CBCSD were retained for analysis because it was decided that the number of attendance days in the summer program and CIM were the relevant indicators of student involvement. In other words, a student who attended summer school for three days and then dropped was considered equivalent to a student who attended for three days and was marked absent for all subsequent days (but never formally dropped). However, drops and cross-outs were considered in the attrition rates reported in Table 3.

| % Dropped Kindergarten | % Dropped Grade 1 | % Dropped Grade 2 | % Dropped Grade 3 | % Dropped Grade 4 |
|---|---|---|---|---|
| 20.0% | 20.4% | 21.4% | 22.2% | 26.1% |

*Table 3.* Attrition by grade level

The rate of attrition found in 2017 is consistent with previous examinations of summer school data.

## Effect of Summer School Program on RAPID Composite and Subscale Scores

Means, standard deviations, and correlations among RAPID subtest and composite scores (RSP) during both pretest and posttest periods are reported by grade level in Appendix A.

The analyses performed took into account that students participating in the summer program were nested in classrooms, but students in the control group were not because they were not in school. Thus, data analyses needed to account for the partially nested structure. Because invited students may have opted out of participating in the summer school program, the analyses also accounted for potential differences between students that participated in the program (treatment) versus students that did not (control). Analyses were performed in the R environment using the twang, survey, and lme4 packages and were verified independently by an analyst in the SAS environment. Consequently, the data analyses for each grade level involved multiple steps:

1. Treatment and control groups were balanced by students' characteristics (i.e., gender, race, FRL, ELL, IEP, and age at the time of examination) and composite RAPID pretest score (RSP) using propensity scores.
2. Propensity scores were then entered in the models as weights during the statistical analyses.
3. The statistical analyses were performed for each outcome and individual grade level. When the outcome of interest was the composite RAPID posttest score (RSP) only the variable representing exposure (or not) to the treatment was included in the model. On the other hand, when RAPID subscale scores were the outcome of interest, the pretest score for the specific subscale was included in the model in addition to the variable representing exposure to the treatment.
4. All the main effects analyses took into account the nested structure of the treatment group via cluster standard errors.

## Main Effects

Main effect results of summer school program participation can be found in Appendix B.[2] Note that the standardized mean-difference effect sizes reported in the final column take into account the partially-nested structure of the data. **First-grade** main effects indicate that the treatment group scored statistically significantly higher than the control group in overall reading ability as indicated by the RSP score (mean difference = 14.22; difference standard error = 5.57; p-value = .011) and the Word Reading subtest (mean difference = 54.64; difference standard error = 13.67; p-value = .007). **Second-grade** main effects indicate that only the Spelling subtest was statistically significantly higher for the treatment group (mean difference = 15.15; difference standard error = 5.58; p-value = .035). **Third-grade** results indicate that the control group statistically significantly outperformed the treatment group on the Word Recognition subtest (mean difference = - 46.09; difference standard error = 14.19; p-value = .023), and for no outcome did the treatment group perform better than the control group. **Fourth-grade** results indicate that the treatment group scored statistically significantly higher than the control group on the Reading Comprehension subtest (mean difference = 22.92; difference standard error = 3.78; p-value = .026). Moderate effect sizes were found for RSP scores with the summer school participants in Grades 1 and 4 outperforming the comparison group. Similarly, moderate effects were found favoring Grade 1 summer participants on Word Reading subtest scores for and Grade 4 summer participants on Syntactic Knowledge and Reading Comprehension subtest scores. However, the moderate effects on Word Recognition subtest scores found for Grade 3 favored the comparison group.

Other than the effects described above, no other RAPID scores demonstrated a statistically significant difference between the treatment and control groups. However, the use of the subtests allowed for detection of effects that would otherwise have been missed had analyses relied upon only an overall test of reading ability as was used in the past.

## Effect of CIM Supplemental Intervention

Only a subgroup of the lowest performing students received the supplemental pullout intervention (CIM) in small groups of 4 or fewer students. Because propensity scores successfully balance observable differences between the treatment and control groups for each grade level, the results reported above approximate causal statements. However, the analyses reported in this section about the effect of the CIM supplemental intervention should be considered only as exploratory—no causal assertion should be made in favor of or against its effect. The CIM models included RSP or Word Reading/Recognition scores as outcomes and two covariates (i.e., a dummy variable indicating if the student was receiving CIM or not, and the pretest corresponding to either the RSP or Word Reading/Recognition outcome). Results for these models can be found in Appendix C. The results suggest that, in most cases, students in the small-group intervention reduced the gap in their test performance with students that received only the core summer reading program. However, these results were statistically significant for Grade 1 only, on both the composite RSP (mean difference = -17.49; difference standard error = 7.73; p-value = .027) and the Word Reading subtest (mean difference = -42.16; difference standard error = 20.28; p-value = .041).

[2] Because no comparison group was possible for the RAPID testing in kindergarten, it is not possible to calculate the effects of the summer program for this measure.

## Effect of Summer School Attendance on RAPID Scores

We explored the effect of attendance on posttest scores by adding "number of days in attendance in summer school" as a third covariate in the models discussed in the previous section. Attendance was found to be statistically significant only for the Word Reading subtest in Grade 1 (mean estimate = 2.04; standard error = 0.90; p-value = .027).

## Effect of Attendance in CIM on RAPID Scores

Considering only the students who participated in the CIM supplemental intervention, we tested for the effect of CIM attendance (i.e., number of days attendance in the pullout) on students' posttest scores, controlling for their respective pretest scores. The only statistically significant effect of CIM attendance on RSP scores was found in Grade 1 (mean estimate = 1.00; standard error = 0.47; p-value = .046), and the only statistically significant effect of CIM attendance on a subtest score was for Word Reading/Recognition in Grade 1 (mean estimate = 6.53; standard error = 1.94; p-value = .003) and Grade 4 (mean estimate = -2.61; standard error = 1.20; p-value = .047). However, due to very small sample sizes within each grade level, we advise interpreting these results with caution.

## Effect of Summer School Program on FAST Scores

Means, standard deviations, and correlations among FAST scores during both pretest and posttest periods as well as student demographic information are reported by grade level in Appendix D. Correlations between FAST scores and RAPID composite scores (RSP) also are provided.

As with the analyses for RAPID scores, the analyses using FAST scores needed to account for the partially nested structure of the data because only students participating in the summer program were nested in classrooms. In addition, there were two separate control groups for which FAST scores could be compared to the treatment group: (a) students who were administered the RAPID assessment but did not participate in the summer school program and (b) students who were not administered the RAPID assessment. Analyses were performed in the R environment, using a user-created "pcluster" package, and were verified independently by an analyst in the SAS environment. Consequently, the data analyses for each grade level involved multiple steps:

1. Treatment and control groups were balanced by students' characteristics (i.e., gender, race, FRL, ELL, IEP, and date of birth) and FAST pretest score using propensity scores. For students who were in Kindergarten or first grade when the FAST pretest was administered, the Composite score was used as the pretest measure; for students in Grades 2 through 4, the Median Words Read Correctly per Minute was used as the pretest measure.
2. Propensity scores were then entered in the models as weights during the statistical analyses.
3. The statistical analyses were performed for each outcome and individual grade level. Because all student characteristics were balanced between the treatment and control groups by the propensity score weights, only the variable representing participation (or not) in summer school was included in the model.
4. All the main effects analyses took into account the nested structure of the treatment group via cluster standard errors.

### Main Effects

Main effect results of summer school program participation for FAST can be found in Appendix E. The standardized mean-difference effect sizes take into account the partially-nested structure of the data. When the control group consisted of students with RAPID scores that did not participate in the summer school program, there were no statistically significant differences in average FAST scores between the treatment and control groups at any grade level. However, when the control group consisted of students without RAPID scores, the control group in second grade statistically significantly outperformed the treatment group on the measure of Median Words Read Correctly (mean difference = -4.95; difference standard error = 1.57; p-value = .002). There were no other statistically significant differences between the treatment and control groups for any of the other grade levels.

The FAST analyses also show moderate effect sizes for Kindergarten and first-grade students outperforming the RAPID-administered control group. The other effect sizes were small or negligible.

One caveat to consider with these results is that many of the students were administered the FAST post-assessment several weeks into the fall semester. Therefore, other factors (e.g., academic year teacher effects, general maturation and learning in the first weeks of the new school year) could play a role in the observed growth beyond effects attributable to the summer program.

## Fidelity of Teachers' Wonders and WonderWorks Implementation

All core reading program teachers were audio recorded weekly to monitor their use of the intended materials for instruction and the fidelity with which they implemented Wonders and WonderWorks. The results presented below represent a sampling of the instruction delivered, rather than a full accounting of all instruction delivered in all classes. Fidelity results by grade level are provided in Appendix F.

### Materials Used

- All teachers used at least some of the Wonders or WordWorks materials.
- In 46% of observations, teachers used materials that were not a part of Wonders or WonderWorks, including:
    - Reading trade books not part of Wonders for teacher or student read alouds, "read to self," and readers theater
    - Materials for taking running records
    - Magnetic letters for letter/word work
    - Flashcards for drilling letters and sight words
    - Writing strategies for journaling, drawing, and responding to prompts
    - Games and worksheets for fluency, comprehension, phonics, or grammar practice
    - Other word games such as Go Noodle, Kahoot, Scrabble, Sight Word Board Games

## Fidelity of Whole-Group Wonders Reading and Language Arts Implementation

- In nearly all observations (97%), teachers attempted Whole Group Reading.
- In only 22% of observations did teachers attempt Whole Group Language Arts component of Wonders.
- As shown in Table 4 below, fidelity to the Wonders core instructional components ranged from 0-100%, with an average of 30% (SD = 23%). Note that the 100% fidelity was in Handwriting which was observed only once, so this is not a strong representation of fidelity for Handwriting. The more realistic high score was 64% for phonological awareness.

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Reading | | Follows the procedures as directed in the teacher's manual | Follows the suggested instructional routines | Adheres to the suggested timing | Uses the recommended corrective feedback procedures | Uses the suggested "Academic Language" | Implements the "Quick Reviews" | Implements the "Unit Opener" | Implements Access Complex Text (ACT) | | | | | |
| | % with fidelity | 29% | 30% | 31% | 25% | 50% | 0% | 67% | 8% | | | | | |
| | # obs | 66 | 63 | 59 | 12 | 56 | 31 | 3 | 37 | | | | | |
| | | Close Reading | Comp | Fluency | Handwriting | High Frequency Words | Introduce the Concept or Build Background | Listening Comp or Interactive Read-Aloud | Oral Language | Phonics | PA | Spelling | Structural analysis | Vocabulary |
| | % with fidelity | 19% | 45% | 29% | 100% | 9% | 56% | 22% | 25% | 19% | 64% | 9% | 17% | 39% |
| | # obs | 27 | 11 | 7 | 1 | 11 | 18 | 23 | 4 | 16 | 14 | 11 | 6 | 23 |
| Language Arts | | Follows the procedures as directed in the teacher's manual | Follows the suggested instructional routines | Adheres to the suggested timing | Uses the suggested "Academic Language" | Implements the "Daily Wrap Up" | Grammar | Spelling | Writing/Writing Process | | | | | |
| | % with fidelity | 25% | 18% | 25% | 13% | 0% | 33% | 0% | 50% | | | | | |
| | # obs | 12 | 11 | 8 | 8 | 8 | 6 | 2 | 4 | | | | | |

*Table 4.* Number of observations in which Wonders components were observed and the percent of fidelity of that implementation.

## Fidelity of WonderWorks Implementation in Teacher-led Small Groups

- 76% of observations had dedicated WonderWorks time just for students assigned to WonderWorks.
- For the 24% of observations that never met specifically for WonderWorks, WonderWorks materials were used during small-group rotations for all but one observation.[3]
- For those instructors who had a dedicated WonderWorks time, the small groups only met once in 48% of observations, and met twice in 52% of the observations.[4]
- In only 6% of observation did a teacher complete two separate WonderWorks lessons. Most teachers split a single WonderWorks lesson into two sessions in one day.[5]

[3] The CBCSD program had intended for WonderWorks to be assigned by need and not used by CIM students.
[4] The CBCSD program had intended for groups to meet with the teacher twice during the small-group rotations.
[5] The CBCSD program had intended for two WonderWorks lessons to be delivered daily.

- As shown in Table 5 below, fidelity of WonderWorks implementation ranged from 8-92%, with an average of 51% (SD = 25%).

| | Follows the procedures as directed in the teacher's manual | Follows the suggested instructional routines | Adheres to the suggested timing | Uses the recommended corrective feedback procedures | Implements the recommended "Quick Check" | Phonological Awareness | Phonemic awareness | Phonics | Build Fluency | High frequency words |
|---|---|---|---|---|---|---|---|---|---|---|
| % with fidelity | 35% | 35% | 35% | 20% | 20% | 75% | 64% | 46% | 59% | 47% |
| # obs | 55 | 48 | 55 | 25 | 15 | 12 | 36 | 35 | 17 | 30 |
| | Shared read | Oral vocabulary | Weekly Concept | Review vocabulary | Read/reread Complex Text | Respond to Reading | Before reading | During reading | After reading | Review and reteach |
| % with fidelity | 71% | 92% | 88% | 57% | 88% | 69% | 43% | 21% | 8% | 50% |
| # obs | 34 | 13 | 8 | 14 | 17 | 16 | 40 | 34 | 12 | 2 |

*Table 5.* Number of observations in which WonderWorks components were observed and the percent of fidelity of that implementation.

## Fidelity of Small-Group Rotations Within the Core Reading Instruction

- 6% of observations never had evidence of small-group rotations occurring, 15% had evidence of one small group, 21% had evidence of two small groups, 35% had evidence of three small groups, and 24% had evidence of four small groups.
    - In observations where there were two or more small groups, half varied the instructional activities between groups, and half provided the same instructional activities for all groups.
    - Instruction was more likely to vary when there were three or more groups than when there were only two groups.
- The most common materials used during small-group rotations was WonderWorks (39%). This was in addition to the WonderWorks dedicated time described for the teacher-led small groups.[6]
- In 34% of observations, teachers used the Wonders Differentiated Instruction materials.
- In only 11% of observations did small groups use the Foundational Skills Kit.
- Some teachers implemented Wonders Language Arts (5% of observations) or Reading (2% of observations) materials during small-group rotations, and other materials were used in an additional 11% of observations.
- As shown in Table 6, fidelity of implementation ranged from 0-75%, with an average of 18% (SD = 27%)

| | Wonders Differentiated Instruction | | | | | | | | Wonders Foundational Skills Kit | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Leveled/Paired Shared Reader | PA | Phonics Decoding | Vocabulary Oral Vocabulary | Comprehension | High-frequency words | Structural analysis | Writing Spelling | Phonics | Structural Analysis |
| % with fidelity | 3% | 52% | 19% | 0% | 0% | 0% | 0% | 0% | 33% | 75% |
| # obs | 29 | 23 | 26 | 2 | 6 | 9 | 4 | 3 | 12 | 8 |

*Table 6.* Number of observations in which Wonders Differentiated Instruction and Wonders Foundational Skills Kit components were observed and the percent of fidelity of that implementation.

[6] The CBCSD program had intended for WonderWorks to be assigned by need and not used by CIM students.

### Anecdotal Comments Regarding Wonders and WonderWorks Implementation

- Teachers seemed to struggle with completing all Wonders and WonderWorks activities in the allotted time. This could be due to a lack of familiarity with the components of the curricula and how to implement them. Improving teachers' ability to meet deliver the instruction according to suggested times would make it more likely that all components could be completed and multiple WonderWorks lessons could be delivered in a day.
- Some components generally were neglected: Quick Reviews, Unit Openers, Quick Checks, and Daily Wrap Ups.
- Teachers also seemed to lack familiarity with the instructional routines, corrective feedback, and Access Complex Text activities. Often the elements of gradual release (modeling, guided practice, and independent practice) were combined, or one or more elements were skipped.
- Teachers appeared to underutilize the Differentiated Instruction portion of Wonders and rely heavily on WonderWorks for their small-group instruction.

## Fidelity of Teachers' CIM Implementation

All supplemental pullout reading intervention teachers were audio recorded weekly to monitor their use of the intended materials for instruction and the fidelity with which they implemented CIM. The results presented below represent a sampling of the instruction delivered, rather than a full accounting of all instruction delivered in all classes. Fidelity results by grade level are provided in Appendix E.

### CIM Lesson Components

- A total of 75 CIM intervention groups were observed.
- On average, 2 students (SD = 1) were in each group observed.
- As shown in Figure 1, 53% of the groups observed were focused on reading skills. However, very few of these groups (1%) had an exclusive focus on reading. About 20% of the CIM groups observed had an equal balance of focus on reading and writing skills, and about a quarter focused mostly on writing.

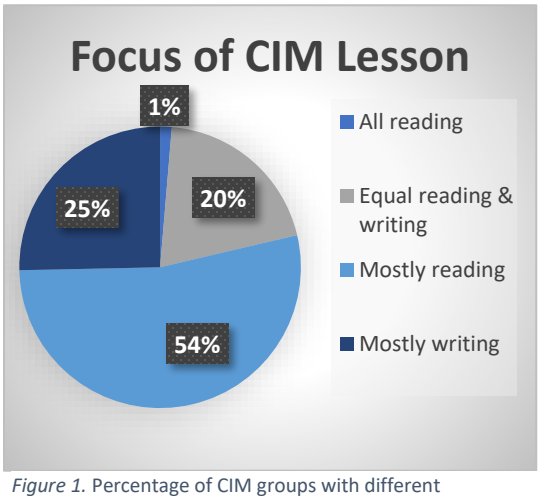


*Figure 1.* Percentage of CIM groups with different instructional emphases

- Generally, interventionists implemented a combination of CIM components (e.g., Interactive Writing Phase 1 with Guided Reading Plus Phase 1) in observed lessons. Very few implemented only a single component, so the data in Table 7 below are overlapping.
- Very rarely did interventionists combine phases (e.g., Interactive Writing Phase 1 with Guided Reading Plus Phase 2) in observed lessons.

- Very rarely did interventionists include Reading Recovery in observed lessons. When Reading Recovery was included, it was always paired with other CIM components.
- Two activities were never observed: Reading Recovery practice of Cut-up sentences or student led literature discussions.

| Guided Reading Plus Phase 1 | Guided Reading Plus Phase 2 | Interactive Writing Phase 1 | Interactive Writing Phase 2 | Interactive Writing Phase 1, Guided Reading Plus Phase 1 | Interactive Writing Phase 2, Guided Reading Plus Phase 2 | Interactive Writing Phase 1, Guided Reading Plus Phase 2 | Interactive Writing Phase 1, Guided Reading Plus Phase 1, Guided Reading Plus Phase 2, Reading Recovery/Tier 3 (1:1) | Interactive Writing Phase 1, Guided Reading Plus Phase 1, Reading Recovery/Tier 3 (1:1) |
|---|---|---|---|---|---|---|---|---|
| 5.3% | 2.7% | 2.7% | 1.3% | 46.7% | 33.3% | 1.3% | 1.3% | 5.3% |

*Table 7.* Percent of observations in which CIM components were observed.

## Fidelity of Overall CIM Practices

As shown in Table 8 below, fidelity to overall CIM practices ranged from 99-100% with an average of 100% (SD = 1%) in the observed lessons.

| | Anecdotal notes | Rubrics | Running records | Lesson plans | Anchor charts | Graph of text level | Scaffolding | Changing of charts | Multiple modalities for materials | Writing checklists | Reading checklists |
|---|---|---|---|---|---|---|---|---|---|---|---|
| % with fidelity | 100% | 100% | 100% | 100% | 100% | 100% | 99% | 100% | 99% | 100% | 100% |
| # obs | 2 | 1 | 24 | 3 | 19 | 1 | 75 | 4 | 73 | 40 | 51 |

*Table 8.* Number of observations in which CIM practices were observed and the percent of fidelity of that implementation.

## CIM Writing Components

### Fidelity of CIM Writing

- As shown in Table 9, fidelity to teacher practices for CIM Writing ranged from 86-100% with an average of 96% (SD = 5%) in the observed lessons.
- Across observations, fidelity to student practices for CIM Writing ranged from 86-99% with an average of 94% (SD = 7%)

| | | Teacher to student talk ratio is balanced | States focus | Mini-lesson | Reviews or creates charts/checklists | Personal dictionaries | Phonics: Letter/Word Work | Fluent Writing | Sharing individual message | Writing prompt | Share student writing/group journals | Teacher conferring during independent writing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Teacher | % with fidelity | 86% | 100% | 92% | 100% | 100% | 100% | 97% | 96% | 100% | 86% | 94% |
| | # obs | 72 | 72 | 51 | 42 | 15 | 61 | 64 | 25 | 29 | 22 | 35 |

| | | Engaged in writing and following all routines | Use materials or manipulatives (e.g., journals, writing checklists, student texts | Compose/record/share an independent message that incorporates group learning |
|---|---|---|---|---|
| Student | % with fidelity | 86% | 99% | 97% |
| | # obs | 71 | 71 | 29 |

*Table 9.* Number of observations in which teacher and student CIM Writing components were observed and the percent of fidelity of that implementation.

## CIM Reading Components

### Types of Reading Observed

Students had a variety of opportunities to read new or familiar text aloud or independently. The most common reading practice (19% of observations) was for students to read aloud a new text (individually or chorally) and then engage in independently reading the new text. Summing across the categories of teacher read alouds in Table 10 below, 11% of observations combined the teacher's reading of a new or familiar text with some form of student reading of the text.

| Type of Reading | % Observed |
|---|---|
| Student independent reading of new text | 1% |
| Student individual or choral read aloud of familiar text | 17% |
| Student individual or choral read aloud of familiar text, Student independent reading of familiar text | 19% |
| Student individual or choral read aloud of new text | 5% |
| Student individual or choral read aloud of new text, Student independent reading of familiar text | 1% |
| Student individual or choral read aloud of new text, Student independent reading of new text | 35% |
| Student individual or choral read aloud of new text, Student individual or choral read aloud of familiar text | 8% |
| Student individual or choral read aloud of new text, Student individual or choral read aloud of familiar text, Student independent reading of familiar text | 1% |
| Student individual or choral read aloud of new text, Student individual or choral read aloud of familiar text, Student independent reading of new text, Student independent reading of familiar text | 1% |
| Teacher read aloud of familiar text, Student individual or choral read aloud of familiar text | 3% |
| Teacher read aloud of familiar text, Student individual or choral read aloud of familiar text, Student independent reading of familiar text | 1% |
| Teacher read aloud of new text, Student individual or choral read aloud of new text | 3% |
| Teacher read aloud of new text, Student individual or choral read aloud of new text, Student independent reading of new text | 1% |
| Teacher read aloud of new text, Teacher read aloud of familiar text, Student individual or choral read aloud of new text, Student individual or choral read aloud of familiar text | 3% |

*Table 10.* Number of observations in which different types of reading were observed and the percent of fidelity of that implementation.

### Fidelity of CIM Reading

- As shown in Table 11 below, fidelity to teacher practices for CIM Reading ranged from 79-100% with an average of 94% (SD = 7%)
- Across observation, fidelity to student practices for CIM Reading ranged from 30-100% with an average of 79% (SD = 33%)

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Teacher | | Teacher to student talk ratio is balanced | States focus | Phonological/Phonemic Awareness | Phonics: Letters/Word Work | Examine and expand vocabulary | Mini-lesson related to comprehension | Personal dictionaries | Orientation to New Text/Book Orientation | Discussion about comprehension during and/or after the reading | Teacher conferences during reading |
| | % with fidelity | 87% | 91% | 98% | 100% | 94% | 79% | 100% | 100% | 100% | 96% |
| | # obs | 75 | 74 | 52 | 54 | 35 | 14 | 12 | 45 | 68 | 73 |

| | | | | | |
|---|---|---|---|---|---|
| Student | | Engaged in reading and following all routines | Use manipulatives/materials | Students share strategic processes with teacher during conference | Respond/reflecting on reading |
| | % with fidelity | 87% | 100% | 30% | 99% |
| | # obs | 75 | 69 | 71 | 67 |

*Table 11.* Number of observations in which teacher and student CIM Reading components were observed and the percent of fidelity of that implementation.

## Anecdotal Comments Regarding CIM Implementation

In general, CIM implementation fidelity appeared stronger than teachers' fidelity of implementing Wonders and WonderWorks. However, it is important to understand that fidelity is more difficult to achieve with a highly explicit curriculum such as Wonders than for a more flexible instructional framework such as CIM. For example, a Wonders phonological awareness activity might have four steps, so skipping just one step would result in scoring the lesson as lacking fidelity. On the other hand, if a CIM interventionist did a writing mini-lesson, only a glaring inaccuracy (e.g., inappropriately using the word *where* for *were*) would result in scoring the lessons as lacking fidelity.

Although overall fidelity was high for CIM, some areas could be improved. Interventionists were rarely observed delivering minilessons to teach students how to comprehend a text. Rather, teachers more often monitored students' comprehension by asking them questions about the text. Similarly, there were few instances of students sharing their writing or their strategic and metacognitive processes while reading.

# Appendix A

## RAPID Descriptive Statistics by Grade Level

### Kindergarten

The cells shaded in blue show the correlations between Spring (Pretest) and Fall (Posttest) administrations of the same RAPID subtest/composite. The FAST composite score from Spring is used as the FAST Pre measure.

*Correlations, Means, & Standard Deviations*

| | RSP Pre | WRead Pre | VP Pre | PA Pre | RSP Post | WRead Post | VP Post | PA Post | FAST Pre |
|---|---|---|---|---|---|---|---|---|---|
| RSP Pre | 1.00 | 0.80 | 0.14 | 0.87 | 0.87 | 0.69 | 0.08 | 0.74 | 0.63 |
| WRead Pre | | 1.00 | 0.18 | 0.58 | 0.80 | 0.83 | 0.12 | 0.67 | 0.66 |
| VP Pre | | | 1.00 | 0.12 | -0.06 | -0.05 | 0.56 | 0.04 | 0.22 |
| PA Pre | | | | 1.00 | 0.78 | 0.56 | 0.11 | 0.74 | 0.56 |
| RSP Post | | | | | 1.00 | 0.74 | 0.06 | 0.87 | 0.72 |
| WRead Post | | | | | | 1.00 | 0.04 | 0.47 | 0.78 |
| VP Post | | | | | | | 1.00 | 0.17 | 0.21 |
| PA Post | | | | | | | | 1.00 | 0.62 |
| FAST Pre | | | | | | | | | 1.00 |
| Mean | 43.0 | 269.7 | 381.9 | 396.3 | 48.9 | 282.7 | 406.5 | 426.7 | 61.7 |
| SD | 27.2 | 127.0 | 69.0 | 120.8 | 26.5 | 106.8 | 73.6 | 126.8 | 7.7 |
| N | 201 | 201 | 201 | 201 | 69 | 67 | 69 | 69 | 205 |

*Means and Standard Deviations for Treatment and Control Groups*

| | | | Mean | SD | N | Min | Max |
|---|---|---|---|---|---|---|---|
| RSP | Treatment | Pre | 47.5 | 27.3 | 84 | 1 | 99 |
| | | Post | 49.9 | 26.1 | 67 | 1 | 99 |
| | Control | Pre | 39.8 | 26.7 | 117 | 1 | 99 |
| | | Post | - | - | - | - | - |
| WRead | Treatment | Pre | 282.0 | 114.7 | 84 | 0 | 425 |
| | | Post | 282.7 | 106.8 | 67 | 0 | 559 |
| | Control | Pre | 260.8 | 135.0 | 117 | 0 | 1000 |
| | | Post | - | - | - | - | - |
| VP | Treatment | Pre | 386.1 | 69.1 | 84 | 250 | 579 |
| | | Post | 405.8 | 72.0 | 67 | 251 | 638 |
| | Control | Pre | 378.9 | 69.1 | 117 | 218 | 638 |
| | | Post | - | - | - | - | - |
| PA | Treatment | Pre | 416.5 | 115.7 | 84 | 88 | 900 |
| | | Post | 432.1 | 122.2 | 67 | 19 | 900 |
| | Control | Pre | 381.8 | 122.8 | 117 | 0 | 900 |
| | | Post | - | - | 121 | - | - |

## First Grade

The cells shaded in blue show the correlations between Spring (Pretest) and Fall (Posttest) administrations of the same RAPID subtest/composite. The FAST composite score from Spring is used as the FAST Pre measure.

*Correlations, Means, & Standard Deviations*

| | RSP Pre | WRead Pre | VP Pre | FD Pre | RSP Post | WRead Post | VP Post | FD Post | FAST Pre |
|---|---|---|---|---|---|---|---|---|---|
| RSP Pre | 1.00 | 0.69 | 0.63 | 0.30 | 0.54 | 0.42 | 0.39 | 0.27 | 0.52 |
| WRead Pre | | 1.00 | 0.29 | 0.26 | 0.42 | 0.59 | 0.28 | 0.19 | 0.61 |
| VP Pre | | | 1.00 | 0.27 | 0.38 | 0.25 | 0.41 | 0.26 | 0.36 |
| FD Pre | | | | 1.00 | 0.18 | 0.14 | 0.24 | 0.60 | 0.28 |
| RSP Post | | | | | 1.00 | 0.72 | 0.62 | 0.28 | 0.53 |
| WRead Post | | | | | | 1.00 | 0.22 | 0.25 | 0.58 |
| VP Post | | | | | | | 1.00 | 0.21 | 0.26 |
| FD Post | | | | | | | | 1.00 | 0.30 |
| FAST Pre | | | | | | | | | 1.00 |
| Mean | 28.7 | 433.7 | 458.1 | 445.7 | 31.2 | 432.6 | 464.8 | 477.8 | 52.1 |
| SD | 26.6 | 107.6 | 87.8 | 110.7 | 29.2 | 130.2 | 93.4 | 109.8 | 15.3 |
| N | 210 | 210 | 210 | 210 | 202 | 202 | 202 | 202 | 214 |

*Means and Standard Deviations for Treatment and Control Groups*

| | | | Mean | SD | N | Min | Max |
|---|---|---|---|---|---|---|---|
| RSP | Treatment | Pre | 31.4 | 28.7 | 79 | 1 | 95 |
| | | Post | 40.7 | 30.2 | 81 | 1 | 96 |
| | Control | Pre | 27.1 | 25.2 | 131 | 1 | 96 |
| | | Post | 24.9 | 26.8 | 121 | 1 | 99 |
| WRead | Treatment | Pre | 446.4 | 92.1 | 79 | 115 | 576 |
| | | Post | 475.1 | 75.7 | 81 | 204 | 584 |
| | Control | Pre | 426.0 | 115.7 | 131 | 0 | 576 |
| | | Post | 404.1 | 150.1 | 121 | 0 | 1000 |
| VP | Treatment | Pre | 453.1 | 98.4 | 79 | 205 | 704 |
| | | Post | 470.7 | 94.4 | 81 | 199 | 798 |
| | Control | Pre | 461.2 | 81.0 | 131 | 220 | 670 |
| | | Post | 460.8 | 92.9 | 121 | 199 | 683 |
| FD | Treatment | Pre | 459.5 | 98.8 | 79 | 131 | 721 |
| | | Post | 488.6 | 99.7 | 81 | 63 | 718 |
| | Control | Pre | 437.3 | 116.8 | 131 | 40 | 722 |
| | | Post | 470.5 | 115.9 | 121 | 0 | 1000 |

## Second Grade

The cells shaded in blue show the correlations between Spring (Pretest) and Fall (Posttest) administrations of the same RAPID subtest/composite. The FAST composite score from Spring is used as the FAST Pre measure.

*Correlations, Means, & Standard Deviations*

| | RSP Pre | WRead Pre | VP Pre | FD Pre | SP Pre | RSP Post | WRead Post | VP Post | FD Post | SP Post | FASTPre |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RSP Pre | 1.00 | 0.50 | 0.48 | 0.61 | 0.80 | 0.75 | 0.41 | 0.37 | 0.38 | 0.66 | 0.56 |
| WRead Pre | | 1.00 | 0.27 | 0.27 | 0.55 | 0.48 | 0.45 | 0.29 | 0.24 | 0.47 | 0.58 |
| VP Pre | | | 1.00 | 0.39 | 0.20 | 0.42 | 0.21 | 0.58 | 0.35 | 0.25 | 0.34 |
| FD Pre | | | | 1.00 | 0.29 | 0.45 | 0.22 | 0.35 | 0.51 | 0.31 | 0.36 |
| SP Pre | | | | | 1.00 | 0.64 | 0.56 | 0.17 | 0.26 | 0.76 | 0.61 |
| RSP Post | | | | | | 1.00 | 0.46 | 0.48 | 0.62 | 0.82 | 0.58 |
| WRead Post | | | | | | | 1.00 | 0.20 | 0.22 | 0.55 | 0.58 |
| VP Post | | | | | | | | 1.00 | 0.30 | 0.22 | 0.36 |
| FD Post | | | | | | | | | 1.00 | 0.34 | 0.30 |
| SP Post | | | | | | | | | | 1.00 | 0.64 |
| FAST Pre | | | | | | | | | | | 1.00 |

| | RSP Pre | WRead Pre | VP Pre | FD Pre | SP Pre | RSP Post | WRead Post | VP Post | FD Post | SP Post | FASTPre |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 36.0 | 521.0 | 532.9 | 532.4 | 546.2 | 39.7 | 547.6 | 561.4 | 573.0 | 536.6 | 73.3 |
| SD | 28.0 | 85.2 | 84.6 | 139.5 | 120.5 | 28.8 | 97.6 | 89.9 | 125.7 | 125.3 | 27.5 |
| N | 282 | 284 | 283 | 282 | 283 | 274 | 274 | 274 | 274 | 274 | 290 |

*Means and Standard Deviations for Treatment and Control Groups*

| | | | Mean | SD | N | Min | Max |
|---|---|---|---|---|---|---|---|
| RSP | Treatment | Pre | 39.1 | 27.9 | 93 | 1 | 94 |
| | | Post | 44.7 | 28.6 | 95 | 1 | 98 |
| | Control | Pre | 34.4 | 28.0 | 189 | 1 | 98 |
| | | Post | 37.0 | 28.7 | 179 | 1 | 98 |
| WRead | Treatment | Pre | 524.3 | 77.2 | 93 | 115 | 722 |
| | | Post | 558.6 | 78.5 | 95 | 382 | 1000 |
| | Control | Pre | 519.4 | 89.0 | 191 | 0 | 706 |
| | | Post | 541.8 | 106.1 | 179 | 115 | 1000 |
| VP | Treatment | Pre | 538.9 | 69.4 | 93 | 356 | 747 |
| | | Post | 562.7 | 70.7 | 95 | 436 | 740 |
| | Control | Pre | 529.9 | 91.1 | 190 | 266 | 767 |
| | | Post | 560.8 | 98.8 | 179 | 342 | 1000 |
| FD | Treatment | Pre | 546.5 | 136.7 | 93 | 245 | 1000 |
| | | Post | 593.3 | 115.8 | 95 | 170 | 806 |
| | Control | Pre | 525.5 | 140.7 | 189 | 0 | 1000 |
| | | Post | 562.2 | 129.6 | 179 | 56 | 1000 |
| SP | Treatment | Pre | 564.7 | 105.3 | 93 | 276 | 789 |
| | | Post | 563.7 | 102.1 | 95 | 343 | 778 |
| | Control | Pre | 537.1 | 126.5 | 190 | 100 | 789 |
| | | Post | 522.3 | 134.1 | 179 | 100 | 789 |

## Third Grade

The cells shaded in blue show the correlations between Spring (Pretest) and Fall (Posttest) administrations of the same RAPID subtest/composite. The FAST composite score from Spring is used as the FAST Pre measure.

### *Correlations, Means, & Standard Deviations*

| | RSP Pre | WRec Pre | VK Pre | SK Pre | RC Pre | RSP Post | WRec Post | VK Post | SK Post | RC Post | FASTPre |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RSP Pre | 1.00 | 0.65 | 0.42 | 0.41 | 0.85 | 0.60 | 0.39 | 0.41 | 0.36 | 0.56 | 0.57 |
| WRec Pre | | 1.00 | 0.20 | 0.22 | 0.44 | 0.43 | 0.39 | 0.24 | 0.18 | 0.38 | 0.49 |
| VK Pre | | | 1.00 | 0.19 | 0.32 | 0.26 | 0.14 | 0.38 | 0.08 | 0.24 | 0.40 |
| SK Pre | | | | 1.00 | 0.39 | 0.36 | 0.24 | 0.20 | 0.32 | 0.33 | 0.32 |
| RC Pre | | | | | 1.00 | 0.51 | 0.30 | 0.33 | 0.35 | 0.52 | 0.49 |
| RSP Post | | | | | | 1.00 | 0.63 | 0.42 | 0.40 | 0.85 | 0.54 |
| WRec Post | | | | | | | 1.00 | 0.26 | 0.24 | 0.40 | 0.49 |
| VK Post | | | | | | | | 1.00 | 0.30 | 0.34 | 0.46 |
| SK Post | | | | | | | | | 1.00 | 0.36 | 0.28 |
| RC Post | | | | | | | | | | 1.00 | 0.48 |
| FAST Pre | | | | | | | | | | | 1.00 |
| Mean | 25.5 | 304.8 | 368.7 | 331.7 | 329.5 | 25.9 | 312.9 | 374.7 | 344.0 | 330.4 | 99.6 |
| SD | 28.6 | 135.7 | 72.2 | 92.9 | 54.9 | 28.5 | 126.4 | 70.9 | 93.5 | 54.1 | 37.9 |
| N | 326 | 326 | 326 | 326 | 326 | 306 | 309 | 307 | 306 | 306 | 328 |

*Means and Standard Deviations for Treatment and Control Groups*

| | | | Mean | SD | N | Min | Max |
|---|---|---|---|---|---|---|---|
| RSP | Treatment | Pre | 22.4 | 26.1 | 93 | 1 | 99 |
| | | Post | 22.6 | 26.1 | 92 | 1 | 98 |
| | Control | Pre | 26.8 | 29.5 | 233 | 1 | 99 |
| | | Post | 27.3 | 29.4 | 214 | 1 | 99 |
| WRec | Treatment | Pre | 296.5 | 145.3 | 93 | 0 | 872 |
| | | Post | 280.6 | 114.1 | 92 | 0 | 601 |
| | Control | Pre | 308.1 | 131.8 | 233 | 0 | 1000 |
| | | Post | 326.6 | 129.1 | 217 | 0 | 906 |
| VK | Treatment | Pre | 363.4 | 81.3 | 93 | 0 | 590 |
| | | Post | 367.0 | 78.3 | 92 | 0 | 644 |
| | Control | Pre | 370.8 | 68.3 | 233 | 0 | 752 |
| | | Post | 378.1 | 67.3 | 215 | 0 | 651 |
| SK | Treatment | Pre | 316.9 | 100.0 | 93 | 0 | 501 |
| | | Post | 334.1 | 93.9 | 92 | 0 | 544 |
| | Control | Pre | 337.6 | 89.4 | 233 | 0 | 606 |
| | | Post | 348.3 | 93.3 | 214 | 0 | 669 |
| RC | Treatment | Pre | 327.1 | 45.7 | 93 | 215 | 475 |
| | | Post | 326.7 | 60.5 | 92 | 0 | 493 |
| | Control | Pre | 330.5 | 58.2 | 233 | 84 | 533 |
| | | Post | 332.0 | 51.2 | 214 | 224 | 554 |

## Fourth Grade

The cells shaded in blue show the correlations between Spring (Pretest) and Fall (Posttest) administrations of the same RAPID subtest/composite. The FAST composite score from Spring is used as the FAST Pre measure.

### *Correlations, Means, & Standard Deviations*

| | RSP Pre | WRec Pre | VK Pre | SK Pre | RC Pre | RSP Post | WRec Post | VK Post | SK Post | RC Post | FASTPre |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RSP Pre | 1.00 | 0.29 | 0.51 | 0.42 | 0.83 | 0.50 | 0.21 | 0.36 | 0.34 | 0.43 | 0.37 |
| WRec Pre | | 1.00 | 0.17 | 0.27 | 0.36 | 0.29 | 0.23 | 0.22 | 0.17 | 0.28 | 0.30 |
| VK Pre | | | 1.00 | 0.33 | 0.37 | 0.38 | 0.20 | 0.48 | 0.35 | 0.37 | 0.44 |
| SK Pre | | | | 1.00 | 0.44 | 0.36 | 0.18 | 0.33 | 0.41 | 0.38 | 0.40 |
| RC Pre | | | | | 1.00 | 0.45 | 0.20 | 0.33 | 0.34 | 0.45 | 0.47 |
| RSP Post | | | | | | 1.00 | 0.34 | 0.60 | 0.45 | 0.85 | 0.44 |
| WRec Post | | | | | | | 1.00 | 0.37 | 0.25 | 0.38 | 0.33 |
| VK Post | | | | | | | | 1.00 | 0.41 | 0.47 | 0.45 |
| SK Post | | | | | | | | | 1.00 | 0.50 | 0.45 |
| RC Post | | | | | | | | | | 1.00 | 0.51 |
| FAST Pre | | | | | | | | | | | 1.00 |
| Mean | 13.6 | 381.4 | 381.5 | 396.1 | 356.4 | 17.6 | 375.4 | 387.5 | 412.4 | 362.4 | 116.1 |
| SD | 23.0 | 105.6 | 93.1 | 113.0 | 61.8 | 27.4 | 110.4 | 103.3 | 112.2 | 73.0 | 32.9 |
| N | 266 | 266 | 266 | 266 | 266 | 263 | 264 | 264 | 263 | 263 | 276 |

*Means and Standard Deviations for Treatment and Control Groups*

| | | | Mean | SD | N | Min | Max |
|---|---|---|---|---|---|---|---|
| RSP | Treatment | Pre | 13.2 | 21.9 | 54 | 1 | 99 |
| | | Post | 24.8 | 32.9 | 55 | 1 | 99 |
| | Control | Pre | 13.7 | 23.3 | 212 | 1 | 99 |
| | | Post | 15.7 | 25.6 | 208 | 1 | 99 |
| WRec | Treatment | Pre | 384.2 | 100.0 | 54 | 124 | 600 |
| | | Post | 380.3 | 100.1 | 55 | 135 | 895 |
| | Control | Pre | 380.7 | 107.1 | 212 | 0 | 880 |
| | | Post | 374.1 | 113.1 | 209 | 0 | 1000 |
| VK | Treatment | Pre | 388.7 | 86.6 | 54 | 150 | 579 |
| | | Post | 400.8 | 80.7 | 55 | 177 | 590 |
| | Control | Pre | 379.7 | 94.8 | 212 | 0 | 696 |
| | | Post | 384.0 | 108.3 | 209 | 0 | 723 |
| SK | Treatment | Pre | 410.1 | 94.6 | 54 | 112 | 581 |
| | | Post | 437.8 | 104.0 | 55 | 195 | 700 |
| | Control | Pre | 392.5 | 117.2 | 212 | 0 | 713 |
| | | Post | 405.7 | 113.5 | 208 | 0 | 713 |
| RC | Treatment | Pre | 362.7 | 63.6 | 54 | 252 | 559 |
| | | Post | 382.5 | 79.0 | 55 | 260 | 580 |
| | Control | Pre | 354.8 | 61.4 | 212 | 242 | 569 |
| | | Post | 357.0 | 70.5 | 208 | 214 | 693 |

# Appendix B

## Main Effects Model Results for RAPID *(all students in summer program)*

| Grade | Outcome | Mean Difference | Standard Error | t statistic | p-value | Effect Size |
|---|---|---|---|---|---|---|
| 1 | RSP | 14.222 | 5.575 | 2.551 | 0.011 * | 0.527 |
| 1 | WRead | 54.639 | 13.671 | 3.997 | 0.007 * | 0.499 |
| 1 | VP | 10.160 | 10.207 | 0.995 | 0.358 | 0.112 |
| 1 | FD | 6.982 | 6.681 | 1.045 | 0.336 | 0.065 |
| 2 | RSP | 3.817 | 6.318 | 0.604 | 0.546 | 0.131 |
| 2 | WRead | 5.377 | 4.861 | 1.106 | 0.311 | 0.068 |
| 2 | VP | -4.727 | 8.513 | -0.555 | 0.599 | -0.053 |
| 2 | FD | 18.803 | 12.189 | 1.543 | 0.174 | 0.130 |
| 2 | SP | 15.145 | 5.577 | 2.715 | 0.035 * | 0.124 |
| 3 | RSP | -2.474 | 5.801 | -0.426 | 0.670 | -0.085 |
| 3 | WRec | -46.088 | 14.191 | -3.248 | 0.023 * | -0.340 |
| 3 | VK | -4.132 | 9.666 | -0.428 | 0.687 | -0.055 |
| 3 | SK | -1.569 | 14.063 | -0.112 | 0.916 | -0.016 |
| 3 | RC | -3.344 | 3.302 | -1.013 | 0.358 | -0.060 |
| 4 | RSP | 9.439 | 5.125 | 1.842 | 0.066 | 0.407 |
| 4 | WRec | 6.111 | 12.381 | 0.494 | 0.670 | 0.057 |
| 4 | VK | 6.159 | 10.445 | 0.590 | 0.615 | 0.065 |
| 4 | SK | 30.403 | 20.046 | 1.517 | 0.269 | 0.270 |
| 4 | RC | 22.922 | 3.781 | 6.063 | 0.026 * | 0.369 |

*Note.* * = Statistically significant results at $\alpha < .05$.

# Appendix C

## CIM Model Results *(subgroup of students receiving pullout, supplemental intervention)*

| Grade | Outcome | Mean Difference | Standard Error | t statistic | p-value | |
|---|---|---|---|---|---|---|
| K | RSP | -4.116 | 5.083 | -0.810 | 0.421 | |
| K | WRead | -35.812 | 21.754 | -1.646 | 0.105 | |
| 1 | RSP | -17.490 | 7.730 | -2.263 | 0.027 | * |
| 1 | WRead | -42.162 | 20.284 | -2.079 | 0.041 | * |
| 2 | RSP | -0.309 | 5.112 | -0.060 | 0.952 | |
| 2 | WRead | -15.644 | 14.393 | -1.087 | 0.280 | |
| 3 | RSP | -3.979 | 5.149 | -0.773 | 0.442 | |
| 3 | WRec | 12.186 | 24.953 | 0.488 | 0.626 | |
| 4 | RSP | -11.628 | 9.469 | -1.228 | 0.225 | |
| 4 | WRec | -1.668 | 23.631 | -0.071 | 0.944 | |

*Note.* * = Statistically significant results.

# Appendix D

## FAST Descriptive Statistics by Grade Level

### Kindergarten

*Correlations*

| | FAST | | RAPID | |
|---|---|---|---|---|
| | Comp Spring | Comp Fall | RSP Pre | RSP Post |
| Comp Spring | 1.00 | 0.85 | 0.63 | 0.73 |
| Comp Fall | | 1.00 | 0.57 | 0.55 |
| RSP Pre | | | 1.00 | 0.87 |
| RSP Post | | | | 1.00 |

*FAST Composite Scores: Treatment vs. Control*

| Group | Test | Mean | SD | N | Min | Max |
|---|---|---|---|---|---|---|
| Treatment | Spring | 62.9 | 7.3 | 86 | 41 | 79 |
| | Fall | 37.2 | 11.3 | 86 | 19 | 85 |
| Control (w/ RAPID) | Spring | 61.5 | 7.6 | 99 | 38 | 75 |
| | Fall | 31.9 | 6.9 | 99 | 18 | 48 |
| Control (w/o RAPID) | Spring | 72.8 | 9.7 | 421 | 37 | 114 |
| | Fall | 49.0 | 16.9 | 421 | 18 | 127 |
| Overall | Spring | 69.5 | 10.3 | 606 | 37 | 114 |
| | Fall | 44.5 | 16.5 | 606 | 18 | 127 |

*Demographics*

| **Percentage** | Female | Black | Hispanic | White | FRL | ELL | IEP |
|---|---|---|---|---|---|---|---|
| Treatment | 43.0% | 4.7% | 17.4% | 75.6% | 34.9% | 14.0% | 50.0% |
| Control (w/ RAPID) | 47.5% | 14.1% | 14.1% | 70.7% | 45.5% | 12.1% | 45.5% |
| Control (w/o RAPID) | 49.2% | 5.2% | 10.5% | 81.7% | 32.5% | 7.6% | 28.5% |

## Grade 1

### *Correlations*

| | FAST | | RAPID | |
|---|---|---|---|---|
| | Comp Spring | Median WRC Fall | RSP Pre | RSP Post |
| Comp Spring | 1.00 | 0.89 | 0.51 | 0.53 |
| Median WRC Fall | | 1.00 | 0.52 | 0.60 |
| RSP Pre | | | 1.00 | 0.54 |
| RSP Post | | | | 1.00 |

### *FAST Scores: Treatment vs. Control*

| Group | Test | Mean | SD | N | Min | Max |
|---|---|---|---|---|---|---|
| Treatment | Spring (Comp) | 55.0 | 14.6 | 80 | 18 | 106 |
| | Fall (WRC) | 38.2 | 23.2 | 80 | 4 | 148 |
| Control (w/ RAPID) | Spring (Comp) | 50.3 | 15.3 | 121 | 17 | 99 |
| | Fall (WRC) | 27.4 | 17.8 | 121 | 0 | 90 |
| Control (w/o RAPID) | Spring (Comp) | 84.0 | 22.4 | 447 | 15 | 159 |
| | Fall (WRC) | 79.3 | 33.9 | 447 | 0 | 215 |
| Overall | Spring (Comp) | 74.1 | 25.2 | 648 | 15 | 159 |
| | Fall (WRC) | 64.5 | 37.5 | 648 | 0 | 215 |

### *Demographics*

| **Percentage** | Female | Black | Hispanic | White | FRL | ELL | IEP |
|---|---|---|---|---|---|---|---|
| Treatment | 38.8% | 5.0% | 13.8% | 77.5% | 27.5% | 12.5% | 46.3% |
| Control (w/ RAPID) | 38.0% | 7.4% | 14.9% | 76.0% | 39.7% | 14.1% | 48.8% |
| Control (w/o RAPID) | 51.9% | 4.5% | 14.8% | 79.2% | 34.0% | 7.4% | 52.8% |

## Grade 2

### *Correlations*

| | FAST | | RAPID | |
|---|---|---|---|---|
| | Median WC Spring | Median WRC Fall | RSP Pre | RSP Post |
| Median WC Spring | 1.00 | 0.94 | 0.56 | 0.58 |
| Median WRC Fall | | 1.00 | 0.51 | 0.55 |
| RSP Pre | | | 1.00 | 0.75 |
| RSP Post | | | | 1.00 |

### *FAST Scores (Words Correct per Minute): Treatment vs. Control*

| Group | Test | Mean | SD | N | Min | Max |
|---|---|---|---|---|---|---|
| Treatment | Spring | 77.6 | 24.5 | 94 | 14 | 137 |
| | Fall | 70.0 | 25.3 | 94 | 13 | 146 |
| Control (w/ RAPID) | Spring | 71.2 | 28.7 | 177 | 8 | 139 |
| | Fall | 63.8 | 28.1 | 177 | 5 | 135 |
| Control (w/o RAPID) | Spring | 124.4 | 30.7 | 364 | 6 | 220 |
| | Fall | 118.2 | 30.9 | 364 | 11 | 240 |
| Overall | Spring | 102.7 | 38.7 | 635 | 6 | 220 |
| | Fall | 95.9 | 39.1 | 635 | 5 | 240 |

### *Demographics*

| **Percentage** | Female | Black | Hispanic | White | FRL | ELL | IEP |
|---|---|---|---|---|---|---|---|
| Treatment | 48.9% | 5.3% | 17.0% | 75.5% | 40.4% | 18.1% | 74.5% |
| Control (w/ RAPID) | 41.2% | 6.8% | 16.4% | 75.1% | 49.2% | 14.7% | 69.5% |
| Control (w/o RAPID) | 47.8% | 4.1% | 9.6% | 84.9% | 29.4% | 6.6% | 70.9% |

## Grade 3

### *Correlations*

| | FAST | | RAPID | |
|---|---|---|---|---|
| | Median WC Spring | Median WRC Fall | RSP Pre | RSP Post |
| Median WC Spring | 1.00 | 0.95 | 0.56 | 0.54 |
| Median WRC Fall | | 1.00 | 0.56 | 0.53 |
| RSP Pre | | | 1.00 | 0.60 |
| RSP Post | | | | 1.00 |

### *FAST Scores (Words Correct per Minute): Treatment vs. Control*

| Group | Test | Mean | SD | N | Min | Max |
|---|---|---|---|---|---|---|
| Treatment | Spring | 92.6 | 27.5 | 93 | 19 | 144 |
| | Fall | 91.7 | 24.5 | 93 | 19 | 151 |
| Control (w/ RAPID) | Spring | 101.1 | 41.1 | 215 | 7 | 311 |
| | Fall | 97.6 | 39.1 | 215 | 8 | 290.8 |
| Control (w/o RAPID) | Spring | 145.0 | 33.1 | 322 | 19 | 245 |
| | Fall | 138.8 | 31.5 | 322 | 14 | 250 |
| Overall | Spring | 122.3 | 42.3 | 630 | 7 | 311 |
| | Fall | 117.8 | 39.7 | 630 | 8 | 290.8 |

### *Demographics*

| **Percentage** | Female | Black | Hispanic | White | FRL | ELL | IEP |
|---|---|---|---|---|---|---|---|
| Treatment | 51.6% | 3.2% | 20.4% | 75.3% | 34.4% | 19.4% | 73.1% |
| Control (w/ RAPID) | 46.5% | 6.1% | 17.2% | 74.0% | 38.1% | 14.0% | 71.6% |
| Control (w/o RAPID) | 49.7% | 6.8% | 8.4% | 82.6% | 30.1% | 4.4% | 62.7% |

## Grade 4

### *Correlations*

| | FAST | | RAPID | |
|---|---|---|---|---|
| | Median WC Spring | Median WRC Fall | RSP Pre | RSP Post |
| Median WC Spring | 1.00 | 0.93 | 0.37 | 0.43 |
| Median WRC Fall | | 1.00 | 0.33 | 0.41 |
| RSP Pre | | | 1.00 | 0.50 |
| RSP Post | | | | 1.00 |

### *FAST Scores (Words Correct per Minute): Treatment vs. Control*

| Group | Test | Mean | SD | N | Min | Max |
|---|---|---|---|---|---|---|
| Treatment | Spring | 121.5 | 34.1 | 53 | 16 | 205 |
| | Fall | 116.6 | 30.8 | 53 | 22 | 191 |
| Control (w/ RAPID) | Spring | 115.1 | 32.7 | 206 | 23 | 197 |
| | Fall | 108.2 | 32.9 | 206 | 24 | 263.6 |
| Control (w/o RAPID) | Spring | 164.9 | 39.6 | 343 | 7 | 255 |
| | Fall | 155.6 | 40.0 | 343 | 5 | 254.5 |
| Overall | Spring | 144.0 | 44.0 | 602 | 7 | 255 |
| | Fall | 135.9 | 43.3 | 602 | 5 | 263.6 |

### *Demographics*

| **Percentage** | Female | Black | Hispanic | White | FRL | ELL | IEP |
|---|---|---|---|---|---|---|---|
| Treatment | 50.9% | 1.9% | 22.6% | 71.7% | 22.6% | 15.1% | 66.0% |
| Control (w/ RAPID) | 49.0% | 5.8% | 17.5% | 73.3% | 44.7% | 15.5% | 75.2% |
| Control (w/o RAPID) | 49.9% | 6.4% | 12.2% | 77.6% | 27.4% | 6.7% | 58.9% |

# Appendix E

## Main Effects Model Results for FAST *(all students in summer program)*

| Grade | Outcome | Comparison Group | Mean Difference | Standard Error | t statistic | p-value | Effect Size |
|---|---|---|---|---|---|---|---|
| K | Composite Score | w/ RAPID | 3.5877 | 2.0981 | 1.71 | 0.1219 | 0.466 |
| K | Composite Score | w/o RAPID | 1.8967 | 1.0391 | 1.83 | 0.0702 | 0.197 |
| 1 | Median WRC | w/ RAPID | 7.1549 | 3.7946 | 1.89 | 0.0932 | 0.350 |
| 1 | Median WRC | w/o RAPID | -1.4837 | 3.5688 | -0.42 | 0.6881 | -0.044 |
| 2 | Median WRC | w/ RAPID | 2.1283 | 5.1725 | 0.41 | 0.6894 | 0.075 |
| 2 | Median WRC | w/o RAPID | -4.9524 | 1.5710 | -3.15 | 0.0020 * | -0.161 |
| 3 | Median WRC | w/ RAPID | -0.5531 | 4.4132 | -0.13 | 0.9021 | -0.015 |
| 3 | Median WRC | w/o RAPID | -6.6742 | 5.0513 | -1.32 | 0.2104 | -0.202 |
| 4 | Median WRC | w/ RAPID | 1.2629 | 6.6180 | 0.19 | 0.8582 | 0.038 |
| 4 | Median WRC | w/o RAPID | -1.7002 | 1.8955 | -0.90 | 0.3722 | -0.044 |

*Note.* * = Statistically significant results at $\alpha < .05$.

# Appendix F

## Fidelity of Wonders and WonderWorks Implementation by Grade

### Materials

- All teachers at all observations used at least some of the Wonders or WordWorks materials.
- In 46% of observations (63% of KG, 71% of G1, 25% of G2, 43% of G3, and 88% of G4), teachers used other materials as well.

### Percent of observations where each setting was implemented

| | Whole Group | | WonderWorks | | Small-group rotations | | | |
|---|---|---|---|---|---|---|---|---|
| Grade (n = # observed) | Reading | Language Arts | Lesson 1 | Lesson 2 | Group 1 | Group 2 | Group 3 | Group 4 |
| KG (n = 16) | 100% | 19% | 88% | 0% | 100% | 100% | 75% | 63% |
| G1 (n = 14) | 86% | 21% | 93% | 7% | 100% | 71% | 64% | 7% |
| G2 (n = 16) | 100% | 19% | 31% | 6% | 94% | 75% | 50% | 6% |
| G3 (n = 14) | 100% | 29% | 79% | 14% | 86% | 79% | 50% | 21% |
| G4 (n = 8) | 100% | 25% | 88% | 0% | 88% | 63% | 50% | 13% |
| Overall (n = 68) | 97% | 22% | 74% | 6% | 94% | 79% | 59% | 24% |

### *Number of small groups*

| | Number of small-group rotations | | | | |
|---|---|---|---|---|---|
| Grade | 0 | 1 | 2 | 3 | 4 |
| KG (n = 16) | | | 25% | 13% | 63% |
| G1 (n = 14) | | 29% | 7% | 57% | 7% |
| G2 (n = 16) | 6% | 19% | 25% | 44% | 6% |
| G3 (n = 14) | 14% | 7% | 29% | 29% | 21% |
| G4 (n = 8) | 13% | 25% | 13% | 38% | 13% |
| Total (n = 68) | 6% | 15% | 21% | 35% | 24% |

*Did content vary between groups?*

| Grade | No small groups | One group only | Varied between groups | Same for each group |
|---|---|---|---|---|
| KG (n = 16) | | | 50% | 50% |
| G1 (n = 14) | | 29% | 50% | 21% |
| G2 (n = 16) | 6% | 19% | 31% | 44% |
| G3 (n = 14) | 14% | 7% | 29% | 50% |
| G4 (n = 8) | 13% | 25% | 38% | 25% |
| Total (n = 68) | 6% | 15% | 40% | 40% |

| Number of groups | No small groups | One group only | Varied between groups | Same for each group |
|---|---|---|---|---|
| No small groups | 100% | | | |
| One group only | | 100% | | |
| 2 | | | 29% | 71% |
| 3 | | | 54% | 46% |
| 4 | | | 63% | 38% |
| Total | 6% | 15% | 40% | 40% |

## Wonders Whole Group Fidelity

| | Grade | | Follows the procedures as directed in the teacher's manual | Follows the suggested instructional routines | Adheres to the suggested timing | Uses the recommended corrective feedback procedures | Uses the suggested "Academic Language" | Implements the "Quick Reviews" | Implements the "Unit Opener" | Implements Access Complex Text (ACT) |
|---|---|---|---|---|---|---|---|---|---|---|
| Reading | KG | % with fidelity | 69% | 63% | 56% | 0% | 53% | 0% | 100% | 0% |
| | | # obs | 16 | 16 | 16 | 4 | 15 | 12 | 1 | 5 |
| | G1 | % with fidelity | 8% | 8% | 17% | 0% | 17% | 0% | | 0% |
| | | # obs | 12 | 12 | 12 | 2 | 12 | 3 | | 3 |
| | G2 | % with fidelity | 0% | 0% | 7% | 25% | 36% | 0% | 100% | 0% |
| | | # obs | 16 | 16 | 15 | 4 | 14 | 15 | 1 | 13 |
| | G3 | % with fidelity | 7% | 27% | 25% | | 89% | | | 8% |
| | | # obs | 14 | 11 | 8 | | 9 | | | 12 |
| | G4 | % with fidelity | 75% | 63% | 50% | 100% | 83% | 0% | 0% | 50% |
| | | # obs | 8 | 8 | 8 | 2 | 6 | 1 | 1 | 4 |
| | Overall | % with fidelity | 29% | 30% | 31% | 25% | 50% | 0% | 67% | 8% |
| | | # obs | 66 | 63 | 59 | 12 | 56 | 31 | 3 | 37 |

| | | | Close Reading | Comp | Fluency | Handwriting | High Frequency Words | Introduce the Concept or Build Background | Listening Comp or Interactive Read Aloud | Oral Language | Phonics | PA | Spelling | Structural analysis | Vocabulary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | % with fidelity | n/a | n/a | n/a | 100% | 25% | 67% | 33% | 0% | 50% | 67% | n/a | n/a | 100% |
| | KG | # obs | | | | 1 | 4 | 6 | 15 | 1 | 2 | 3 | | | 1 |
| | | % with fidelity | 25% | 0% | 0% | n/a | 0% | 25% | 0% | 33% | 17% | 67% | 0% | | 0% |
| | G1 | # obs | 4 | 2 | 1 | | 4 | 4 | 4 | 3 | 6 | 6 | 2 | | 1 |
| | | % with fidelity | 0% | 33% | 25% | n/a | 0% | 67% | 0% | | 0% | 60% | 11% | 17% | 17% |
| | G2 | # obs | 9 | 3 | 4 | | 3 | 3 | 1 | | 5 | 5 | 9 | 6 | 6 |
| | | % with fidelity | 10% | 33% | 0% | n/a | n/a | 50% | 0% | n/a | 0% | n/a | n/a | n/a | 40% |
| | G3 | # obs | 10 | 3 | 1 | | | 4 | 2 | | 1 | | | | 10 |
| | | % with fidelity | 75% | 100 % | 100% | n/a | n/a | 100% | 0% | n/a | 50% | n/a | n/a | n/a | 60% |
| | G4 | # obs | 4 | 3 | 1 | | | 1 | 1 | | 2 | | | | 5 |
| | Overall | % with fidelity | 19% | 45% | 29% | 100% | 9% | 56% | 22% | 25% | 19% | 64% | 9% | 17% | 39% |
| | | # obs | 27 | 11 | 7 | 1 | 11 | 18 | 23 | 4 | 16 | 14 | 11 | 6 | 23 |

| | | | Follows the procedures as directed in the teacher's manual | Follows the suggested instructional routines | Adheres to the suggested timing | Uses the suggested "Academic Language" | Implements the "Daily Wrap Up" | Grammar | Spelling | Writing/Writing Process |
|---|---|---|---|---|---|---|---|---|---|---|
| Language Arts | | % with fidelity | 67% | 33% | 33% | 33% | 0% | | n/a | 67% |
| | KG | # obs | 3 | 3 | 3 | 3 | 3 | | | 3 |
| | | % with fidelity | 0% | 0% | 0% | 0% | 0% | | n/a | 0% |
| | G1 | # obs | 3 | 3 | 3 | 3 | 3 | | | 1 |
| | | % with fidelity | 0% | 0% | 50% | 0% | 0% | 50% | n/a | |
| | G2 | # obs | 2 | 2 | 2 | 2 | 2 | 2 | | |
| | | % with fidelity | 0% | 0% | | | | 0% | | |
| | G3 | # obs | 2 | 1 | | | | 2 | | |
| | | % with fidelity | 50% | 50% | | | | 50% | 0% | |
| | G4 | # obs | 2 | 2 | | | | 2 | 2 | |
| | Overall | % with fidelity | 25% | 18% | 25% | 13% | 0% | 33% | 0% | 50% |
| | | # obs | 12 | 11 | 8 | 8 | 8 | 6 | 2 | 4 |

## WonderWorks Intervention

### *Structure of WonderWorks*

| | | Number of small-group rotations using WonderWorks materials | | | | | Overall |
|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | |
| Number of dedicated WonderWorks sessions | 0 | 2% | 3% | 12% | 6% | 2% | 24% |
| | 1 | 25% | 2% | 6% | 3% | 2% | 37% |
| | 2 | 28% | 6% | 3% | 2% | 2% | 40% |
| Overall | | 54% | 10% | 21% | 10% | 4% | 100.0% |

### *WonderWorks Fidelity by Grade*

| Grade | | Follows the procedures as directed in the teacher's manual | Follows the suggested instructional routines | Adheres to the suggested timing | Uses the recommended corrective feedback procedures | Implements the recommended "Quick Check" |
|---|---|---|---|---|---|---|
| KG | % with fidelity | 71% | 50% | 36% | 38% | 50% |
| | # obs | 14 | 14 | 14 | 13 | 4 |
| G1 | % with fidelity | 21% | 7% | 21% | 0% | 0% |
| | # obs | 14 | 14 | 14 | 12 | 7 |
| G2 | % with fidelity | 0% | 0% | 13% | | 0% |
| | # obs | 8 | 7 | 8 | | 3 |
| G3 | % with fidelity | 8% | 33% | 42% | | |
| | # obs | 12 | 6 | 12 | | |
| G4 | % with fidelity | 71% | 100% | 71% | | 100% |
| | # obs | 7 | 7 | 7 | | 1 |
| Overall | % with fidelity | 35% | 35% | 35% | 20% | 20% |
| | # obs | 55 | 48 | 55 | 25 | 15 |

| Grade | | PA | Phonemic awareness | Phonics | Build Fluency | High frequency words | Shared read | Oral vocabulary | Weekly Concept | Review vocabulary | Read/reread Complex Text | Respond to Reading | Before reading | During reading | After reading | Review and reteach |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KG | % with fidelity | 71% | 83% | 61% | 90% | 61% | 83% | 89% | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | # obs | 7 | 23 | 23 | 10 | 18 | 24 | 9 | | | | | | | | |
| G1 | % with fidelity | 75% | 31% | 17% | 17% | 25% | 40% | 100% | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | # obs | 4 | 13 | 12 | 6 | 12 | 10 | 4 | | | | | | | | |
| G2 | % with fidelity | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 100% | 57% | 86% | 67% | 42% | 16% | 0% | 100% |
| | # obs | | | | | | | | 5 | 7 | 7 | 6 | 24 | 19 | 5 | 1 |
| G3 | % with fidelity | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 100% | 50% | 83% | 57% | 36% | 15% | 14% | |
| | # obs | | | | | | | | 1 | 4 | 6 | 7 | 14 | 13 | 7 | |
| G4 | % with fidelity | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 50% | 67% | 100% | 100% | 100% | 100% | | 0% |
| | # obs | | | | | | | | 2 | 3 | 4 | 3 | 2 | 2 | | 1 |
| Overall | % with fidelity | 75% | 64% | 46% | 59% | 47% | 71% | 92% | 88% | 57% | 88% | 69% | 43% | 21% | 8% | 50% |
| | # obs | 12 | 36 | 35 | 17 | 30 | 34 | 13 | 8 | 14 | 17 | 16 | 40 | 34 | 12 | 2 |

## Small Groups

### *Materials of Small Group Instruction*

| Grade | Foundational Skills Kit | Other | Wonders DI | Wonders LA | Wonders Reading | WonderWorks extended practice |
|---|---|---|---|---|---|---|
| KG (n =54) | 0% | 11% | 31% | 0% | 4% | 54% |
| G1 (n =34) | 0% | 3% | 85% | 0% | 3% | 9% |
| G2 (n =36) | 6% | 11% | 14% | 0% | 0% | 69% |
| G3 (n =33) | 27% | 6% | 6% | 24% | 3% | 33% |
| G4 (n =18) | 50% | 11% | 39% | 0% | 0% | 0% |
| Overall (n =175) | 11% | 9% | 34% | 5% | 2% | 39% |

### *Wonders Differentiated Instruction Fidelity by Grade*

| Grade | | Leveled/Paired Shared Reader | PA | Phonics Decoding | Vocabulary Oral Vocabulary | Comprehension | High-frequency words | Structural analysis | Writing Spelling |
|---|---|---|---|---|---|---|---|---|---|
| KG | % with fidelity | 0% | 100% | 75% | | | 0% | n/a | |
| | # obs | 6 | 11 | 4 | | | 1 | | |
| G1 | % with fidelity | 0% | 13% | 6% | | 0% | 0% | | 0% |
| | # obs | 12 | 8 | 17 | | 1 | 4 | | 3 |
| G2 | % with fidelity | 20% | 0% | 0% | 0% | 0% | 0% | 0% | |
| | # obs | 5 | 4 | 4 | 1 | 5 | 4 | 4 | |
| G3 | % with fidelity | 0% | n/a | | | | n/a | n/a | |
| | # obs | 2 | | | | | | | |
| G4 | % with fidelity | 0% | n/a | 100% | 0% | | n/a | n/a | |
| | # obs | 4 | | 1 | 1 | | | | |
| Overall | % with fidelity | 3% | 52% | 19% | 0% | 0% | 0% | 0% | 0% |
| | # obs | 29 | 23 | 26 | 2 | 6 | 9 | 4 | 3 |

### *Foundational Skills Kit Fidelity by Grade*

| Grade | | Phonics | Structural Analysis |
|---|---|---|---|
| G2 | % with fidelity | | 0% |
| | # obs | | 2 |
| G3 | % with fidelity | 50% | 100% |
| | # obs | 8 | 1 |
| G4 | % with fidelity | 0% | 100% |
| | # obs | 4 | 5 |
| Overall | % with fidelity | 33% | 75% |
| | # obs | 12 | 8 |

# Appendix E

## Fidelity of CIM Implementation by Grade

### Number of Students in CIM Group by Grade

| Grade | Mean | Std. Deviation |
|---|---|---|
| KG (n = 14) | 1.6 | 0.5 |
| G1 (n = 16) | 1.6 | 0.8 |
| G2 (n = 15) | 2.3 | 0.9 |
| G3 (n = 15) | 3.1 | 1.0 |
| G4 (n = 15) | 2.5 | 0.9 |
| Overall (n = 75) | 2.2 | 1.0 |

### Emphasis of CIM Lesson by Grade

| Grade | All reading | Approximately equal | Mostly reading | Mostly writing |
|---|---|---|---|---|
| KG (n = 14) | | 29% | 29% | 43% |
| G1 (n = 16) | 6% | 13% | 63% | 19% |
| G2 (n = 15) | | 27% | 67% | 7% |
| G3 (n = 15) | | 27% | 40% | 33% |
| G4 (n = 15) | | 7% | 67% | 27% |
| Overall (n = 75) | 1% | 20% | 53% | 25% |

### Implemented CIM Components by Grade

| Grade | Guided Reading Plus Phase 1 | Guided Reading Plus Phase 2 | Interactive Writing Phase 1 | Interactive Writing Phase 1, Guided Reading Plus Phase 1 | Interactive Writing Phase 1, Guided Reading Plus Phase 1, Guided Reading Plus Phase 2, Reading Recovery/Tier 3 (1:1) | Interactive Writing Phase 1, Guided Reading Plus Phase 1, Reading Recovery/Tier 3 (1:1) | Interactive Writing Phase 1, Guided Reading Plus Phase 2 | Interactive Writing Phase 2 | Interactive Writing Phase 2, Guided Reading Plus Phase 2 |
|---|---|---|---|---|---|---|---|---|---|
| KG (n = 14) | 7% | | 14% | | 7% | 29% | 7% | 7% | 29% |
| G1 (n = 16) | 6% | | | 63% | | | | | 31% |
| G2 (n = 15) | | 13% | | 73% | | | | | 13% |
| G3 (n = 15) | | | | 33% | | | | | 67% |
| G4 (n = 15) | 13% | | | 60% | | | | | 27% |
| Overall (n = 75) | 5% | 3% | 3% | 47% | 1% | 5% | 1% | 1% | 33% |

## Fidelity to Overall CIM Practices by Grade

| Grade | | Anecdotal notes | Rubrics | Running records | Lesson plans | Anchor charts | Graph of text level | Scaffolding | Changing of charts | Multiple modalities for materials | Writing checklists | Reading checklists |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KG | % with fidelity | 100% | 100% | 100% | | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| | # obs | 1 | 1 | 2 | | 6 | 1 | 14 | 2 | 13 | 13 | 13 |
| G1 | % with fidelity | 100% | | 100% | 100% | 100% | | 100% | 100% | 100% | 100% | 100% |
| | # obs | 1 | | 4 | 3 | 3 | | 16 | 1 | 15 | 6 | 13 |
| G2 | % with fidelity | | | 100% | | | | 93% | | 93% | 100% | 100% |
| | # obs | | | 5 | | | | 15 | | 15 | 7 | 11 |
| G3 | % with fidelity | | | 100% | | 100% | | 100% | | 100% | 100% | 100% |
| | # obs | | | 9 | | 6 | | 15 | | 15 | 10 | 5 |
| G4 | % with fidelity | | | 100% | | 100% | | 100% | 100% | 100% | 100% | 100% |
| | # obs | | | 4 | | 4 | | 15 | 1 | 15 | 4 | 9 |
| Overall | % with fidelity | 100% | 100% | 100% | 100% | 100% | 100% | 99% | 100% | 99% | 100% | 100% |
| | # obs | 2 | 1 | 24 | 3 | 19 | 1 | 75 | 4 | 73 | 40 | 51 |

## CIM Writing by Grade

### *Fidelity of CIM Writing by Grade*

| Teacher | Grade | | Teacher to student talk ratio is balanced | States focus | Mini-lesson | Reviews or creates charts/checklists | Personal dictionaries | Phonics: Letter/Word Work | Fluent Writing | Sharing individual message | Writing prompt | Share student writing/group journals | Teacher conferring during independent writing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | KG | % with fidelity | 86% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| | | # obs | 14 | 14 | 13 | 13 | 6 | 14 | 13 | 6 | 6 | 6 | 8 |
| | G1 | % with fidelity | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| | | # obs | 14 | 14 | 10 | 4 | 3 | 11 | 14 | 5 | 5 | 3 | 5 |
| | G2 | % with fidelity | 87% | 100% | 100% | 100% | | 100% | 93% | 100% | 100% | 100% | 88% |
| | | # obs | 15 | 15 | 10 | 8 | | 13 | 14 | 2 | 4 | 3 | 8 |
| | G3 | % with fidelity | 87% | 100% | 100% | 100% | 100% | 100% | 100% | 89% | 100% | 71% | 100% |
| | | # obs | 15 | 15 | 7 | 11 | 4 | 12 | 14 | 9 | 10 | 7 | 10 |
| | G4 | % with fidelity | 71% | 100% | 64% | 100% | 100% | 100% | 89% | 100% | 100% | 67% | 75% |
| | | # obs | 14 | 14 | 11 | 6 | 2 | 11 | 9 | 3 | 4 | 3 | 4 |
| | Overall | % with fidelity | 86% | 100% | 92% | 100% | 100% | 100% | 97% | 96% | 100% | 86% | 94% |
| | | # obs | 72 | 72 | 51 | 42 | 15 | 61 | 64 | 25 | 29 | 22 | 35 |

| | | | Engaged in writing and following all routines | Use materials or manipulatives (e.g., journals, writing checklists, student texts | Compose/record/share an independent message that incorporates group learning |
|---|---|---|---|---|---|
| Student | KG | % with fidelity | 79% | 100% | 100% |
| | | # obs | 14 | 14 | 6 |
| | G1 | % with fidelity | 93% | 100% | 100% |
| | | # obs | 14 | 14 | 5 |
| | G2 | % with fidelity | 93% | 100% | 100% |
| | | # obs | 15 | 15 | 4 |
| | G3 | % with fidelity | 87% | 100% | 100% |
| | | # obs | 15 | 15 | 10 |
| | G4 | % with fidelity | 77% | 92% | 75% |
| | | # obs | 13 | 13 | 4 |
| | Overall | % with fidelity | 86% | 99% | 97% |
| | | # obs | 71 | 71 | 29 |

## CIM Reading by Grade

### *Types of CIM Reading Observed by Grade*

| Grade | Student independent reading of new text | Student individual or choral read aloud of familiar text | Student individual or choral read aloud of familiar text, Student independent reading of familiar text | Student individual or choral read aloud of new text | Student individual or choral read aloud of new text, Student independent reading of familiar text | Student individual or choral read aloud of new text, Student independent reading of new text | Student individual or choral read aloud of new text, Student individual or choral read aloud of familiar text | Student individual or choral read aloud of new text, Student individual or choral read aloud of familiar text, Student independent reading of familiar text | Student individual or choral read aloud of new text, Student individual or choral read aloud of familiar text, Student independent reading of new text, Student independent reading of familiar text | Teacher read aloud of familiar text, Student individual or choral read aloud of familiar text | Teacher read aloud of familiar text, Student individual or choral read aloud of familiar text, Student independent reading of familiar text | Teacher read aloud of new text, Student individual or choral read aloud of new text | Teacher read aloud of new text, Student individual or choral read aloud of new text, Student independent reading of new text | Teacher read aloud of new text, Teacher read aloud of familiar text, Student individual or choral read aloud of new text, Student individual or choral read aloud of familiar text |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KG (n = 14) | | 50% | | | | | 21% | 7% | | | | 7% | | 14% |
| G1 (n = 16) | | 6% | 13% | 25% | | 19% | 19% | | | 13% | 6% | | | |
| G2 (n = 15) | | 20% | 7% | | | 60% | | | 7% | | | | 7% | |
| G3 (n = 15) | 7% | | 60% | | 7% | 27% | | | | | | | | |
| G4 (n = 15) | | 13% | 13% | | | 67% | | | | | | 7% | | |
| Overall (n = 75) | 1% | 17% | 19% | 5% | 1% | 35% | 8% | 1% | 1% | 3% | 1% | 3% | 1% | 3% |

*Fidelity of CIM Reading by Grade*

| | Grade | | Teacher to student talk ratio is balanced | States focus | Phonological Phonemic Awareness | Phonics: Letters/Word Work | Examine and expand vocabulary | Mini-lesson related to comprehension | Personal dictionaries | Orientation to New Text/Book Orientation | Discussion about comprehension during and/or after the reading | Teacher conferences during reading |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Teacher | KG | % with fidelity | 86% | 93% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| | | # obs | 14 | 14 | 11 | 13 | 5 | 1 | 7 | 8 | 12 | 13 |
| | G1 | % with fidelity | 100% | 88% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| | | # obs | 16 | 16 | 12 | 13 | 4 | 1 | 1 | 10 | 15 | 16 |
| | G2 | % with fidelity | 87% | 86% | 100% | 100% | 100% | | | 100% | 100% | 100% |
| | | # obs | 15 | 14 | 10 | 11 | 9 | | | 11 | 14 | 15 |
| | G3 | % with fidelity | 93% | 93% | 88% | 100% | 100% | 100% | 100% | 100% | 100% | 86% |
| | | # obs | 15 | 15 | 8 | 7 | 6 | 5 | 2 | 5 | 13 | 14 |
| | G4 | % with fidelity | 67% | 93% | 100% | 100% | 82% | 57% | 100% | 100% | 100% | 93% |
| | | # obs | 15 | 15 | 11 | 10 | 11 | 7 | 2 | 11 | 14 | 15 |
| | Overall | % with fidelity | 87% | 91% | 98% | 100% | 94% | 79% | 100% | 100% | 100% | 96% |
| | | # obs | 75 | 74 | 52 | 54 | 35 | 14 | 12 | 45 | 68 | 73 |

| | | | Engaged in reading and following all routines | Use manipulatives/materials | Students share strategic processes with teacher during conference | Respond/reflecting on reading |
|---|---|---|---|---|---|---|
| Student | KG | % with fidelity | 79% | 100% | 17% | 100% |
| | | # obs | 14 | 14 | 12 | 13 |
| | G1 | % with fidelity | 81% | 100% | 44% | 100% |
| | | # obs | 16 | 14 | 16 | 16 |
| | G2 | % with fidelity | 87% | 100% | 21% | 100% |
| | | # obs | 15 | 13 | 14 | 13 |
| | G3 | % with fidelity | 100% | 100% | 43% | 92% |
| | | # obs | 15 | 14 | 14 | 13 |
| | G4 | % with fidelity | 87% | 100% | 20% | 100% |
| | | # obs | 15 | 14 | 15 | 12 |
| | Overall | % with fidelity | 87% | 100% | 30% | 99% |
| | | # obs | 75 | 69 | 71 | 67 |