# Assessment Report for Student GG

# Gina Laura Gullo (Ciani)

# Lehigh University

# SPED 452: Assessment and Planning for Individuals with Special Needs

# December 9, 2013

# Dr. Santoro

**Identifying Data**

**Name:** GG **School:** Thomas Jefferson Elementary School

**D.O.B:** 08/09/2005 **Grade:** 3

**Age:** 8-4 **Teachers:** Mr. Shepp and Mrs. Mac

**Sex:** Female

**Examiner:** Gina Ciani

**Date of Report:** December 09, 2013

***Note:*** *A copy of assessment consent if presented in Appendix A.*

**Reason for Referral**

GG was recommended for testing because despite years of tier 3 response to instruction and interventions (RTII) and a strong willingness to learn, she continues to struggle with reading and writing severely. Teachers and staff are concerned GG’s academic challenges may be related to a learning disability and want to get a comprehensive picture of where GG demonstrates academic successes and challenges. GG’s mother wants to make sure her daughter is given every opportunity to succeed academically and agrees with teachers’ concerns. Ideally, this project will help teachers, staff, and GG’s mother identify the next steps for finding academic success for GG in- and outside of school.

**Background Information**

GG is an 8-year-old student in a general education class at Thomas Jefferson Elementary School in Bethlehem, PA. GG enjoys playing outside, music, drawing, board games, and talking with friends. Some of GG’s favorite board games include Candyland, Sorry, and Chutes and Ladders, all of which she particularly enjoys playing with her mother at home. GG works well in groups, and has very strong social skills. She is extremely friendly and has many friends in her class at school.

At home, GG lives with her mother and is an only child. She speaks both English and Spanish at home and a little French. Her mother primarily uses English at home, but her relatives use Spanish primarily and she was raised bilingually. GG moved to Pennsylvania in November of her Kindergarten year and has been attending Thomas Jefferson Elementary since that time. She often visits family in Florida on winter and summer school breaks.

Currently, GG is not diagnosed with any special needs. Based on school reports, GG struggles in reading and has done so since Kindergarten. On GG’s most recent Dynamic Indicators of Basic Early Literacy Skills Next (DIBELS Next; Good, & Kaminiski, 2012) oral reading fluency (ORF) testing, she scored 34 words correct per minute with only 85% accuracy, which is far below the norms for her grade of 70 and 95%, respectively. On the DIBELS Next, comprehension, or Daze test, GG scored a 4 which is significantly below the grade level norm of 8. GG’s second grade teachers noted that she has a strong awareness of word decoding strategies for reading, but often fails to apply those skills while reading. Nevertheless, teachers note that she works extremely hard to apply learned skills in class for both reading and writing. According to her report card, GG tends to perform similarly to her peers in math, social studies, science, art, and physical education; while excelling in music. School-provided background information is provided in Appendix B.

GG is taught at grade level (3rd) on all subjects, but receives Tier 3 RTII in reading for 45 minutes daily. In previous years, the Phonics for Reading and Fluency First intervention programs were used with GG; this year she begins working with the Read Naturally curriculum. In her general education class, the students use the Read 180 curriculum as well. Standard math curricula are used in her general education class, which are strongly based in a project problem solving teacher-designed framework.

Behaviorally, GG seems to have some challenges with staying focused for long periods of time. GG works better in group settings where she can mix socialization with learning in a seamless manner; however, she tends to go off task often when participating in one-on-one or independent work. GG has trouble remaining in her seat and often tries to compromise about the length of time she must remain on task. Conveniently, GG responds very well to reinforcement such as access to board games, school supply rewards, or candy. When a reinforcer is presented at the start of a task, GG will often complete the entire task staying focused and calm until the predetermined reinforcement point. In other behavioral domains, GG is polite, confident and well behaved as well as a strong role model of positive social interaction skills for other students.

**Assessments and Results**

**Classroom Assessments**

**Teacher interview.** In order to acquire data relating to the level of functioning, success, and challenges for GG in an academic setting inclusive of reading, writing, spelling, and mathematic learning domains, GG’s main teacher, henceforth referred to as Mr. Shepp, completed a teacher interview questionnaire. Mr. Shepp relayed information relating not only to GG’s particular academic performance across subject areas, but also behaviors during a variety of tasks through the assessment. These data aimed to provide a clear representation of who GG was in class and what kinds of instruction she received and are available in Appendix C.

According to Mr. Shepp’s interview, GG struggled across all academic domains and was referred for the present assessment for that reason. She was rated as “somewhat worse” in all areas of reading ability including vocabulary/word knowledge and comprehension. Similarly, Mr. Shepp noted GG was generally struggling in mathematics although few descriptive details were provided. For spelling and writing instruction, Mr. Shepp replied that GG’s skills were in their beginning phases. Overall, the teacher interview provided clear indications that GG functioned below average for her grade level in the domains of reading, writing, spelling, and mathematics.

For reading instruction, GG used the MacMillan Series basal reading program during whole group settings in which she was instructed at the third grade level. When in reading intervention groups, GG was instructed using the READ 180 system for both reading and spelling. Reading instruction occurred at the whole group level for 90 minutes daily and in intervention groups for an additional 45 minutes daily. During the 90 minute reading block the time was divided into 30 minutes each for independent seatwork, whole or small group word, and computer instruction. GG was placed in the READ 180 intervention based on DIBELS, DRA, and DAZE scores at the start of the school year where she scored in the “at risk” levels. READ 180 used reminders, cues, motivation, feedback, and direct instruction in addition to additional instructional time in reading and spelling in order to help students achieve success in reading and spelling. Work in this intervention system began with 15 minutes of full group instruction, then 20 minutes on small group instruction, followed by 5-10 minutes of large group instruction. This instruction included both reading and spelling, on which GG scored at Lexile 77 of the READ 180 system (at risk for grade 3 is 249 and below).

When compared to other students, GG read orally and chorally at levels below the other students; had a smaller vocabulary than her reading group and the whole class; and had a smaller sight word vocabulary than those groups as well. She did attempt to read unknown words with teacher cues, and was successful with main idea and main character identification skills of reading comprehension. Unfortunately, she displayed below average reading comprehension skills in other areas. Mr. Shepp noted GG’s response and attention behaviors were below satisfactory during her reading group time and satisfactory during independent seatwork. GG did not receive homework in reading.

For mathematics instruction, GG was instructed using the Scott Foresman curriculum for 90 minutes a day. Mr. Shepp noted that she particularly struggled in math when applying mathematical concepts independently, retaining learned concepts, and problem solving. Math instruction was presented in a semi-static manner with 30-40 minutes of whole group instruction, followed by about 30 minutes of small group or pair work, and finishing with 20-30 minutes of individual seatwork. All instruction was presented in a homogeneous math level setting except for one-on-one support, extra time adaptations, and additional modeling that was provided only to students in need. GG did not currently receive remedial math instruction and her daily instruction included whole group modeling, scaffolded worksheets, exploration with manipulatives, and real world concept-applications. The teacher noted that although intervention measures such as reminders, cues, motivation, feedback, intensive one-on-one support, and increased instructional time with the student were used, GG seemed to benefit very little from these supports. In the weeks prior to the interview, GG scored a 23/32 (72%), 9/22 (41%), and 14/41 (34%) on her math assessments. Furthermore, she acquired a Study Island math score of 14/30 (47%) as her latest standardized math assessment result. Possibly as a result of the difficulty, GG’s behavior during math instruction was subpar with teacher responses indicating very unsatisfactory to less than satisfactory on almost all areas of behavior in large group, small group, and independent math study. Mr. Shepp did however note that GG consistently handed homework in on time that was complete, but not often accurate.

As for writing instruction, Mr. Shepp accounted that GG is only just beginning writing instruction and that she received some instruction during READ180 and more instruction in small group during narrative accounts expository writing workshops. She did not yet have a handle on grammar or mechanics of writing, but her instruction was in the early stages.

Despite academic struggles, Mr. Shepp noted that GG was a friendly, outgoing student who seemed to love school despite her challenges with content. Overall, she consistently performed at levels below average for her grade level, and didn’t currently show signs of progress. Her behaviors seemed slightly withdrawn with regards to responding and attending to others academically and seem to have a possible correlation with her level of difficulty with each domain. Nevertheless, GG had strong social skills and a desire and willingness to learn that will likely help her find success at school in the future.

**Ecological assessment.** An ecological assessment was conducted on GG’s learning environment in order to determine the effects of the environment and instruction on GG’s behaviors, which is available in Appendix D. The present assessment observed four areas of concern as follow: (1) physical setting, (2) scheduling, (3) socialization, and (4) defining and teaching positive behavior. As most of GG’s instruction occurred in one classroom with the exception of her READ 180 instruction that occurred in a variety of locations in the open concept school, the ecological assessment was conducted during time in GG’s general education classroom during whole group instruction. GG received no additional individual instruction to help her with activities throughout the day, but was sometimes pulled from the class for additional testing or support as it was available.

With regards to the physical setting of GG’s classroom, furniture was placed to decrease traffic flow, clear boundaries were presented in the classroom, the classroom and classroom materials/furniture were in good repair, and the furniture was the proper size for the children. Materials were mostly organized and accessible for student use, but unnecessary and distracting items were not removed from students view and/or reach due to the open concept layout of the school. Although rules were posed on a wall of the classroom using words that students could understand, the font was quite small and hard to read from afar and there were no graphics to assist those who struggled with reading to understand the rules.

Scheduling at the school was done in a manner that maximized instructional time, but did not support learning of time management by students. The daily schedule gave students consistent time periods for independent work, one-on-one instruction, small group work, and large or whole group instruction as well as times designated for socialization and free time. Students tended to have most of their time spent in engaging learning activities that minimized down time and unstructured content. In such, students had opportunities to exhibit newly learned skills often. Unfortunately, a daily schedule posted on the white board was not reviewed or referred to at all by the teacher and transitions and non-instructional materials were also rarely reviewed. As such, transition times were quite sloppy and led to some unintentional down time.

The school placed a large and effective emphasis on proper socialization skills through their effectively implemented school-wide positive behavior support system (SWPBS). All students were aware of the rules and how to follow them in the various school settings. Students understood how to make healthy friendships and had time to do so during school. Peer interaction and group activities were constantly embedded into instruction in the spirit of a sociocultural learning theory-supportive environment. Furthermore, communication strategies and techniques were taught and reinforced by all staff and faculty in the school using SWPBS.

As a result of the school’s strong SWPBS system, positive behaviors were well defined and taught often. Clear expectations and rules were posted throughout the school and students were rewarded with TJ Bucks for displaying those expectations for behavior. Other reinforcement for following the rules was plentiful through verbal and non-verbal praise, and earned bonus recess time. Praise seemed naturalistic and unforced when given by teachers and staff, while reprimands were given immediately with corrective feedback using calm voices. Reinforcers were not all that varied since all students could work towards TJ Buck and bonus recess time, but these seemed to be strong and age-appropriate reinforces for all the students. Furthermore, positive reinforcement was given at a rate slightly below desired and was observed to be 2 positives for every corrective rather than the desired 4:1 ratio. This might result from the vagueness of wording for the rules and expectations as many were neither observable nor measurable and left a lot of room for interpretation.

**Permanent classroom products.** DIBELS scores obtained from the school counselor revealed that in GG's latest ORF measurement, GG read 34 words correct per minute (WCPM) with 6 errors (85% accuracy). The average WCPM for a beginning third grader is 70 WCPM with a cut off for noting students are at risk at 55 WCPM. More promising, GG retold 25 words with a quality of 2 where norms here are 20 and 2, respectively, with at risk cut offs of 10 and 1. Unfortunately on her reading comprehension measure, the DAZE, GG scored a 4 which is well below the norm of 8 and cut off of 5.

Math and reading assessments obtained from Mr. Shepp (see Appendix E) revealed that GG often skips questions on in class assessments as seen by 2 items out of 32 skipped on a math test, 1 out of 8 items skipped on a reading test, and 1 part of the instructions missed on a writing question that was part of a reading assessment. Teacher feedback on the classroom products suggests that GG take time to recheck her work indicating that skipped items may be inadvertent and related to rushed completion of the assessments. On math classroom products, GG scored 23 out of 32 and 9 out of 12. On the first product, she struggled with place value and completing all test times, but displayed strengths in number ordering and related vocabulary. On the second, she performed better with place value, but struggled with rounding and answering an open ended question according to what the question asked. On the reading/writing assessment, GG scored 8 out of 13 despite working on the task in conjunction with her teacher. She excelled on items related to word types and main problem identification and wrote relatively well, although she lost points throughout the test by not attending to all the details of the instructions. Together these assessments suggest that GG may need to focus more on attending to details in instructions on classwork, but indicate she is capable of growth on academic topics.

**Classroom observations.** Three observations of GG and a peer were conducted twice during math and once during reading intervention, and are presented in Appendix F. Observations used momentary time sampling where the examiner looked at the students every ten seconds to see if they were on or off task. On task behavior was defined as the student looking at the teacher or instructional material, or the student working on assigned material by following along in a book or actively participating in the activity assigned. Off task behavior was defined as the student looking away from the teacher or instructional material, or the student working on something unrelated to the class activity (i.e. coloring/doodling, talking about an unrelated topic with a peer, or looking at an off topic book). The examiner used a smart phone timer to record the appropriate behavior whenever a zero appeared in the ones place of the seconds’ column for 15 minutes. In other terms, a response was recorded about whether students were on or off task when the examiner looked up at the students at 00 seconds, 10 seconds, 20 seconds, 30 seconds, 40 seconds, and 50 seconds for every minute counted for 15 minutes. Data was analyzed to determine the percentage of on task intervals.

During the math observations GG was on task 77% (70/91 intervals) and 73% (66/91 intervals) of the time, while her peer was on task 93% (85/91 intervals) and 95% (86/91 intervals) of the time, respectively. During the reading intervention observation, GG was on task 85% (77/91 intervals) while her peer was on task 84% (76/91 intervals) of the time. The same peer was used for all observations. The data shows that GG was on task more often in reading than in math, as opposed to her peer who was on task more in math than in reading. Similarly, GG was off task more than her peer in math (16-22% less on task), but on task at a comparable rate (1% more on task) in reading. Although these results are assumed valid, they may not be indicative of GG's attention due possibly to different academic interests between GG and her peer or observations on poorly chosen days (all days were within one week) or time of observations (all before lunch). Unfortunately, due to the student's schedule different time of day observations were not possible.

**Reading Assessments**

The student was assessed in reading using tests from the *Woodcock-Johnson III Tests of Achievement* (WJ-III; Woodcock, McGrew, & Mather, 2001), *AIMSweb Reading Curriculum Based Measurement* probes (R-CBM; Pearson, 2001a), and *AIMSweb MAZE reading comprehension* probes (MAZE; Pearson, 2002). A summary of these scores and other reading performance data is presented in Table 1. The WJ-III (Appendix G) is an overall academic achievement test that is broken into reading, writing/spelling, and mathematics domains based on composite subtest scores. Scores on this assessment are compared to scores of students of the same age nationally to determine the student's ability respective to his or her peers. The AIMSweb probes are diagnostic tools that were used in this assessment battery to determine GG's instructional level for reading fluency and comprehension. All scores on the reading assessments are felt to be valid assessments of GG's reading abilities as GG was able to maintain optimal attention on all tasks with use of regular reinforcement, and no external elements appeared to affect the results of the assessments.

GG scored in the low average category on the Broad Reading Cluster of the WJ-III with a score falling in the range of 86-90 and an obtained score of 88. These scores place GG in the 21st percentile, meaning that 21% of students that normative scores are based on scored at or below GG's score. This cluster represents overall reading ability inclusive of reading decoding, speed, and comprehension. GG's score for the Basic Reading Skill Cluster fell in the 92-96 range with an obtained score of 94 (33rd percentile), representing an average score for that domain. Basic Reading Skill scores describe the student's proficiency with sight words, phonics, and word analysis for structure. GG's Reading Comprehension cluster score fell near the bottom of the low average range with a score falling between 77-83 and an obtained score of 80 (9th percentile). Scores for reading comprehension describe how well students can use comprehension, vocabulary, and reasoning to understand text.

The WJ-III subtests in reading used to determine the above cluster scores were Letter-Word Identification, Reading Fluency, Passage Comprehension, Word Attack, and Reading Vocabulary. The Letter-Word Identification requires the student to correctly identify letters and words and pronounce them correctly, but does not require any word meaning knowledge. GG scored between 93 and 98 on this subtest with an obtained score of 96, which is at the 39th percentile. The Reading Fluency subtest measures the student's skill for quickly reading statements and deciding if they are true or false over a three minute timed period. GG's score fell between 90 and 99, and placed her at the 36th percentile with an obtained score of 95. Scores on both Letter-Word Identification and Reading Fluency are average scores when compared to norms. The Passage Comprehension subtest requires students to either identify a pictographic representation of words read or complete passage with a word that fits in a blank, both demonstrating comprehension of the material read. GG scored in the 76-84 range with an obtained score of 80, placing her in the 9th percentile. This is a score falls in the low average category. The Word Attack subtest has students use phonics and structural analysis reading skills to decode and pronounce unfamiliar printed words; meanwhile, the Reading Vocabulary subtest requires students to read and provide meaning to words through use of synonyms, antonyms, and analogies. GG placed in the 30th percentile for Word Attack scoring between 89 and 95 (obtained score of 92) which falls in the average category. Her Reading Vocabulary score fell in the 83-88 range (low average category) with an obtained score of 86, which is in the 27th percentile.

GG was also assessed in reading using curriculum based measurements from the AIMSweb collection of diagnostic tools. Her reading fluency was assessed using a measure of ORF measure, R-CBM (Appendix H), which has students read a passage for 1 minute while an examiner records the student's errors. Students are marked with an error for incorrectly reading a word, omitting a word, not reading a word within three seconds (at this time a word is provided by the examiner), and transposed two or more words. Words are marked correct when they are read accurately within three seconds, read inaccurately but self-corrected within three seconds, or read correctly but pronounced incorrectly due to a regional pronunciation or speech problem. At the end of one minute, the examiner calculates the total words read and subtracts the number of errors for that number to determined the words read correctly per minute (WCPM). This number is compared to normative data to determine the student's reading fluency level. For this assessment, R-CBM probes were used to determine a baseline level of the student's reading in order to determine an instructional reading level appropriate for the student. The instructional level, or the grade level at which a student will best learn while reading, are determined by providing three probes of the same grade level, taking the median WCPM score, and comparing that score to normative data. Scores below the 25th percentile are considered at the frustration level, between the 25th and 75th percentile at the instructional level, and above the 75th percentile at the independent level.

GG was first testing using 2nd grade reading probes rather than probes on her present grade level (3rd) because she scored in the low average category on the Broad Reading Cluster of the WJ-III and because she was noted as scoring in the "at risk" level on similar ORF probes at the 3rd grade level when she began the school year. Her WCPM for each of the 2nd grade level ORF probes were 61, 68, and 64 with a median score of 64. Normative data for 2nd grade level probes administered in the fall suggest that scores between 35 and 88 fall between the 25th and 75th percentiles, and so in the instructional reading level range. As 64 falls between 35 and 88, the 2nd grade reading level was determine to be instructional for GG.

Following administration using R-CBM probes, MAZE probes (Appendix I) for reading comprehension were administered. These probes provide a passage to the students with a selection of three possible words that could fit in the passage at regular intervals. Students have three minutes to read the passage and circle the correct answers to complete each item in the passage. At the end of three minutes, the student's items circled are compared to an answer key and correct items are all counted as one point. In the same way as the ORF probes, this is done three times for a grade level and the median score is compared to normative data to determine the instructional level (also between the 25th and 75th percentile). For the MAZE, GG was tested first on 2nd grade level probes based on her 2nd grade instructional level as determined by the ORF probes. She scored a 5, a 5, and a 7 leading to a median score of 5. Normative data states scores between 2 and 8 are within the 25th to 75th percentile range, and therefore at the instructional level. As such, GG was determined to be on the 2nd grade instructional level for reading comprehension as well as fluency.

**Writing/Spelling Assessments**

The student was assessed in writing and spelling using tests from the WJ-III (Appendix G), *AIMSweb Spelling* probes (S-CBM, Pearson, 2003), and *AIMSweb Written Expression* probes (WE; Pearson, 2001b; Powell-Smith, & Shinn, 2004). A summary of these scores and other writing performance data is presented in Table 2. The AIMSweb probes for writing (Appendix J) and spelling (Appendix K) aimed to determine GG's instructional level for spelling and writing based on correct writing sequence (CWS), words spelled correctly (WSC), and total words written (TWW). Scores on the WJ-III and spelling probes are assumed valid because GG was able to remain on task with reinforcement throughout these tasks and no external distractions were present. WE probes may not be completely valid as GG had difficulty remaining focused during the writing tasks and because a parade of kindergarten students came past the testing area during the last 30 seconds of one of the writing probes. As that probe was similar in score to the others it was felt to be a reliable measure of WE, but overall focus struggles may result and less than valid results overall in WE.

For the Broad Writing Cluster on the WJ-III, GG scored in the 82-89 range with an obtained score of 85 placing her in the 17th percentile and low average category. This cluster score represents overall writing ability including single-word spelling, writing fluency, and writing quality. In the Basic Writing Skill Cluster, which represents skills involved in spelling and grammar, GG scored in the 80-87 range falling in the low average category with an obtained score of 83 and percentile rank of 13th. More positive, GG scored in the average category for the Written Expression Cluster, which demonstrates meaningful expression with fluency. Her score fell in the 89-97 range with an obtained score of 93, which is in the 31st percentile.

More specifically, GG performed in the average category for subtests of Writing Fluency and Writing Samples and in the low average category for subtests of Editing, Spelling, and Spelling of Sounds. The Writing Fluency measures a student's ability to quickly form and produce written sentences based on stimulus pictures over a seven minute time frame. The Writing Samples subtest assesses the student's ability to write responses based on demands that are evaluated for expression quality but not spelling and punctuation. GG scored in the 87-101 range for Writing Fluency (in the 33rd percentile) with an obtained score of 94, and scored in the 89-97 range for Writing Samples (in the 32nd percentile) with an obtained score of 93. The Editing subtest evaluates the student's skill for finding and correcting sentence errors. The Spelling and Spelling of Sounds subtests measure the student's ability to write orally presented words and nonsense (or low frequency) words, respectively. GG scored in the 82-92 range and in the 19th percentile for Editing with an obtained score of 87. Her Spelling score was in the 80-87 range and in the 14th percentile (obtained score = 84) and her Spelling of Sounds score was in the 82-93 range and 21st percentile (obtained score = 88).

After WJ-III testing, GG was further evaluated using S-CBM and WE. In the same way that the R-CBM probes were used, S-CBM and WE probes were given in sets of three to determine instructional levels, or where the student fell between the 25th and 75th percentiles for the tested level, based on the median score. Spelling probes were assessed by giving points for correct letter sequence (CLS), or the accuracy of the letter sequencing. This is done by giving one point for each transition to a correct letter beginning with the blank to the first letter, continuing to the first to the second letter, and so on until the final letter to the space after the word. For example, the word BAT could be worth up to four points with one point each for \_ to B, B to A, A to T, and T to \_. If the word was spelled BOT, the student would get two points: \_ to B, and T to \_, but miss the two points for B to A and A to T. The number of points is calculated for each word and summed to get the total score for the CLS on the entire probe. Tests at the first and second grade levels consist of 12 words each and are given at a rate of one word every 10 seconds for 2 minutes. Higher level tests consist of 17 words each and are given at a rate of one word every 7 seconds for 2 minutes. Students are instructed to move on to the next word even if they haven't finished the word they are currently working on when the next word is said. At the end of 2 minutes, students are asked to put their pencils down and may not return to correct any previous words.

GG was tested in spelling beginning with probes on the 2nd grade level due to her performance on the WJ-III spelling tests in the low average category. She scored a 52, a 50, and a 33 on each of her three spelling probes with a median score of 50 CLS. The norms for 2nd grade level fall spelling probes have scores between 38 and 57 representing those scores between the 25th and 75th percentile. As such, GG's score of 50 was in this level making her instructional spelling level 2nd grade.

The WE probes for the AIMSweb tests provide a writing prompt to a student followed by one minute to think about what the student plans to write. After 30 seconds the student is reminded about the topic. Immediately after the planning time, the student is given three minutes to write a story based on the writing prompt. AIMSweb provides over 80 primary level writing prompts of which the following three were selected: "The rocket ship landed on the moon and...; The cat climbed the telephone pole and...; If I were to make a TV show, it would be about..." These three were selected because they each appeared different enough to allow the student to demonstrate her writing ability based on a wide range of prompts. The prompts all required some imaginative creativity, but could be based on real events or fantasy at the student’s discretion.

The writings were all assess on CWS, TWW, and WSC. CWS was determined by looking at the transitional sequences before and after words. For a CWS point to be given a word needed to be correct in grammar, spelling, and context. Points were given from the space before the first word to the first word, the first word to the second word, and so on until the last word to the space after the sentence. For example, the sentence, "The big cat drank the milk." would be awarded 7 CLS points for \_The, The big, big cat, cat drank, drank the, the milk, and milk.\_. If the sentence was written, "the big cat drinked the malk." the sentence would recieve only one point. It would not get "\_the" because the first word was not capitalized and would miss "the big" for the same reason. It would get one point for "big cat" but miss a point for "cat drinked" because drinked should be drank and miss the subsequent point for "drinked the" for the same reason. Finally, no points would be awarded for "the malk" or "malk.\_" due to the incorrect spelling of milk. TWW simply counts the total number of words written in the student's story regardless of accuracy in spelling or grammar. WSC has the scorer underline all words spelled correctly in the passage and count them to find the WSC score.

GG scored a 7, 16, and 15 for CWS in her WE passages with a median score of 15. This places her in the 3rd grade instructional level where norms for the 25th to 75th percentile are CWS scores of 11 to 27. GG also places in the top of the 2nd grade instructional level where norms for the 25th to 75th percentile are CWS scores of 5 to 15. GG scored a 16, 32, and 30 for TWW on her WE probes with a median score of 30 TWW. This places GG in the 3rd grade instructional level where norms for the 25th to 75th percentile are TWW scores of 19 to 35. Finally, GG scored a 22, 12, and 26 for WSC with a median score of 22 WSC. The score also places GG in the bottom of the 4th grade instructional level where norms for the 25th to 75th percentile are TWW scores of 26 to 45. This places GG in the 3rd grade instructional level where norms for the 25th to 75th percentile are WSC scores of 13 to 30. The score also places GG in the bottom of the 4th grade instructional level where norms for the 25th to 75th percentile are WSC scores of 21 to 41.

**Mathematics Assessments**

The student was assessed in mathematics using tests from the WJ-III (Appendix G), the *KeyMath Revise*d (KM-R; Connolly, 1998; see Appendix L), and *AIMSweb Math Computation Curriculum Based Measurement* probes (M-CBM, Pearson, 2010; see Appendix M). A summary of these scores and other mathematics performance data is presented in Table 3. The KM-R test is a diagnostic test focusing on mathematics that delineates areas of strengths and weaknesses in math both overall and relatively. It measures domains of basic concepts, operations, and applications with various subtests within those areas. The M-CBM probes provide various computation items to students inclusive of addition, subtraction, multiplication, and/or division depending on grade level to determine baseline and growth in math computation. Scores in this assessment were used only for benchmarking of instructional levels. Scores on all math assessments are considered valid due to the student's great ability to remain on task throughout the tasks with minor reinforcement. Scores on KM-R may be inflated as the student was having a particularly good day and was excited to work on the tasks in a manner that appeared more enthusiastic than on other days of math assessment.

GG performed in the low average category for the Broad Math Cluster on the WJ-III with a score in the 79-89 range which falls in the 13th percentile based on an obtained score of 83. She scored in the average category for the Math Calculation Skills Cluster with a score falling in the 84-95 range which falls in the 25th percentile based on an obtained score of 90. The Broad Math Cluster represents GG's overall math achievement abilities including those involved in problem solving, number usage, fact automaticity, and mathematical reasoning; meanwhile, the Math Calculation Skill Cluster represents GG's computational skills and automaticity with math facts only and is a measure of basic math skills.

These scores are based on subtests scores in Calculation, Math Fluency, and Applied Problems. GG's calculation score fell in the 86-100 range with an obtained score of 93, which is in the 31st percentile. This is categorized as an average score and is a measure of mathematical computation ability. GG's Math Fluency and Applied Problems scores were both in the 77-86 range with an obtained score of 82, which falls in the 11th percentile. These scores are both categorized as low average. The Math Fluency subtest measures GG's ability to solve math facts such as addition, subtraction, multiplication, and division problems quickly; while the Applied Problems subtest measures her ability to analyze and solve math problems.

The KM-R test was administered to GG because her scores on the Broad Math Cluster of the WJ-III were lower than those of the Broad Reading and Broad Writing Clusters. This suggested that math might be a more pertinent area of concern with regards to GG's academic achievement. The KM-R test provided various items in the following areas: Basic Concepts (consisting of the Numeration, Rational Numbers, and Geometry subtests); Operations (consisting of the Additions, Subtraction, Multiplication, Division, and Mental Computation subtests); and Applications (consisting of the Measurement, Time and Money, Estimation, Interpreting Data, and Problem Solving subtests). Each subtest is further divided into three to four domains. Based on a student's age level, only some subtests and domains have normative information; tests without normative data are considered skills that the student may not yet have learned.

GG received an overall KM-R score falling between 93 and 99 with an obtained score of 96. This score is categorized as average and falls in the 39th percentile rank. Her Basic Concepts score fell between 81 and 91 with an obtained score of 86, categorizing her as low average in the 18th percentile. GG's Operations score fell in the 100-110 range with an obtained score of 105 (63rd percentile) and her Applications score fell in the 89-97 range with an obtained score of 93 (32nd percentile). Both of these scores classify her as average. Notably the difference between her Basic Concepts score and Operations score was statistically significant at the 0.01 level, meaning that a difference of this magnitude would only occur by chance 1% of the time.

When the Basics Concept Area is further analyzed, GG was similarly successful in both the Numeration and Geometry subtests which looked at her abilities using numbers and identifying shapes and relative locations, respectively. Her score in Numeration fell between 4.6 and 7.4 with an obtained score of 6 (9th percentile), while her Geometry score fell between 6.6 and 9.4 with an obtained score of 8 (25th percentile). Both of these scores fall in the average category; however many of GG's domain scores in the Basic Concepts Area were noted as "weak." In Numeration she scored in the weak category for both numbers 0-9 and 0-99, and in Geometry she scored in the same category for "two dimensional shapes and their relations." Nevertheless, GG showed strengths in the fractions domain of the Rational Numbers subtest and "spatial and attribute relations" domain of the Geometry subtest with scores categorized as average.

A closer look at the Operations Area displays some areas of strength for GG. The student appears to have a great amount of success with addition as demonstrated by a score falling between 17.4 and 20.6 on the Addition subtest (obtained score of 19), which is in the > 99th percentile. This score categorizes GG as "very superior" and notes average levels of achievement in all domains of addition: models and basic facts, algorithms to add whole numbers, and adding rational numbers. Scores on other subtests demonstrated categorized average levels of performance with a Subtraction subtest score range of 6.4-9.6 (8 obtained, 25th percentile), Division subtest score range of 8-12 (10 obtained, 50th percentile), and Mental Computation subtest score range of 7.6-10.4 (9 obtained, 37th percentile). When domains are considered, GG's scores placed her at average levels for the multiplication and division domains of "models and basic facts" and at the weak levels for the subtraction domain of the same name as well as "algorithms to subtract whole numbers" and the weak level for mental computation's domain of "computation chains."

The Applications Area is one at which GG appears to be working at a pace similar to her peers. She scored in the average category for all subtests except Problem Solving for which she scored in the low average range. Her score for Measurement fell in the 9.6-12.4 range (11 obtained, 63rd percentile), for Time and Money fell in the 8.8-11.2 range (10 obtained, 50th percentile), for Estimation fell in the 6.6-9.4 range (8 obtained, 25th percentile); for Interpreting Data fell in the 7.6-10.4 range (9 obtained, 37th percentile); and for Problem Solving fell in the 5.2-8.8 range (7 obtained, 16th percentile). She displayed average levels of performance for the following domains in Measurement: comparisons and using non-standard units; in Time and Money: identifying passage of time and monetary amounts to one dollar; in Estimation: measurement; and in Interpreting Data: probability and graphs. She was assessed as weak in the following domains in Measurement: using standard units for length and area; in Estimation: whole and rational numbers, in Interpreting Data: charts and tables, and in Problem Solving: solving routine problems.

The M-CBM was administered similarly to the other AIMSweb CBM probes in that three probes were given at each grade level until a median score reflected the instructional level of that grade level by falling between the 25th and 75th percentiles. Each M-CBM consisted of 28 math computation problems consisting of a mix of two or three numbers to add, subtract, multiply, or divide as appropriate for the grade level. The student was given eight minutes to accurately complete as many problems as possible and was instructed to skip a problem by marking it with a small 'x' if it was too difficult and only to return to that problem if they had time remaining after attempting all the other problems on the probe. Items answered correctly were scored for between one and three points as noted in an answer key and incorrectly answered items were scored as zero points. The total was summed to determine the score for that probe. GG was given the 2nd grade probes to begin based on her scores on the WJ-III math subtests and the KM-R. She scored 20, 23, and 25 points on each probe with a median score of 23, which placed her at the top of the 2nd grade instructional level for math (based on a 25th to 75th percentile range of 10 to 24 points for fall scores).

**Conclusions**

To determine GG’s particular academic strengths and weaknesses within the core curriculum, a battery of assessments were given including the WJ-III achievement test, the KeyMath Diagnostic test, and AIMSweb CBMs. Additional data were collected regarding past grades, teacher perception of the student’s performance, recent CBMs administered by the school, work samples, and observations of student on task behavior. Data collection began on September 11, 2013 and concluded on November 21, 2013. Summaries of all test results are available in Tables 1 through 3, and a summary of overall strengths and weaknesses are presented in Table 4.

**Writing**

According to the assessments, GG demonstrated particular strengths in writing with WE CBM scores at average of above average categories for her grade level in all domains. Similarly, her report card for 2nd grade signifies average spelling skills in grammar and fluency that are confirmed in her 3rd grade work samples. Achievement test results indicate strength with writing fluency only; however, some results were inconsistent such as scores indicating weakness in grammar and spelling for the WJ-III and just spelling on the S-CBM, grade 2 report card, and work samples. GG may have used mostly words she already knew how to spell on the administered WE CBMs accounting for an artificial high score in WSC. This seems likely because scores in spelling from all other assessments and data sources indicated this as a particular area of weakness. Teacher interview data noted that GG had weaknesses with all areas of writing, but the teacher also noted that GG was below students for all academic areas. This inconsistency may be related to a lack of specificity in the teacher interview questions resulting in an overgeneralization of GG’s areas of weaknesses—particularly in writing skills. Furthermore, the teacher noted that writing instruction was in its beginning stages, which may have resulted in a lack of time for complete evaluation of GG’s skills.

**Reading**

GG showed some notable successes in reading, particularly with her WJ-III performance indicating strengths in decoding, fluency and phonemic awareness; however, report card grades, CBMs, teacher interview responses, and work samples failed to support these findings. This may related to simplified wording on the WJ-III, an enhanced level of focus on some testing days, or other unidentified factors. Nevertheless, observations of GG in reading class found that she tended to stay on-task and focused slightly more than other students and much more than she did in math class.

GG showed particular weaknesses in reading comprehension and vocabulary on the WJ-III. Comprehension difficulties were noted in all data sources except observations and work samples. This inconsistency is likely related to a lack of material closely related to comprehension during observations and included on the work samples. Vocabulary weaknesses were noted again by the teacher and work sample, but reported as average in report card grades and observations. The report card and observation data may have only reflected oral vocabulary, which is often considered a separate domain than reading vocabulary. Nevertheless, comprehension challenges were much more noteworthy with scores substantially further from the mean. Comprehension relies of vocabulary, so these weaknesses may be considered in conjunction. Ultimately, GG had strengths with the reading process and weaknesses with comprehension of what she read.

**Mathematics**

The results of assessments in mathematics provided mixed results as related to GG’s overall proficiency. Both achievement and diagnostic tests confirmed that GG was notably strong with calculation and weak with concepts and fluency. Work samples and report card grades confirmed strengths in calculation skills, but CBM probes diminish the exceptionalities. This is likely due to GG’s exceeding strength with addition and low average abilities in subtraction. GG scored above the 99th percentile on the KeyMath addition subtest and performed similarly well on addition problems in the WJ-III. Conversely, her subtraction skills were poor on both measures. As the CBM considers calculation in a combined form rather than in separate subtests, it may have provided for clearer overall calculation ability rather than being positively skewed by exceptional addition performance. As such, observations in class and by the teacher confirmed a weakness in calculation as they both included a less compartmentalized interpretation of her calculation abilities.

GG’s noted weakness in conceptual fluency was confirmed in all areas of data collection except for report card grades. Possibly, this is a result of second grade report card data where there is a much larger focus on additive math than subtractive math. As a third grade student, GG may experience confusion that affects her mathematical fluency as subtraction become equally important to a complete understanding of math concepts.

Results in the application/problem solving domain of mathematics are extremely conflicted. The WJ-III indicated this area as a weakness; while, the KeyMath test indicated it as a strength. The report card noted that GG showed an average level of performance in application and problem solving; but teacher interview responses, observations, and work samples considered this a weakness. This may again be related to GG’s success with addition, but could be further due to reading challenges and lacking numeric awareness. The WJ-III had less specific items to test problem solving and applied math, which may have made detection of abilities less likely. Conversely, the KeyMath assessment noted a specific weakness with problem solving, but generally average performance on application skills. Work samples, observations, and teacher interview data may have focused more closely on problem solving skills as those are more common in the third grade curriculum; meanwhile, grades reflective of the second grade curriculum may have been centered on application skills for which GG displayed less difficulty. Altogether, GG demonstrated some notable strengths in mathematics with specific advantages when addition was involved, but weaknesses in areas where her exceptional performance in addition did not overcome some of her challenges in mathematics.

**Instructional Recommendations**

Based on the results of the assessments, academic interventions in spelling, reading and oral comprehension, vocabulary, problem solving, and subtraction facts are suggested. Spelling interventions should include methods for independent practice and self-correction. Comprehension interventions should focus on self-monitoring tools, graphic organizer use, and comprehension skills; while, vocabulary should be assisted with independent study techniques. Math interventions should include meta-cognitive strategies for problem solving and independent practice and self-monitoring for development of subtraction skills and fluency. Together, these interventions will likely develop GG’s skills to facilitate her growth in the targeted areas of need.

**Cover-Copy-Compare for Multiple Skills**

The cover-copy-compare (CCC) strategy may be implemented as an intervention for spelling, vocabulary, and subtraction practice. CCC has been shown to be effective for development of a wide variety of skills in students with special needs, and that skills are generalized outside of the intervention approach (Joseph et al., 2012; Skinner, McLaughin, & Logan, 1997). In this approach, a student first views a complete academic item (i.e. spelling word, defined vocabulary word, subtraction problem with answer); then, the student covers the item and tries to rewrite the item from memory. Finally, the student uncovers the original item and compares it with the copied item. This process is effective for many disciplines, but has been shown most effective in math and spelling where much modern research has focused (Joseph et al., 2012).

In spelling, Wright (n.d.c) suggested using only up to 10 words per practice sheet, but allowing for additional practice by completing more copies of each word or doing additional practice at home (Erion, Davenport, Rodax, Scholl, & Hardy, 2009). Although copying words three times rather than one provides extra practice, teacher should make sure to monitor its success as compared with copying once, as this is only more effective in some students. Worksheets to facilitate use of CCC in spelling and log mastery of spelling words are available at: <http://www.interventioncentral.org/academic-interventions/writing/spelling-cover-copy-compare>. Unfortunately, such resources must be teacher-created in vocabulary and math, but this allows for more specific alignment to class-wide learning goals in these domains.

In vocabulary instruction, the given item is a word and its definition. Then, that item is covered, copied, and checked by the student to complete the CCC process; however, researchers suggested adding a pointing and reading aloud element during the initial viewing stage to enhance efficacy for students that are struggling (Jaspers et al., 2011). In math instruction, a completed math problem is provided for the student, which is then covered, copied, and checked. For GG, these items should consist of mostly subtraction in order to facilitate her development of those skills. Beginning practice may ensue with basic facts which can be completed at home in order to bring her to the level of classmates in those skills. Spelling and vocabulary interventions using the CCC method may be completed at home or as a whole-class practice depending on the needs of GG’s classmates.

**Spelling**

If GG’s spelling challenges are not remedied to an acceptable level using the CCC method, the self-correction spelling test method may be employed. This method was shown to be effective by Gettinger (1985) and is delineated by Wright (n.d.d). In this method, GG takes a pre-test of approximately five given spelling words. Next, she is given flashcards with the correct spelling of each word on them, and she self-corrects items on her pre-test by circling the incorrect letters. Subsequently, the student hides the flash cards and rewrites the words correctly from memory and circles the letters that were originally incorrect. The rewritten word is self-checked against the flashcards for accuracy, and then this process is repeated for the remainder of the incorrect words. She notes that those circled letters are the ones she needs to remember, and repeats the entire process from after the pretest for additional practice. The flashcards are removed and a post test is given. This intervention may be completed in a small group, independently, or at home using the materials provided at: http://www.interventioncentral.org/ academic-interventions/writing/spelling-self-correction-verbal-cues with teacher-determined spelling words. Together, this method and CCC are likely to enhance GG’s spelling abilities to a rate similar to that of her peers based on the research-confirmed efficacy of both methods.

**Reading and Oral Comprehension**

Even with enhanced spelling and vocabulary skills, GG will need more academic interventions to assist with her overall reading and writing abilities. Particularly, GG needs a toolkit that readies her for both reading and oral comprehension. First, GG will require a method for organizing her comprehension of material—both written and heard. Graphic organizers and guided note taking has been shown to be effective in increasing comprehension in reading and listening as well as facilitating student engagement in the classroom (Barnett-Mynes, Morgan, & Tegano, 2010; Heward, 1996; Konrad, Joseph, & Eveleigh, 2009; Wright, n.d.b). GG may have custom guided notes created for her for more difficult topics and stories or use general graphic organizers when reading typical stories. For example, GG may use the mnemonic device, STORY, for Setting, Talking characters, Oops a problem, Resolution, andYes woo-hoo, presented by Naughton (2008) to clarify parts of a story, and organizers can be created simply by including all five letters of the mnemonic device.

Further clarification of comprehension skills may occur in the form of teaching GG to use self-monitoring strategies for comprehension and techniques to use when she discovers her comprehension lacks. To monitor her own comprehension, GG may be taught the “Click or Clunk” technique where she would ask herself if the material clicked, or made sense, or clunked, confused her, after reading each sentence or paragraph in a story (Wright, n.d.a). Once she determined that information “clunked,” GG would need a method for clarifying her understanding. Use of the following comprehension strategies as delineated by Wright (2009) could help her to solve her own comprehension problems with eventual independence: predict, list main ideas, question generation, and clarifying. Prediction entails looking at the title and images of a book to guess what will happen and re-evaluating if they did or did not occur during reading. Listing main ideas involves stating or writing the main idea of a passage after reading every two complete sentences. This may be modified for more advanced books to after each paragraph. The list of main topics can be used to help GG recall different events in the text. Question generation occurs when the student ask who, what, where, when, why, or how questions after every passage to make sure they understand the text. When questions cannot be answered, the student may wish to go back and reread to locate the answers. Finally, clarifying would enable GG to know to look for context clues in surrounding text when she encounters a word or phrase of which is not familiar. The three latter strategies may be used in oral comprehension as well by helping GG formulate appropriate questions to ask when she does not understand the content.

Another set of interventions that may be implemented in a whole-class setting is partner retell and prior knowledge activation. In partner retell, students read a passage together and then have one to two minutes to retell it to a partner (Carnine, & Carnine, 2004). The other student in the pair has the chance to ask questions or make comments and then the teacher calls on a few students to confirm they had similar conversations in their dyads. This method helps to develop main idea construction, and self-monitoring techniques for comprehension. The prior knowledge activation method is particularly useful in academic readings of texts (Taboada, & Gunthrie, 2006). Here, a student is given time to think about what they already know about an instructional topic. Next, they are presented with a passage or other informational stimulus giving them more data about the topic. Finally, students have a short amount of time to answer questions about the topic and then begin to read the selection. A KWL chart may be incorporated into this practice in order to record what the student already knows (K), wants to know (W), and has learned after reading (L) to help solidify any associated learning and background knowledge development in the course of the reading. Together, instruction and practice using these techniques could ensure better comprehension for GG inside and outside of school.

**Mathematics: Subtraction, Fluency, and Problem Solving**

A final series of interventions is needed to ensure GG’s success in mathematics included targeted subtraction and problem solving interventions. Subtraction interventions may begin with use of the CCC technique and incremental rehearsal to increase arithmetic fact acquisition and continue with performance feedback and goal acquisition to motivate fluency development. Subtraction problems may be worked on using the CCC method described earlier at home, and then practiced at school using the incremental rehearsal method. In this approach, the teacher asks the student to answer some basic facts—subtraction items in this case—on flashcards, which are sorted into a “known” problem if the answer is correctly given within two seconds or “unknown” pile if the wrong answer is given or the question was not answered within two seconds (Burns, 2005). The teacher then lifts each card from the known pile and reads the question and states the answer to the child. Subsequently, the student repeats the question and answer. Next, a card from the known pile is placed by the unknown card and both problems are read by the student in succession. This continues adding one card from the known pile until there are ten cards (one unknown, nine known). If at any time an answer is not provided within two seconds, the teacher corrects the student and problems are read from the beginning of that sequence. This rehearsal technique not only practices new facts for the student, but provides automacity with the old facts and eventually increases fluency. Finally, GG’s math abilities should be regularly monitored using CBMs such as AIMSweb or other timed math assessments, so that her growth can be praised with targeted feedback and acquisition of fluency goals is clear to both GG and her teachers. Tracked growth monitoring using math probes has been show to effectively motivate students to work on math skills and targeted feedback allows teachers to give relevant instruction based on errors (Codding et al., 2009). Together, these approaches may be used to develop the fluency with subtraction problems (and perhaps multiplication and division as they are brought into the curriculum) for GG so that she can effectively perform all math functions.

A second necessary intervention for GG’s success in mathematics is a focus on problem solving using the four-step planning approach, or if unsuccessful the drawing approach. In the four-step planning approach, a student is instructed to use the following steps when approaching a word problem: (1) understand the problem, (2) devise a plan, (3) carry out the plan, and (4) look back (Pólya, 1957; Williams, 2003). In this method, the student begins to understand the problem by restating the question in their own words and by noting any irrelevant information or requested information. Next, the student devises a plan by mapping out a solution method through drawing, equation creation, use of manipulatives, or another plan. Now, the student carries out the plan by doing what they planned and checking each step for accuracy. Finally, the student looks back to check the process and the format of the desired answer to provide the best answer to the question. Although very effective, this method may present some challenges to GG based on her low level of conceptual math ability. If this occurs, GG may be taught to draw the problem as an initial strategy for problem solving until conceptual fluency is gained. In the drawing method, a student is instructed to draw a picture of what is happening in the word problem and use the image to solve the problem (Van Gardener, 2006). Instruction on this practice may occur by providing six problems to both the student and the teacher. Next, pictures are drawn for each problem by both participants. The teacher and student share their drawings with each other and discuss how to answer the questions using each drawing. Finally, the student is advised to use this practice on his or her own. With these strategies for problem solving, GG will develop problem solving skills that will help her on worksheets and in real life.

**Summary**

Without a doubt, GG has notable strengths and weaknesses academically; however, proper academic intervention will help to lessen her challenges to perform at levels similar to or above peers. All students have strengths and weaknesses, but some need extra assistance to reach their full potentials. GG is one of these students who could better shine if provided with opportunities to develop those skills where she lacks and highlight those where she flourishes. She is a bright, charming, motivated student with plenty of drive and talent to succeed and based on these assessments, GG has the room to grow into an academically successful student.

**References**

Barrett-Mynes, J., Moran, M., & Tegano, D. (2010). using interactive read-alouds and graphic organizers. *Voices of Practitioners: Teacher Research in Early Childhood Education, 13*, 1-12.

Burns, M. K. (2005). Using incremental rehearsal to increase fluency of single-digit multiplication facts with children identified as learning disabled in mathematics computation. *Education and Treatment of Children, 28*, 237-249.

Carnine, L., & Carnine, D. (2004). The interaction of reading skills and science content knowledge when teaching struggling secondary students. *Reading & Writing Quarterly, 20,* 203-218.

Codding, R. S., Baglici, S., Gottesman, D., Johnson, M., Kert, A. S., & LeBeouf, P. (2009). Selecting intervention strategies: Using brief experimental analysis for mathematics problems. *Journal of Applied School Psychology, 25*, 146-168.

Connolly, A. (1998). *KeyMath Revised/Normative Update.* Circle Pines, MN: American Guidance Service.

Erion, J., Davenport, C., Rodax, N., Scholl, B., & Hardy, J. (2009). Cover-copy-compare and spelling: One versus three repetitions. *Journal of Behavioral Education*, *18*(4), 319-330.

Gettinger, M. (1985). Effects of teacher-directed versus student-directed instruction and cues versus no cues for improving spelling performance. *Journal of Applied Behavior Analysis, 18*, 167-171.

Good, R. H., & Kaminski, R. A. (2012). *Dynamic Indicators of Basic Early Literacy Skills Next.* Eugene, OR: Dynamic Measurement Group.

Heward, W.L. (1996). Three low-tech strategies for increasing the frequency of active student response during group instruction. In  R.Gardner III, D.M. Sainato, J.O. Cooper, T.E. Heron, W.L. Heward, J.W.  Eshleman, & T.A.Grossi (Eds.) *Behavior analysis in education: Focus on measurably superior instruction* (pp.283-320). Pacific Grove, CA: Brooks/Cole.

Jaspers, K., Williams, R., Skinner, C., Cihak, D., McCallum, R. R., & Ciancio, D. (2012). How and to what extent do two cover, copy, and compare spelling interventions contribute to spelling, word recognition, and vocabulary development?. *Journal of Behavioral Education*, *21*(1), 80-98

Joseph, L. M., Konrad, M., Cates, G., Vajcner, T., Eveleigh, E., & Fishely, K. M. (2012). A meta-analytic review of the cover-copy-compare and variations of this self-management procedure. *Psychology in the Schools, 49*(2), 122-136.

Konrad, M., Joseph, L. M., &  Eveleigh, E. (2009). A meta-analytic review of guided notes. *Education and Treatment of Children, 32*, 421-444.

Naughton, V. M. (2008). Picture it! *The Reading Teacher, 62*(1), 65-68.

Pearson. (2001a). *AIMSweb: Reading Curriculum Based Measurement.* Bloomington, MN: Pearson Education Inc. Retrieved Novemeber 10, 2013, from https://coursesite.lehigh. edu/pluginfile.php/896683/mod\_folder/content/1/ORF.zip?forcedownload=1

Pearson. (2001b). *AIMSweb: Written Expression-Curriculum Based Measurement.* Bloomington, MN: Pearson Education Inc. Retrieved November 10, 2013, from https://coursesite.lehigh .edu/pluginfile.php/896690/mod\_folder/content/2/WE.zip?forcedownload=1

Pearson. (2002). *AIMSweb: MAZE-Curriculum Based Measurement.* Bloomington, MN: Pearson Education Inc. Retrieved November 10, 2013, from https://coursesite.lehigh.edu/plugin file.php/896683/mod\_folder/content/1/MAZE.zip?forcedownload=1

Pearson. (2003). *AIMSweb: Spelling Curriculum Based Measurement.* Bloomington, MN: Pearson Education Inc. Retrieved November 10, 2013, from https://coursesite.lehigh. edu/pluginfile.php/896690/mod\_folder/content/2/SPELLING.zip?forcedownload=1

Pearson. (2010). *AIMSweb: Math Computation Curriculum Based Measurement.* Bloomington, MN: Pearson Education Inc. Retrieved November 10, 2013, from https://coursesite. lehigh.edu/mod/folder/view.php?id=428000

Powell-Smith, K. A., & Shinn, M. R. (2004). Administration and scoring of written expression curriculum-based measurement (WE-CBM) for use in general outcome measurement. *AIMSweb Training Workbook.* Eden Prairie, MN: Edformation Inc.

Pólya, G. (1957). *How to solve it* (2nd ed.). Princeton, NJ: Princeton University Press.

Shinn, M.R., & Shinn, M. M. (2002). Administration and scoring of reading MAZE for use in general outcome measurement. *AIMSweb Training Workbook.* Bloomington, MN: Pearson Education Inc.

Skinner, C. H., McLaughin, T. F., & Logan, P. (1997). Cover, copy, and compare: A self-managed academic intervention effective across skills, students, and settings. *Journal of Behavioral Education, 7*(3), 295-306.

Taboada, A., & Guthrie, J. T. (2006). Contributions of student questioning and prior knowledge to construction of knowledge from reading information text. *Journal of Literacy Research, 38*(1), 1-35.

Van Garderen, D. (2006). Spatial visualization, visual imagery, and mathematical problem solving of students with varying abilities. *Journal of Learning Disabilities, 39*, 496-506.Woodcock, R. W., McGrew, K. S., & Mather, N. (2001). *Woodcock Johnson III Tests of Achievement*. Rolling Meadows, IL: Riverside Publishing.

Williams, K. M. (2003). Writing about the problem solving process to improve problem-solving performance. *Mathematics Teacher, 96*(3), 185-187.

Wright, J. (2009, Dec 23). *Be a Careful Reader!: Four Strategies to Better Understand What You Are Reading*. Retrieved December 5, 2013, from http://www.interventioncentral.org/ sites/default/files/pdfs/pdfs\_interventions/recip\_teaching\_1.pdf

Wright, J. (n.d.a). *"Click or Clunk?": A Student Comprehension Self-Check | Intervention Central*. Retrieved December 5, 2013, from http://www.interventioncentral.org/ academic-interventions/reading-comprehension/reading-comprehension-practice

Wright, J. (n.d.b). *Guided Notes: Increasing Student Engagement during Lecture and Assigned Readings | Intervention Central*. Retrieved December 5, 013, from http://www.inter ventioncentral.org/academic-interventions/study-organization/guided-notes-increasing-student-engagement-during-lecture-

Wright, J. (n.d.c). *Spelling: Cover-Copy-Compare | Intervention Central*. Retrieved December 5, 2013, from http://www.interventioncentral.org/academic-interventions/writing/spelling-cover-copy-compare

Wright, J. (n.d.d). *Spelling: Self-Correction with Verbal Cues | Intervention Central*. Retrieved December 5, 2013, from http://www.interventioncentral.org/academic-interventions/writing/spelling-self-correction-verbal-cues

**Tables**

Table 1

*Summary of Reading Scores*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Standard/Scale | Percentile | SDs from Mean | Conf. Interval |
| WJ: Broad | 88 | 21 | 0 | 86-90 |
| WJ: Brief | 89 | 23 | 0 | 87-91 |
| WJ: Basic | 94 | 33 | 0 | 92-96 |
| WJ: Comprehension | 80 | 9 | -1 | 77-83 |
| WJ: Letter Word | 96 | 39 | 0 | 93-98 |
| WJ: Fluency | 95 | 36 | 0 | 90-99 |
| WJ: Passage Comp | 80 | 9 | -1 | 76-84 |
| WJ: Word Attack | 92 | 30 | 0 | 89-95 |
| WJ: Reading Vocab | 86 | 17 | 0 | 83-88 |
| WJ: Pho/Gra Know | 91 | 27 | 0 | 88-94 |
|  | Notes | | | |
| ORF | Median of 64 on 2nd grade probes, instructional level (btw 50 and 75 percentile) | | | |
| MAZE | Median of 5 on 2nd grade probes, instructional level (btw 50 and 75 percentile) | | | |
| Report Card | S- (Marginal performance) in 2nd grade. Noted below in response to literature at beginning of year, marked proficient in speaking and listening skills at end of year | | | |
| DIBELs and DAZE | Consistent “At Risk” performance on grade level probes since kindergarten | | | |
| Work Sample | She seems able to read and comprehend text, but doesn’t attend to all of her work. She skips items and often doesn’t read the entire question or answer. | | | |
| Observation | On task similar to peers at 85% of observed time on task (peer 84%). | | | |
| Teacher Report | Performs “somewhat worse” in oral reading, work knowledge, reading comprehension. Has most success in main idea and main character ID in reading comprehension. Behavior reported as less than satisfactory during reading group and satisfactory to superior in independent seatwork. | | | |

*Note: Test names are defined in text; Vocab= vocabulary; Pho/Gra Know= Phoneme/ grapheme knowledge; btw= between; S = Satisfactory; ID= Identification.*

Table 2

*Summary of Writing Scores*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Standard/Scale | Percentile | SDs from Mean | Conf. Interval |
| WJ: Broad | 85 | 17 | -1 | 82-89 |
| WJ: Brief | 87 | 19 | 0 | 87-90 |
| WJ: Basic | 83 | 13 | -1 | 80-87 |
| WJ: Expression | 93 | 31 | 0 | 89-97 |
| WJ: Fluency | 94 | 33 | 0 | 87-101 |
| WJ: Sample | 93 | 32 | 0 | 89-97 |
| WJ: Editing | 87 | 19 | 0 | 82-92 |
| WJ: Spelling | 84 | 14 | -1 | 80-87 |
| WJ: Spelling of Sounds | 88 | 21 | 0 | 82-93 |
|  | Notes | | | |
| Spelling CBM | Median of 50 on 2nd grade probes, instructional level (btw 50 and 75 percentile) | | | |
| Writing: TWW | Median of 30; 3rd grade instructional level (btw 50 and 75 percentile) | | | |
| Writing: WSC | Median of 22; 3rd grade instructional level (btw 50 and 75 percentile) | | | |
| Writing: CWS | Median of 15; 3rd grade instructional level (btw 25 and 50 percentile) | | | |
| Report Card | S- to S in writing with noted prof in written work over time and conventions | | | |
| Work Sample | She seems pretty close to expected levels in writing, but is weak in spelling. She sometimes does not follow all directions, and is still developing her knowledge of sentence structure and punctuation. | | | |
| Teacher Report | Teacher notes that student is just beginning in writing skills and is performing in an “at risk” category for spelling. | | | |

*Note: Test names are defined in text; btw= between; S = Satisfactory.*

Table 3

*Summary of Mathematics Scores*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | Standard/Scale | Percentile | SDs from Mean | Conf. Interval |
| WJ: Broad | | 83 | 13 | -1 | 79-89 |
| WJ: Brief | | 85 | 15 | -1 | 80-89 |
| WJ: Calc Skills | | 90 | 25 | 0 | 84-95 |
| WJ: Fluency | | 82 | 11 | -1 | 77-86 |
| WJ: Applied | | 82 | 11 | -1 | 77-86 |
| KEY MATH | | 96 | 39 | 0 | 93-99 |
| KM: Basic Concept | | 86 | 18 | 0 | 81-91 |
| KM: Operations | | 105 | 63 | 0 | 100-110 |
| KM: Applications | | 93 | 32 | 0 | 89-97 |
| KM: Numeration | | 6 | 9 | -1 | 4.6-7.4 |
| KM: Geometry | | 8 | 25 | 0 | 6.6-9.4 |
| KM: Addition | | 19 | >99 | +3 | 17.4-20.6 |
| KM: Subtraction | | 8 | 25 | 0 | 6.4-9.6 |
| KM: Division | | 10 | 50 | 0 | 8-12 |
| KM: Mental Comp | | 9 | 37 | 0 | 7.6-10.4 |
| KM: Measurement | | 11 | 63 | 0 | 9.6-12.4 |
| KM: Time/Money | | 10 | 50 | 0 | 8.8-11.2 |
| KM: Estimation | | 8 | 25 | 0 | 6.6-9.4 |
| KM: Int Data | | 9 | 37 | 0 | 7.6-10.4 |
| KM: Prob Solv | | 7 | 16 | -1 | 5.2-8.8 |
|  | Notes | | | | |
| Math CBM | | Median of 23; 2nd grade instructional level (btw 50 and 75 percentile) | | | |
| Report Card | | S in 2nd grade with noted prof in concepts, problem solving, and accuracy | | | |
| Work Sample | | Seems OK, but rushing. Makes errors on items she shows proficiency in elsewhere and often misses problems. Confusion with place value numbers. | | | |
| Observation | | On task less than peer (16% and 22% less) with on task time 73% and 77% while peer was on task 95% and 93%, respectively. Student is on task less often in math than in reading (85% in reading, mean of 75% in math) | | | |
| Teacher Report | | Reported as having difficulty in all areas of math with behaviors from less than to very unsatisfactory during large and small group work; satisfactory to very unsatisfactory in cooperative math groups and independent seatwork; and generally satisfactory in regards to homework. | | | |

*Note: Test names are defined in text; Calc= Calculation; Comp= Computation;   
Int= Interpreting; Prob Solv= Problem Solving; btw= between; S = Satisfactory.*

Table 4

*Summary of Strengths and Weaknesses by Assessment and Subject Area*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Standardized Test | | CBM | Classroom Performance | | | | | Other |
|  | Achievement | Diagnostic | Probe | Grade | Teacher Interview | Observation | Work Sample | DIBELS/ DAZE | |
| Reading: Comprehension | W | *N/A* | W | W | W | A | A | W | |
| Decoding | S | *N/A* | *N/A* | W | W | A | W | *N/A* | |
| Fluency | S | *N/A* | W | W | W | A | W | W | |
| Vocabulary | W | *N/A* | *N/A* | A | W | A | W | *N/A* | |
| Phonemic Awareness | S | *N/A* | *N/A* | *N/A* | W | A | *N/A* | *N/A* | |
| Writing:  Grammar | W | *N/A* | A | A | W | *N/A* | A | *N/A* | |
| Fluency | S | *N/A* | S | A | W | *N/A* | A | *N/A* | |
| Spelling | W | *N/A* | S, W | W | W | *N/A* | W | *N/A* | |
| Mathematics:  Conceptual Fluency | W | W | W | A | W | W | W | *N/A* | |
| Calculation | S | S | W | A | W | W | A | *N/A* | |
| Application/ Problem Solving | W | S | N/A | A | W | W | W | *N/A* | |

*Note: S= Strength; W= Weakness; A= Average Performance; N/A= Not Applicable (No test of this type conducted in this domain).*