

Running head: READING INDEPENDENCE FOR DYSLEXIC STUDENTS

I-N-D-E-P-E-N-D-E-N-T: INCREASING READING INDEPENDENCE FOR
STUDENTS WITH DYSLEXIA

A disquisition presented to the faculty of the Graduate School of
Western Carolina University in partial fulfillment of the
Requirements for the degree of Doctor of Education

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DEDICATION

I dedicate this disquisition journey to my family. First and foremost I thank my husband, Johnny, for his rock steady support. J, I hope you quickly forget what the house looked like whenever I was in one of my frenzied stages of research and writing, but I say with absolute sincerity, I could not have completed this massive undertaking without your constant reassurance. I always knew you valued what I was trying to accomplish and you provided support in more ways than I can count.

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READING INDEPENDENCE FOR DYSLEXIC STUDENTS

ABSTRACT

Due to their unique brain profile, children with dyslexia struggle with acquiring basic literacy skills. Even after basic reading skills have been learned students with dyslexia may still struggle greatly with generalizing their skills to new contexts. Researchers have found that 75 percent of children identified with reading problems in third grade still struggle with reading in ninth grade. Based on federal, state, and local test data, early reading interventions have not been highly successful for students who are at risk for reading failure, many of whom are showing indicators of dyslexia. The brain studies have shown us the *why*; we now know the neural signature for dyslexia. 80 percent of children who are struggling with learning to read have dyslexia. Extensive reviews of reading research have shown us the *what*: we know that effective literacy programs must include the instruction of Phonemic Awareness, Phonics, Fluency, Vocabulary, and Comprehension strategies. And lastly, we looked to the brain researchers and the teachers who have been highly trained in the Orton-Gillingham principles to show us the *how* to effectively teach children with dyslexia. Our national, state, and local problem: **Too many children with dyslexia struggle with becoming proficient, independent readers.** This improvement initiative explored the addition of Peer-Assistive Literacy Strategies (PALS) to an existing evidence-based literacy program; this research has built on the why, what, and how of literacy instruction by adding an additional learning tool that helped foster the generalization of reading skills that led to greater independence for dyslexic children.

Keywords: dyslexia, generalizing skills, peer assisted literacy strategies, struggling reader, social justice, literacy, Orton-Gillingham, O-G

FORWARD

Almost two thirds of our nation's children struggle with becoming proficient, independent readers. As I address this national concern through the lens of my small school world, I am proud to document the scholarly development of my leadership expertise in organizational improvement through the writing of my Carnegie Project Educational Doctoral (CPED) disquisition. I hope to show that I learned and applied appropriate and specific knowledge that I have acquired through my doctoral courses and study of improvement science. I also seek to share the new knowledge that I have generated throughout my improvement initiative, which began by posing significant questions that have focused on complex educational problems of practice. I then stepped into my workplace as the lab for my investigation as I embarked on addressing a national problem of practice that also impacts my 110 students at the Key School at Carolina Day in Asheville, North Carolina. As defined by the CPED and Western Carolina Doctoral Program, my disquisition is a formal, problem-based discourse in which a problem of practice was identified, described, analyzed and addressed in depth, including methods and strategies used to bring about change and to assess whether the change was an improvement.

I-N-D-E-P-E-N-D-E-N-T: Increasing Reading Independence for Students with Dyslexia

Literacy is a bridge from misery to hope. It is a tool for daily life in modern society. It is a bulwark against poverty, and a building block of development, an essential complement to investments in roads, dams, clinics, and factories. Literacy is a platform for democratization, and a vehicle for the promotion of cultural and national identity. Especially for girls and women, it is an agent of family health and nutrition. For everyone, everywhere, literacy is, along with education in general, a basic human right.... Literacy is, finally, the road to human progress and the means through which every man, woman and child can realize his or her full potential.

National, State, and Local Concern

The words offered by Kofi Annan, Nobel peace prize joint recipient (along with the United Nations) and former Secretary General of the United Nations, speak loudly to every American citizen. *Literacy is the gateway to democracy and should be a basic human right. If we know this to be true, why then are we allowing so many of America's children to fail to learn to read?* Despite the wealth of reading research that exists, our National Educational Assessment of Progress (NAEP) continues to show abysmal reading scores. The psychological, social, and economic consequences of reading failure are legion. It is for this reason that the National Institute of Child Health and Human Development (NICHD) considers reading failure to reflect not only an educational problem, but a significant public health problem as well (Lyon, 2003).

Reading research is by far one of the most widely studied topics in the fields of educational and biomedical research (Lyon, 2003). Reading skills in third grade are

highly predictive of future academic performance. Researchers have found that 75 percent of students identified with reading problems in the third grade still struggle with reading in the ninth grade (Francis, 1996; Shaywitz, Escobar, Shaywitz, Fletcher, & Makuch, 1992). Based on federal, state, and local test data, early reading interventions have not been successful for students who are at risk for reading failure, many of whom are showing indicators of dyslexia. The early indicators of dyslexia must be recognized, addressed, and overcome.

The emergence of our literacy problem is visible in the performance of our fourth and eighth graders on the National Assessment of Educational Progress (NAEP), “the Nation’s Report Card,” an assessment administered by the US Department of Education (Nations Report Card, 2013). Over half the children in our nation have scored at basic levels or below, *every time* it has been administered since 1992 (Seidenberg, 2017). The most recent report from 2015 indicated that 61% of our nation’s fourth graders are below proficient in reading and 68% of our nation’s eighth graders are below proficient in reading. As reported by NAEP on our State Report card for 2015, North Carolina’s scores were almost identical to the national scores with the exception of 1 percentage point better for our eighth graders at 67% below proficient (NC Schools Report Cards, 2015).

In our local community, the NC School Report Card for 2016 indicates that the range in percentages of students who have *not* achieved grade level reading skills in grades three through five varies from 19 percent to 54 percent across the 23 public and charter elementary schools in Buncombe County. Although these scores show that fewer percentages of local students have not achieved proficiency in reading, we still see that a

significant number of children are not meeting expectations. As high as one in five children across our nation have a significant struggle with learning to read, (Moats & Dakin, 2008) and 80 percent of these children have dyslexia (Shaywitz, Lyons & Shaywitz, 2006). It is critical that schools understand what dyslexia is and the implications for teaching.

Dyslexia, as defined by the International Dyslexia Association, is a specific learning disability that is neurological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge (Moats & Dakin, 2008).

In the very earliest stages of reading instruction, the struggle that children with dyslexia face in learning to read words accurately and fluently is very apparent. The majority of children who enter kindergarten and elementary school at-risk for reading failure can learn to read at average or above average levels, but only if they are identified early and provided with systematic, explicit, and intensive intervention in phonemic awareness, phonics, reading fluency, vocabulary, and reading comprehension strategies (Lyon, 2003). It is critical to intervene early to make the greatest impact on the reading trajectories of children, especially those at risk for developing reading problems (Hagans & Good, 2013). *My problem of practice* addresses the national, state, and local concern: **Too many children with dyslexia struggle with becoming proficient, independent**

readers. In this improvement initiative, I test the effectiveness of an evidence-based reading strategy that appears to be a possible catalyst to fostering reading independence for primary aged children who have been diagnosed as dyslexic. These students are currently enrolled in the Key School at Carolina Day, a unique educational environment designed to promote achievement for students who have struggled with learning to read and have been diagnosed with dyslexia.

The Facts - Children Won't Outgrow a Reading Problem

Up until a couple of decades ago, the idea of the “late bloomer” in reading was widely believed among researchers and educators. This was a term for the child who was slower than his peers in learning to read; this common view, known among researchers as the “developmental lag” theory, was the reasonable basis for justifying delaying a diagnosis of a reading problem until it was quite severe (Lyon, 2003).

Three longitudinal studies (Juel, 1988; Francis, Shaywitz, Stuebing, Shaywitz & Fletcher, 1996; Shaywitz et al., 1999) have put the developmental lag theory of reading to rest and replaced it with the skill deficit theory. Educators and policy makers can no longer delay addressing a reading problem until it becomes severe. While the early theory stated that difficulties in reading would fade as the brain matured, we now know that children will not pick up these skills unless they are taught directly and intensively. In fact, waiting can be harmful because waiting condemns children to falling further and further behind. Reading proficiently by third grade can be a make-or-break benchmark in a child's educational development. Beginning in fourth grade, students must transition from ‘learning to read’ to ‘reading to learn.’ Independent reading skills are required for

continued vocabulary growth and to gain knowledge in all content areas subjects such as math, science, or social studies. Reading skills are also needed to allow students to think critically about what they are learning, to solve problems, and to act upon and share knowledge of the world around them. According to the National Research Council, future academic and life success such as graduation from high school can be predicted with a reasonable degree of accuracy by knowing a child's reading level by the end of third grade (National Reading Panel, 2000). Too many children are being left – “waiting to fail.”

Policy Response to the Reading Crisis

Federal and state educational policymakers have sought to address the recurrent problem of reading failure. In 2004, the federal government's reauthorization of the Individuals with Disabilities Education Act (IDEA) supported a new concept of early intervening known as Response to Intervention. The hope of this legislation was to respond to learning difficulties before students experience school failure and before they are referred for formal evaluation and possible placement in special education. North Carolina has revised the state version of this concept and named it NC Responsiveness to Instruction.

In the spring of 2013, North Carolina Responsiveness to Instruction (NCrti) policy was revised. North Carolina Responsiveness to Instruction is a multi-tiered framework, which states that it promotes school improvement through engaging, high quality instruction. NCrti employs a team approach to guide educational practice, using a problem-solving model based on data, to address student needs. The descriptions and critical components were very visionary; however, there was a significant disconnect

between the written policy and the implementation within this framework. North Carolina has since revised the Responsiveness to Instruction model with new terminology – Multiple Tiers of Student Support (MTSS).

In July of 2012, the North Carolina Excellent Public Schools Act became law. As a part of this law, the Read to Achieve Program was put in place and implemented during the 2013-2014 school year. North Carolina's Read to Achieve legislation has attempted to put an end to the social promotion process for third graders who do not achieve reading proficiency by the end of third grade. Third graders who have not passed the third grade EOG test will either be retained in third grade or tentatively moved onto fourth grade with the expectation of achieving third and fourth grade level competencies in reading in the next school year. By the end of the first year of Read to Achieve implementation, 34.7 percent of the third graders in Buncombe County Schools scored a Level I or Level II (below proficient grade level in reading skills) on the North Carolina End of Grade Test for Reading (NC Public Schools Report Cards, 2015).

Parent Response to Policy – Focus on Dyslexia

The parental response in our country to these well intended, but unsuccessful policies for their children, has been to create grassroots organizations such as Decoding Dyslexia. Parents have made the connection between their child's reading struggles and the need for schools to specifically target the needs of children with dyslexia. Their unified efforts have reached the ears of the United States Congress and many of our state legislators. As of 2016, thirty-seven states have passed dyslexia laws; North Carolina is not among these thirty-seven. The dyslexia laws focus primarily on: definitions and terminology, early screening, identification, provision of interventions and

accommodations, and eligibility for services (Youman, 2012). In many school settings, the term “dyslexia” is not used to describe students who fit the criteria for this disorder. Instead, school teams and clinical personnel use the terms “specific learning disability (SLD),” which is specified within the Individuals with Disabilities Act (IDEA 2004), and “reading disability,” which is used within the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) of the American Psychiatric Association. Unfortunately the inconsistency in terminology and the lack of a clear definition of dyslexia as a distinct type of SLD have caused confusion regarding the distinction of dyslexia from other language and learning disorders. Thus, in most school districts in the United States, educators place students with dyslexia under the large umbrella of SLD; as a result, the suggested general intervention strategies and accommodations may or may not fit the needs of students with dyslexia (Youman, 2012). In some instances, the identification of dyslexia occurs outside of school. If a student is given a diagnosis of dyslexia from a private provider, parents can request an evaluation for SLD in the school to determine eligibility for services. In most states, only after a school team determines that a student meets criteria for SLD can the student receive specific accommodations and reading instruction. Thus, a child may have clear signs of dyslexia and may have undergone an extensive private evaluation for dyslexia out of the school, but may not have met a school district’s requirements and therefore will not receive specialized instruction and cannot request classroom accommodations (Youman, 2012). This becomes a serious social justice issue for many students; in order to pursue an outside evaluation it requires social capital and considerable expense. In addition, many children are then ineligible for an

alternative private school education without the appropriate diagnosis, even if financial aid was available.

On a national level, a Dyslexia Caucus was formed in the United States House of Representatives and a Dyslexia Resolution was developed. Senator Bill Cassidy (Caucus founder and former Representative from Louisiana who has since been elected to the Senate) submitted this resolution to the Senate in October 2015. This resolution became Senate Resolution 275; the Senate agreed that this was an important stand to take and agreed to support this resolution. This resolution calls on Congress, schools, and state and local educational agencies to recognize the significant educational implications of dyslexia that must be addressed and designated October 2015 as National Dyslexia Awareness month. One note to mention, during my Policy Leadership class in the spring of 2015, I submitted a policy brief to Senator Bill Cassidy's office and was engaged in communication with his lead aid.

It is clear that federal and state policymakers are aware of the reading failure crisis and becoming aware of the implications for specifying the term dyslexia. In spite of well-worded and well-intended laws, a significant disconnect exists between research, policy goals, and instructional practice for the large number of children struggling to proficiently master grade level reading skills. It does not appear that the clear link between the scientific knowledge that informs us of the instructional needs of the unique brain profile of the child with dyslexia and the millions of undiagnosed children who are struggling with reading has fully been made. This improvement initiative will seek to help with this important connection by taking our model of dyslexia education to the next level and offering a highly effective model of practical application of 'research to the

classroom' to be shared with other schools and teachers through our Key Learning Center professional development programs.

What the Research Tells Us about Teaching Reading to Struggling Readers

A strong body of reading research shows that most students who fall behind in reading skills never catch up with their peers to become fluent readers. They fall further and further behind in school, become frustrated, and drop out at a much higher rate than their classmates (Kame'enui, Adams, & Lyons, 2006). Struggling readers find it difficult to obtain rewarding employment and are effectively prevented from drawing on the power of education to improve and enrich their lives (Kame'enui, Adams, & Lyons, 2006).

Despite the presence of a scientifically validated basis for teaching reading, the specifics of exactly how to translate reading research into day-to-day practice remains an essential topic for continued study. This review of the literature examines three critical pieces for effectively teaching reading to students with dyslexia:

- 1) The groundbreaking brain studies that offer a profile of the brain of a student with dyslexia and the implications for a teaching approach with these children who are at great risk for a lifetime of illiteracy,
- 2) The components of reading instruction that must be taught to all children, and
- 3) A focus on reading pedagogy that reveals a highly effective approach for rewiring the brain for individuals who are struggling with traditional approaches to reading instruction and the necessity for highly trained teachers who have the expertise to teach in a brain-compatible way for children with dyslexia.

The forthcoming review of the literature will offer the *why* (some children struggle with learning to read), the *what* (essential components of reading instruction), and the *how* (the effective delivery of instruction for students with the unique brain profile of dyslexia).

Why: The Unique Brains of Struggling Readers

Teachers who work with the most reading disabled students must understand the brains of the children they teach; without this understanding, the classroom instruction could easily be a mismatch for the learning needs of the child. National Institutes of Child Health and Development (NICHD)-funded studies suggest that key areas of the brains of people with reading disabilities (commonly referred to as dyslexia) function differently than in people who read easily. Scientists have taken advantage of fMRI's (functional magnetic resonance imaging) to compare the brain function of people with reading struggles to those of fluent readers (Birsh, 2005). Converging evidence from research indicates that dyslexia represents a disorder within the language system and more specifically within a particular subcomponent of that system, phonological processing. Recent advances in the use of imaging technology, particularly the development of functional magnetic resonance imaging (fMRI), provide evidence of a neurobiological signature for dyslexia (Shaywitz et al., 2006). See Figure 1. Evidence shows that the dyslexic brain profile can be rewired through systematic, explicit, multisensory teaching and that grade level reading can be achieved (Shaywitz et al., 2006). It is critically important to intervene early with students who have this dyslexic brain profile and to approach this instruction in a scientific way.

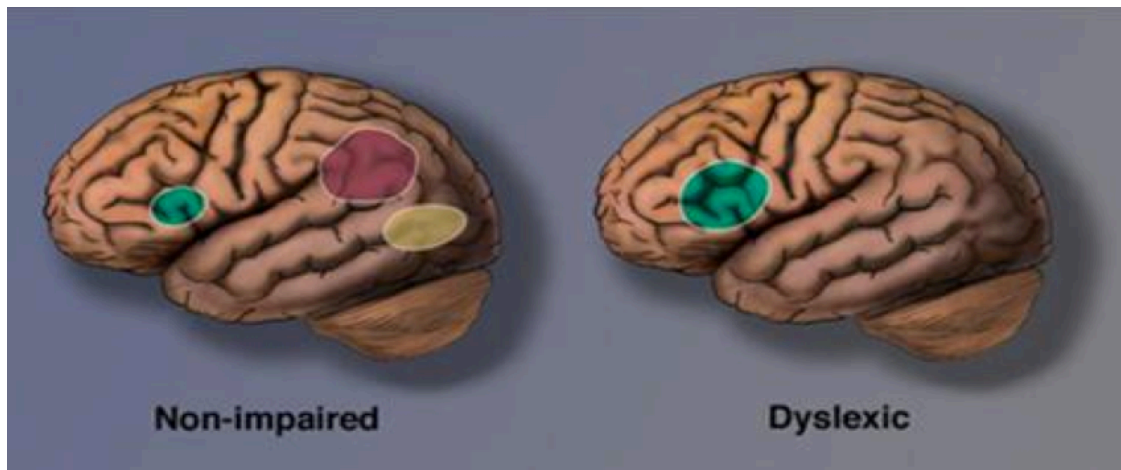


Figure 1. Differences in Brain Activation between Non-dyslexic and Dyslexic Reading Systems. Shaywitz, (2003) *Overcoming dyslexia: A new and complete science-based program for reading problems at any level.* (p. 83). New York. NY.

Figure 1 shows the brain activation patterns in non-impaired readers (left) and readers with dyslexia (right) engaged in phonological processing during a non-word rhyming task. Readers without dyslexia activate three brain regions, one anterior (front of brain) and two posterior (back of brain). In contrast, readers with dyslexia demonstrate a relative underactivation in this posterior region and increased activation in the anterior region (Shaywitz, 2003).

The use of fMRI became available in the early 1980's and has revolutionized the evidence of the neural origins of reading while at the same time providing new and valuable insights into the cause of reading disabilities and effective approaches to interventions. Imaging studies have shown that there are important neurologically based

differences between children with and without reading disabilities (Shaywitz & Shaywitz, 2005). The left occipito-temporal region of the brain has been targeted as a site for skilled, automatic reading. Failure of readers with dyslexia to activate this region explains their lack of automaticity; observation of activation of right hemisphere frontal and posterior regions – ancillary systems for word reading – provides an explanation for why so many students guess from context or pictures or eventually become accurate but not automatic at reading. These secondary systems can permit word decoding but do so slowly and not with the degree of automaticity characteristic of left hemisphere linguistically structured brain regions. These findings have important clinical implications: they confirm the biologic validity of dyslexia and emphasize the need for intervention programs for struggling readers that target the development of fluency and not just accuracy (Shaywitz & Shaywitz, 2005).

In the largest imaging study of a reading intervention and the first report of the effects of a reading intervention on children (Shaywitz, 2003), fMRI was used to study the effects of a phonologically based reading intervention on brain organization and reading fluency in 77 children from 6 to 9 years of age. Children received a systematic, explicit, phonologically based reading intervention (this includes phonemic awareness and phonics) one hour per school day for the entire school year. These children made significant gains in reading fluency and demonstrated increased activation in left hemisphere brain regions important for reading, including the inferior frontal gyrus and the parieto-temporal and occipito-temporal (word form) reading systems (Shaywitz & Shaywitz, 2005). See Figure 2.

Together with the demonstration that this word form area (and the development of fluent reading) develops following a systematic, intensive phonologically based intervention, this evidence provides great hope for increasing our understanding of the fundamental neural underpinnings of reading and reading disability and provides compelling evidence that researchers and educators now have the knowledge and the ability to develop these automatic systems in poor readers. These findings underscore the importance of teaching and the impact of effective reading instruction on the very brain systems responsible for skilled reading (Shaywitz & Shaywitz, 2005).

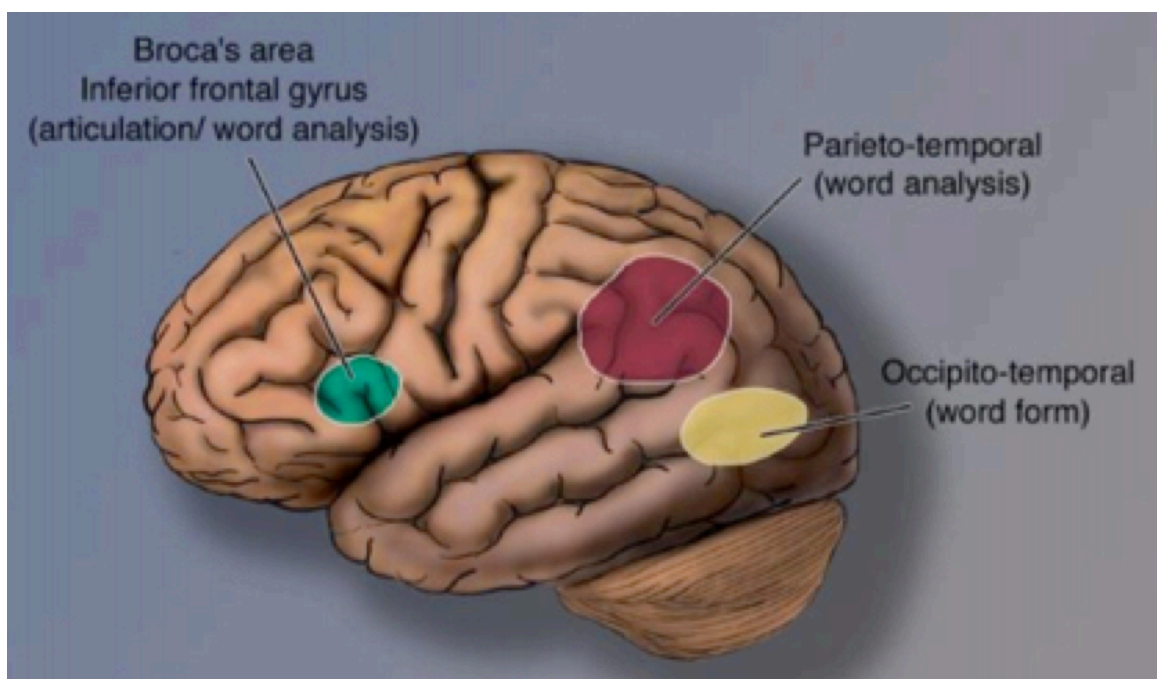


Figure 2. Location and function of the reading systems in the brain. Shaywitz, (2003)

Overcoming dyslexia: A new and complete science-based program for reading problems at any level. (pg. 83). *New York. NY.*

What: Reading Instruction Content

The National Reading Panel conducted the largest, most comprehensive evidenced-based review ever conducted of research on how children learn to read. The Director of the National Institute of Child Health and Human Development created the panel, in consultation with the Secretary of Education, and included prominent experts in the fields of reading education, psychology, and higher education. The panel identified 100,000 reading research studies, and narrowed the selection by sorting for well-defined instructional procedures, those that were experimental in design, those that showed causality between practice and outcomes, and the inclusion of a large sample size. Their recommendations were released in April 2000 in a report entitled, “*Teaching Children to Read*” (National Reading Panel, 2000).

The National Reading Panel found that certain instructional methods are better than others, and that many of the more effective methods are ready for implementation in the classroom. To become good readers, children must develop: phonemic awareness (the ability to (awareness of the smallest units of sound in the speech stream and the ability to isolate or manipulate the individual sounds in words), phonics skills (the sound-symbol association between letters and letter sounds), fluency (the ability to read words in text in an accurate and fluent manner), and comprehension strategies (specific strategies to be applied consciously and deliberately as children read).

The Panel found that many difficulties learning to read were caused by inadequate phonemic awareness and that systematic and explicit instruction in phonemic awareness directly caused improvements in children's reading and spelling skills. The evidence for these casual claims is so clear cut that the Panel concluded that **systematic and explicit**

instruction in phonemic awareness should be an important component of classroom reading instruction for children in preschool and beyond who have not been taught phoneme concepts or who have difficulties understanding that the words in oral language are composed of smaller speech sounds — sounds that will be linked to the letters of the alphabet. Importantly, the Panel found that even preschool children responded well to instruction in phonemic awareness when the instruction was presented in an age-appropriate and entertaining manner.

The Panel also concluded that the research literature provides solid evidence that phonics instruction produces significant benefits for children from kindergarten through 6th grade and for children having difficulty learning to read. The greatest improvements were seen from systematic phonics instruction. This type of phonics instruction consists of teaching a planned sequence of phonics elements, rather than highlighting elements as they happen to appear in a text. Here again, the evidence was so strong that the Panel concluded that **systematic phonics instruction** is appropriate for routine classroom instruction. The Panel noted that, because children vary in reading ability and vary in the skills they bring to the classroom, no single approach to teaching phonics could be used in all cases. For this reason, it is important to train teachers in the different kinds of approaches to teaching phonics and in how to tailor these approaches to particular groups of students.

Children at risk of reading failure especially require direct and systematic instruction in these skills, and that instruction should be provided as early as possible. Children in kindergarten and in the first grade respond well to instruction in phonemic awareness and phonics, provided the instruction is delivered in a vibrant, imaginative,

and entertaining fashion. Children who experience early difficulty in reading respond well to phonics instruction through the late elementary school years. The Panel also concluded that **guided oral reading** has been clearly documented by research to be important for developing reading fluency. In guided oral reading, students read out loud, to a parent, teacher or other student, who corrects their mistakes and provides them with other feedback. Specifically, guided oral reading helped students across a wide range of grade levels to learn to recognize new words, helped them to read accurately and easily, and helped them to comprehend what they read.

By contrast, the Panel was unable to determine from the research whether **reading silently to oneself** helped to improve reading fluency. Although it makes sense that silent reading would lead to improvements in fluency, and the Panel members did not discourage the practice, sufficient research to conclusively prove this assumption has not been conducted. Literally hundreds of studies have shown that the best readers read silently to themselves more frequently than do poor readers. However, these studies cannot distinguish whether independent silent reading improves reading skills or that good readers simply prefer to read silently to themselves more than do poor readers.

To determine how children best learn to comprehend what they read, the Panel reviewed studies of three areas regarded as essential to developing reading comprehension: vocabulary development, text comprehension instruction, and teacher preparation and comprehension strategies instruction. Although the best method or combination of methods for teaching **vocabulary** has not yet been identified, the Panel review uncovered several important implications for teaching reading. First, vocabulary

should be taught both directly — apart from a larger narrative or text — and indirectly — as words are encountered in a larger text. Repetition and multiple exposures to vocabulary words will also assist vocabulary development, as will the use of computer technology. The Panel emphasized that instructors should not rely on single methods for teaching vocabulary, but on a combination of methods.

Likewise, the Panel also found that reading **comprehension** of text is best facilitated by teaching students a variety of techniques and systematic strategies to assist in recall of information, question generation, and summarizing of information. The Panel also found that teachers must be provided with appropriate and intensive training to ensure that they know when and how to teach specific strategies (Langenburg, 2000).

Following the release of the NRPR, the National Reading Technical Assistance prepared another comprehensive reading research report: *Review of the Current Research on Comprehension Instruction*. This publication reviews the research on comprehension instruction published since the 2000 NRP report. Using the same criteria used by the NRP as well as two additional criteria, the review team found 23 studies out of a field of more than 800 articles that met their criteria (National Reading Technical Assistance Center, 2010). For purposes of analysis and discussion, the studies were grouped by area of research interest. I will report on two aspects of the findings: multiple strategy instruction and instruction for at-risk learners.

Teaching students specific reading comprehension strategies, such as finding the main idea, summarizing, and analyzing text structure—and when to use them—helps students become successful readers. Metacognitive strategies concern the reader’s planning, monitoring, and evaluation of the tasks at hand. Intervention studies predating

the NRP report suggest that instruction in metacognitive and reading strategies improves reading comprehension (Duffy & Roehler, 1987).

In addition, the *Review of the Current Research on Comprehension Instruction* explored the effectiveness of three instructional approaches in supplementing the core reading program for at-risk learners: (a) word recognition training, (b) reading comprehension training, and (c) combined word recognition and reading comprehension training. Combined word recognition and reading comprehension training, increased struggling second-grade readers' phonological decoding skills significantly more than did only one approach. Results for the word recognition training-only or the comprehension-only treatment were not significantly different from those for the treated control. In an extension study, students who received supplemental instruction including word recognition training, reading comprehension training or both improved significantly more in phonological decoding and reading real words than did those in the core program alone. Furthermore, the combined word recognition and reading comprehension treatments, for which instruction was explicit, had the highest effect sizes for both pseudo-word and real-word reading (Berninger, Abbott, Vermeulen, & Fulton, 2006). This improvement initiative will offer a model of how this can be done.

How: Reading Instruction Pedagogy

How teachers teach reading is equally as important as what they teach. Teachers who engage their students in learning to read, provide small group instruction and explicit skill instruction in comprehension, and provide modeling and coaching yield students with better outcomes in learning to read. Building on earlier research studies, Guthrie and colleagues (2006) demonstrated that combining motivation practices with strategy

instruction in comprehension increases reading comprehension. Several studies also demonstrated that beginning readers were able to successfully transfer knowledge of comprehension strategies from one literacy activity to another after repeated exposure, explicit explanation, teacher modeling, and questioning. Results from this review should inform both pre- and in-service teacher professional development. Teacher training should prepare teachers to engage students strategically rather than mechanically in approaching comprehension tasks (U.S. Department of Education, 2010).

The review of the research on multisensory learning provides an empirical demonstration that systematic, research-based reading instruction is crucial at the early elementary grade levels and that systematic synthetic phonics instruction (in particular, instruction following the principles of the Orton-Gillingham approach) for the very early grades is effective in combating reading failure. In their one-year study of first graders, the authors found that multisensory teaching techniques that combined all three learning modalities—auditory, visual, and kinesthetic, first-grade students made significant gains in phonological awareness, decoding, and reading comprehension (Joshi, Dahlgren, and Boulware-Gooden, 2002).

The Orton-Gillingham (O-G) approach has been recognized as an effective teacher-preparation model for teaching dyslexic learners for over six decades. The approach is named because of the foundational and seminal contributions of Samuel T. Orton and Anna Gillingham. Samuel Torrey Orton (1879-1948) was a neuropsychiatrist and pathologist. He was a pioneer in focusing attention on reading failure and related language processing differences. He brought together neuroscientific information and principles of remediation. As early as 1925 he had identified the syndrome of dyslexia as

an educational problem. Anna Gillingham (1878 – 1963) was a gifted educator and psychologist with a superb mastery of the language. Encouraged by Dr. Orton, she compiled and published instructional materials as early as the 1930's which provided the foundation for student instruction and teacher training in what became known as the Orton-Gillingham Approach as reported by The Academy of Orton-Gillingham Practitioners and Educators (AOGPE).

The Orton-Gillingham approach to teaching reading encompasses the core instruction components of reading recommended by the National Reading Panel, it is endorsed by the IDA for upholding the Knowledge and Practice Standards for the Teaching of Reading, and it is designed to specifically address the needs of learners with dyslexia by teaching reading utilizing systematic, sequential, and multisensory techniques. The O-G approach is both analytic (breaking down words into component parts) and synthetic (building up words from letters, syllables, and morphemes). A key component of the approach is the use of the visual, auditory, tactile-kinesthetic pathways to explicitly teach phonology, phonological and phonemic awareness, and sound-symbol correspondence. In addition, as stated on the AOGPE website, the O-G approach builds from simple to complex, is cumulative and links learning for students, and is emotionally sound by allowing struggling readers to build confidence by experiencing success through carefully planned diagnostic/prescriptive lessons.

The National Center for Learning Disabilities, the Yale Center for Dyslexia and Creativity (founded by leading dyslexia researchers Sally and Bennett Shaywitz), the Learning Disabilities Association of America, and the International Multisensory Structured Language Education Council describe the best teaching practices for a child

with dyslexia to be inclusive of the Orton-Gillingham principles. While some specifically refer to the Orton-Gillingham approach by name, several of the organizations may not say the O-G approach directly, however, the methods described are a word-for-word description of the O-G approach.

Individuals with dyslexia need help from a teacher, tutor, or therapist specially trained in the Orton-Gillingham principles. A few of the many instructional programs that are based on the Orton-Gillingham principles include the Wilson Reading Program (founder Barbara Wilson, an Orton-Gillingham Fellow), the Sounding System (founder Arlene Sounding, an Orton-Gillingham Fellow), the Spalding Method, Project Read (founded by protégés of Samuel Orton, Paul Dozier, and Paula Rome, Rome), and Alphabetic Phonics (developed by Aylett Cox who trained with an O-G legacy, Sally Childs). There are too many more to be named here.

The Orton-Gillingham approach (O-G) and Orton-Gillingham-based reading instructional programs are commonly implemented reading programs in the United States. In a 2006 research review article published in the *Journal of Special Education*, twelve studies that employed quasi-experimental or experimental designs were reviewed. These studies included elementary students, adolescents, and college students. The largest effect sizes for implementation of the O-G approach reported in these studies was shown for word attack and non-word reading outcomes, with a mean effect size of .82, and comprehension outcomes, with a mean effect size of .76 (Ritchey & Goeke, 2006). With .50 being a moderate effect size and .80 being a strong effect size, these two effect sizes reported show a strong effect from the O-G instruction. (Ritchey & Goeke, 2006). As a teacher, principal, and Fellow Level Orton-Gillingham teacher trainer, I have seen

the tremendous success that this approach brings to unlocking literacy for dyslexic children. Through this multisensory approach children can secure their learning of the structure of the English language on solid ground; the automatic connections that are built between how a letter looks, how it sounds, how the sound is formed with the mouth and throat, and how the hand writes (forms) the grapheme that represents the sound allows the child to decode and encode words with efficiency. It is clear that left-brain hemisphere systems are being activated and automaticity in reading is being achieved. The Key School recognizes that the strong reading research that supports the instructional components included in the O-G approach and the explicit, systematic, cumulative structured aspects of Orton-Gillingham leaves O-G practitioners with little doubt why the approach for which they have received a high standard of training is so very successful for children diagnosed with dyslexia.

Two to five students with dyslexia are in all of America's classrooms. As mentioned by Kyle Ledford, one of the directors of *The Big Picture* movie about dyslexia, dyslexic children are often the ones who elevate class discussion but cannot craft a coherent sentence to express their understanding. They may be the students who demonstrate excellent comprehension related to anything read aloud, or explained orally, but struggle with content they are left to read on their own. Dyslexics are frequently the students who puzzle us with their uneven skills and performance. To help them achieve their potential, we need to know who they are, understand their challenges better, and put effective plans and practices in place to support them. However, to do any of that, we need to first start saying the word. The brain studies have shown us the *why*; we now know the neural signature for dyslexia. Extensive reviews of reading research have

shown us the *what*: we know that effective literacy instruction must include the instruction of Phonemic Awareness, Phonics, Fluency, Vocabulary, and Comprehension strategies. And lastly, we look to teachers who have been highly trained in the Orton-Gillingham principles to show us the *how* to effectively teach dyslexic children.

Teachers who work with the most reading disabled students must understand the brains of the children they teach and have the tools to teach them in the manner in which they can be successful. Students deserve the maximum amount of learning in the shortest amount of time in order to close the reading gap and reach grade level skills. Teachers must be highly trained to have the skills to effectively intervene with their students in a timely manner, and deserve professional development with a model or framework to guide them in making the appropriate adjustments to their instructional program to truly meet their students' needs (Damer, 2010).

An End to the Philosophical Reading Wars

The history of reading education in our country has taken many roller coaster rides. Reading wars have raged for many years among educational leaders over the most effective approach to teaching reading. The review of current research has ended the reading wars, but many standouts still cling to one-sided views of reading instruction. In order to win these teachers and educational leaders over, it is very important to understand their beliefs.

The traditional bottom-up view of reading is known as *phonics*. The approach was influenced by behaviorist psychology of the 1950's. Language is viewed as a code and the reader's main task is to identify graphemes and convert them into phonemes. Advocates of phonics insist that reading is a code-based language with 26 letters that are

used in various combinations to represent 44 phonemes in the English language; students must first be given the code and then they will have the decoding tools to unlock the written word. Comprehension cannot occur without first unlocking the words.

The top-down processing theory is known as the *cognitive view*. In the 1960's a paradigm shift occurred in the cognitive sciences. An emphasis on meaning eventually informed the top-down approach to learning to read in the 1960's and 1970's. In this view, reading is not just extracting meaning from a text but a process of connecting information in the text with the knowledge the reader brings to the act of reading. In the simplest terms, the "whole language approach" is a method of teaching children to read by recognizing words as whole pieces of language. Proponents of the whole language philosophy believe that language should not be broken down into letters and combinations of letters and "decoded." Instead, they believe that language is a complete system of making meaning, with words functioning in relation to each other in context (Bomengen, 2015).

Another top-down theory is known as the *schema theory*. The reader's knowledge and previous experience with the world is crucial to deciphering a text. The ability to use this schemata, or background knowledge, plays a fundamental role in one's comprehension. Whole language is a constructivist approach to education; constructivist teachers emphasize that students create (construct) their own knowledge from what they encounter. Using a holistic approach to teaching, constructivist teachers do not believe that students learn effectively by analyzing small chunks of a system, such as learning the letters of the alphabet in order to learn language. Constructivist instructors see learning as

a cognitive experience unique to each learner's own perspective and prior knowledge, which forms the framework for new knowledge.

It is important to have this understanding of the recurring “camps” of reading disagreement so we can all move on and give children what they truly need by expressively pointing to the full body of research. As previously mentioned in depth, when the National Institutes of Child Health and Development (NICHD) released the report of the National Reading Panel it became crystal clear that in order to reach the struggling readers and enhance the ability to decode unfamiliar words, children must explicitly be taught the code including phonemic awareness, phonics, and fluency. In order to understand what they are reading, children must be explicitly taught vocabulary and comprehension strategies. The NRPR report essentially ended the reading wars: we must teach it all.

The Key School – A Community Initiative for Students with Dyslexia

The Key School at Carolina Day was founded in 1997 through a community initiative to offer our children with dyslexia in Buncombe County, North Carolina a unique educational alternative and to raise awareness of the gifts and strong potential that individuals with dyslexia possess. Many families began seeking other school options when they recognized that their child's current school was unable to effectively intervene when their students experienced failure to achieve grade level reading skills; these families would frequently reach out to their doctors for help. A majority of these students who were often labeled as learning disabled actually have the unique brain profile of dyslexia. Carolina Day School hired me in 1997, initially, to establish a learning center program to address the needs of bright dyslexic students in our community and at

Carolina Day who were hitting a wall with their educational progress because their unique learning needs (particularly in reading) were not being met.

During our short nineteen-year history, the principal and admission director of the Key School continue to hear the same stories from families seeking our program. Usually the messaging the previous school has given the family includes comments such as: “This is developmental”, “Your child will outgrow this”, “Your child is so bright; he simply needs to apply himself and try harder”, or “Your child is not smart and may never learn to read.” Realizing the urgency and importance of providing their children with essential foundational skills, frustrated families seek non-traditional education programs to help their children.

Students who enroll in the Key School have solid to strong cognitive potential, have a moderate to severe degree of dyslexia, and have not been successful in learning literacy skills in previous school settings. The Key School provides intense literacy instruction by highly trained teachers in a 3:1 classroom setting for their comprehensive language instruction. The school employs a multisensory structured language teaching approach that holds as its foundation the principles of the Orton-Gillingham approach. In addition to our teacher training credentials, the Academy of Orton-Gillingham Practitioners and Educators accredited the Key School’s language program.

The Mission and Goals of the Key School

The mission of the Key School is to offer bright students with dyslexia the educational opportunity to overcome their academic challenges while discovering and embracing their own dyslexic mind-strength gifts.

The goals of the Key School:

- Close the gap between academic performance and student potential.
- Develop new neural pathways for reading, writing, and spelling through individualized multisensory instruction.
- Build a deep understanding of math concepts through multisensory math instruction.
- Foster a learning culture that is intellectually engaging and promotes curiosity, perseverance, resiliency, and a growth mindset.
- Provide a comprehensive college preparatory curriculum while preparing students to apply new tools and strategies across learning environments, enabling them to succeed in their transition to other schools.
- Inspire life-long success by developing skills needed for critical thinking, **independence**, self-advocacy, organization, planning, and time management.
- Educate our Carolina Day School families and community about dyslexia and its lifelong impact by providing information, support, and resources.

The Key School – Pathways Forward

The Key School seeks to: 1) improve the rate at which our students can achieve independence in ‘learning to learn’ and in applying their learned reading strategies and 2) to improve the continued learning trajectory for our students who transition from our program by improving the expertise of all teachers.

Students who entered the Key School in first and second grade are showing strong yearly progress in reading skills when given individual and small group assessments, however, they are not showing independence and efficiency as quickly as we had hoped in applying learned reading strategies and learning to learn strategies when teacher

support and structure are removed. My plan for improvement change will involve teaching and evaluating the addition of a new learning tool that will hopefully provide the missing piece of facilitating opportunities for students to become proficient and independent in applying their learned reading skills in a collaborative, social setting. In order to fully achieve this future success, our youngest students require strategies and practice with their peers to demonstrate that they “own” their newly learned reading skills. The Key School exists to close the gap between academic performance and student potential and to support our students’ success in their transition once they leave our school.

This specific change intervention will be studied through the application of improvement science. *Our aim is for students in the primary grades at the Key School to demonstrate an independent application of essential reading skills and ‘learning to learn skills’ and to generalize these skills independently in their Language Comprehensive Class, in all other classes, and in contexts beyond the Key School.* This will allow them to transition from the Key School in a shorter amount of time and foster their continued growth in the regular classroom setting.

The Key Learning Center

In response to requests from families, public and homeschool educators, and our own need to train our teachers, the Key Learning Center (KLC) was established in 1999 as resource for professional development for teachers and community outreach programs for families, professionals, and other interested community members. The KLC has developed into a nationally accredited teacher-training center to support teachers in

learning how to teach the struggling child with dyslexia. We are currently accredited by all three international organizations designed to maintain the knowledge and practice standards for the teaching of reading: The International Multisensory Structured Language Council (IMSLEC), the International Dyslexia Association (IDA), and the Academy of Orton-Gillingham Practitioners and Educators (AOGPE).

The Key School and Key Learning Center have sought to address the local reading challenge by creating a model of effective classroom instruction practices that could be replicated in public schools and by teaching this model through our teacher training courses to teachers from a variety of schools. Each summer our professional development courses are filled with anxious teachers from public, homeschool, and independent schools who are seeking to learn new tools to address the reading crisis in their schools. In addition to our aim of developing our students into confident, independent readers at the Key School and beyond, we seek to take our knowledge that is gained through the application of improvement science, and create another teacher training module through the Key Learning Center in Peer-Assisted Literacy Strategies: Teaching students with dyslexia to become independent readers through PALS.

Improvement Process at the Key School

*“If you can’t describe what you are doing as a process, you don’t know what you are doing.” (Deming quoted in *The Improvement Guide*, 2009. P. 84)*

W. Edwards Deming, the author of the above quote, proposed a body of knowledge called a “System of Profound Knowledge” that provided the intellectual foundation for improvement science (Langley et al., 2009). His word profound refers to the deep insight that knowledge offers into how to make changes that will result in

improvement; improvement begins with the application of knowledge (Langley et al., 2009). Improvement science can be used to accelerate how a field such as education learns to improve by deploying rapid tests of change to guide the development, revision and continued fine-tuning of new tools, processes, work roles and relationships. It is a user-centered and problem-centered approach to improving teaching and learning. Achieving successful change in complex work systems means recognizing that one cannot predict ahead of time all the details that need to be worked through nor the unintended negative consequences that might also ensue. Successful change strives for the triple aims of educational improvement: improved effectiveness, greater efficiency, and enhanced engagement on the part of the student and the educators (Bryk, Gomez, Grunow, & LeMahieu, 2015). These principles have been addressed through my improvement initiative by answering three fundamental questions: (1) What is the problem I am trying to solve? (2) What change might I introduce and why? and (3) How will I know if the change is actually an improvement?

What is the Problem I Am Trying to Solve?

Problem analysis. Prior to developing the design of my change initiative, I engaged in problem analysis utilizing a fishbone diagram (Ishikawa Diagram) as our tool. This diagram helped me and our Design Team identify possible causes for my Problem of Practice: Students with dyslexia struggle with becoming independent readers and do not often generalize their reading skills to new situations and contexts. See Figure 3 below.

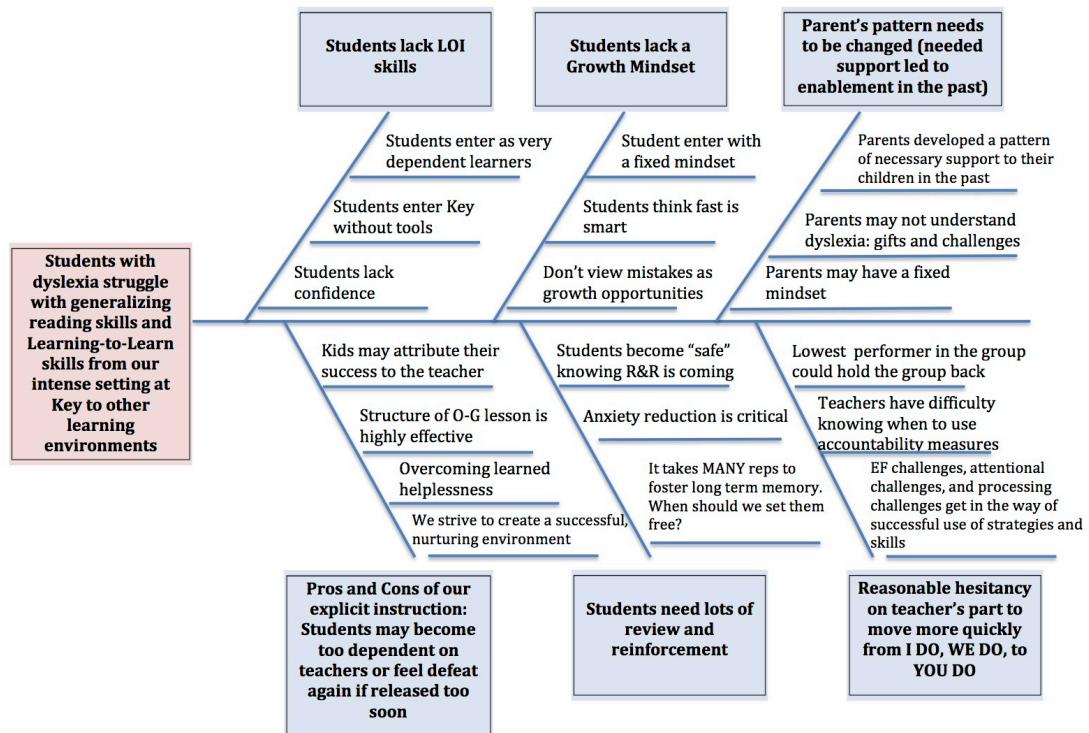


Figure 3. Ishikawa Fishbone Diagram of Problem Analysis

The problem analysis enabled us to look at the many factors that contribute to a lack of the development of independence in our primary students at the Key School. Through the design of our improvement initiative we have directly targeted 1) the students' lack of ability to generalize their reading skills due to a lack of independent and strategic-based practice, and 2) a lack of clear communication in articulating the components and the importance of 'learning-to-learn' skills for our first and second graders amongst our faculty, with our students, and with our parents. Through the improvement science process and implementation of the 90-Day Cycle for improvement, we have educated our students, teachers, and parents every step of the way. The theory

of improvement targeted the primary driver of teacher knowledge and professional development; the vehicle for the change initiative was the implementation of PALS. We selected teacher knowledge because it is a high leverage driver that we could manipulate quickly. PALS provided a new learning strategy for students and the professional development involved provided a new teaching strategy for the teachers. The improvement science process included all of the constituents by involving them in Design Team planning, focus groups, surveys, observation, professional development, student instruction, modeling, analyzing, tweaking the prototype, and celebrating the success.

Background for problem of practice in the local context. In spite of intense, evidence-based early intervention in the primary grades, many students with dyslexia struggle with independent application of their reading skills and learning-to-learn skills to other contexts once they leave the supportive 3:1 student-to-teacher ratio in their multisensory Language Comprehensive class at the Key School. The primary goal of our school is to provide our students with the academic skills (primarily reading) and independent learning-to-learn skills to enable our students to be successful in transitioning to a regular classroom setting after they have met their individually prescribed learning goals at the Key School.

Prior to a transition, students should demonstrate independent application of reading skills in their Language Comprehensive class when teacher guidance is removed through ‘You Do’s’ (‘You Do’s’ are the last component of our success building process involving three steps of instruction: I Do, We Do, and You Do.); in their content area classes such as science, social studies, and math classes; and when students are reading at home with their parents. We base our model on the Gradual Release of Responsibility

theory first coined by Pearson and Gallagher. This gradual release of responsibility model of instruction has been documented as an effective approach for improving literacy achievement, reading comprehension, and literacy outcomes for English language learners (Duke & Pearson, 2002). Once the student has shown competence through ‘You Do’s’ and skills can be observed and generalized to other settings without cueing, students have a high likelihood of generalizing their skills to a regular academic setting once they transition from the Key School. Students with dyslexia who have gained independent learning skills will be less likely to develop the learned helplessness that often occurs with a fixed mindset that frequent teacher cueing is essential for success, and most importantly, the more quickly students acquire reading proficiency and the tools to generalize their reading skills to new settings, the more likely they will be empowered learners with a growth mindset towards embracing their dyslexia.

What Change Might I Introduce and Why?

The Key School’s literacy program currently incorporates the evidence-based essential components of reading instruction as recommended by the National Reading Panel and the principles of the Orton-Gillingham multisensory teaching approach designed for teaching students with dyslexia. Our teachers are highly trained and have acquired credentials with the leading credentialing institutions for teachers of students with dyslexia. Despite intense explicit instruction and measured student demonstration of new reading skills on individual and group assessments, students struggle with applying their skills in new situations when the structure is removed.

This disquisition proposed a change that involved teaching and evaluating the addition of a new learning tool for students to become proficient and independent in

applying their learned skills. As students progress through school, learning how to engage with text becomes increasingly important for learning. Although well-trained teachers can teach isolated skills such as phonological awareness or decoding efficiently through careful instruction, reading comprehension relies on foundational reading skills in concert with strategic use of and a range of cognitive processing skills. The proposed Peer Assisted Literacy Strategies intervention provided students with an opportunity to do both, and to gain automaticity, confidence, independence, and collaborative social experiences working with their peers.

Thirty years of research have pointed to the effectiveness of utilizing peer-assisted literacy strategies, in combination with a comprehensive reading curriculum, to improve reading progress and to add additional engaged reading time to each student's day. One notable program that was developed at Vanderbilt University is referred to as Peer-Assisted Learning Strategies (PALS). PALS was developed in response to the need for feasible yet powerful early reading strategies. Designed to enhance rather than replace an existing reading program, PALS is conducted with the entire class during three weekly 35-minute sessions for approximately 16 weeks. During these sessions, time is allocated so that all students are simultaneously engaged in reading activities (Greenwood, Delquadri, & Hall, 1989). This results in students receiving double or triple the typical amount of reading practice in a day (Greenwood et al., 1989; Mathes & Fuchs, 1994).

Over the timespan of a decade, Fuchs and Fuchs (2005) empirically tested the value added by various components of PALS at grades two through six, and they evaluated their combined effects in large randomized field trials. In one such study, 40 teachers were randomly assigned to PALS or no-PALS conditions. All 40 teachers

allocated comparable time to reading instruction. For 15 weeks, 20 teachers implemented PALS class wide. Data was collected on 3 students in each class representing three types of students: reading-disabled students, nondisabled low achievers, and average achievers. Compared with conventional (no-PALS) instruction, PALS students improved more in reading, and their superior growth was not mediated by student type. Students in all 3 categories outperformed their respective counterparts in no-PALS classrooms. Effect sizes were .32 for reading fluency and .56 for comprehension. In a subsequent investigation, effect sizes for high achievers and English-language learners were even larger (Fuchs & Fuchs, 2005). In a review by the Institute of Education Sciences, What Works Clearinghouse found that the addition of PALS with kindergarten and first grade students had a statistically significant impact on the Alphabetic domain of the progress assessment. The p-value was found to be less than $<.05$. Although this assessment did not show the gains in fluency and comprehension to be statistically significant, moderate gains were made in the comprehension area. Overall, PALS showed moderate to strong effects for significant outcome measures when post tested in improving the reading skills of kindergarten and school age children (Fuchs & Fuchs, 2005).

In addition to the academic benefits, both teachers and students report that they find PALS enjoyable. Teachers report that once the procedures are in place, the routines are fairly easy to sustain. Teachers also note that PALS contributes positively to reading achievement, enhances social skills, and increases reading self-confidence. Students rate PALS very positively as well. They report that PALS helps them become better readers and they like doing it (Mathes Grek, Howard & Allen, 1999).

PALS is a technique in which children work in pairs, taking turns as teacher (coach) and learner (reader), to learn a structured sequence of literacy skills including improving reading accuracy, self-monitoring, and a variety of comprehension strategies. See Table 4. Children use a simple error-correction strategy with each other, under guidance from the teacher. In the original Vanderbilt-designed PALS program, students receive 7 training lessons with teacher modeling on how to effectively implement PALS and utilized specific reading strategies; they are given the chance to practice and model the techniques before they are asked to begin the program. Every student in the class is paired by the teacher with the aid of reading scores and teacher data; the highest performer from the top is paired with the highest performer from the bottom half, and the pairings continue. Coaching and reading roles are reciprocal; the stronger reader reads first. Both students in the pair read from material appropriate for the lower reader. PALS activities accommodate narrative or expository material. Pairs become a team for which they earn points on a scorecard for completing activities correctly and for exhibiting good tutoring behavior. Each pair keeps track of points on a consecutively numbered scorecard, which represents joint effort and achievement. At the end of the week, each pair reports its total; the teacher sums each team's points; and the class applauds the winning team. Every 4 weeks, the teacher assigns new pairs and teams. Thus the PALS motivational system combines competitive and cooperative structures (Fuchs & Fuchs, 2005).



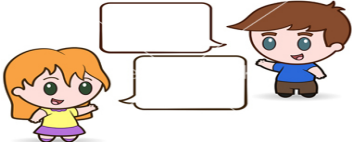

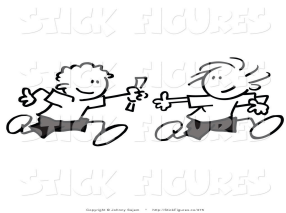
	<p>Partner Reading The Reader reads aloud, receiving immediate corrective feedback if words are mispronounced. The program calls for the stronger reader in each pair to read first, which is designed to provide an opportunity for the weaker reader in the pair to preview the passage and review difficult words before it is his or her turn to reread the same text. Students switch roles after five-minute blocks or when assigned passages have been read.</p>
	<p>Check It Check It is a strategy initiated by the coach when the reader makes a reading error. The coach says, “Check It! The reader then responds by following through with a strategy for self-correction. If needed, the coach may offer further assistance, but eventually leads the reader to restate the correct work and then will ask the reader to “Start the sentence again” to build reading accuracy and fluency.</p>
	<p>Retell Retell is a strategy to enhance comprehension and help the reader remember the sequential order of the story. Upon the reader’s completion of a reading passage, the coach will ask, “What happened first? What happened next? What happened last?”</p>
	<p>Paragraph Shrinking Upon completion of a reading passage, the coach asks the reader 3 questions: What is the most important who or what in the passage? What is the most important thing to know about the who or what? Can you state the main idea in ten words or less? Students are given 10 cards as a multisensory tool; each time they say a word they lay down a card. This helps with accountability and organization of thought.</p>
	<p>Prediction Relay The Reader predicts what is likely to happen next on the next page, reads aloud from the page, and summarizes the just-read text, with both students deciding whether the predictions are accurate. Students switch roles after five-minute blocks.</p>

Figure 4. Typical Second Grade PALS Strategies Employed

As mentioned previously, the motivational system used for the grades K–6 *PALS* program involves students earning points for their team by reading (or rereading) sentences without error, working hard and utilizing the comprehension strategies assigned to that lesson. Points are awarded by coaches and teachers and are recorded by students on scorecards. Support for use of rewards with peer tutoring was shown to be statistically significant in one meta-analysis of 26 single-case research experiments for 938 students (Bowman-Perrott, Davis, Vannest, & Williams, 2013). In addition, the effect size for peer tutoring for students with learning disabilities was considered strong at a .75 (Bowman-Perrott et al., 2013).

The majority of studies conducted on PALS were in public school settings with diverse student populations. An advantage of peer mediation is that subgroups of children in the same classroom can operate on different levels of curricula and use different instructional procedures. Teachers, in effect can oversee many lessons simultaneously and address a broader range of students' educational needs, including those of many English-language learners and students with disabilities. Research in the elementary grades shows that children's reading competence improves when they work with each other in a cooperative and structured manner (Fuchs & Fuchs, 2005).

At the Key School we have a very individualized reading and comprehensive language program that is delivered in a reading class of three students with one teacher for 85 minutes each day. Currently our program is highly structured and for the most part, teacher directed. Brain breaks and movement are built into the structure of the lesson. Our teachers are highly trained, and we are not necessarily seeking PALS as a

tool to increase or improve academic instruction as some schools have done. We sought to teach our students explicit reading comprehension strategies and allowed them to use PALS as a reinforcement tool to increase student confidence and independence; during each PALS lesson they engaged in partner reading and had the opportunity to read and coach as they learned to master their strategies and help one another in designated independent reading sessions. The inclusion of three (and eventually five) PALS sessions per week offered students the chance to practice what they know as a reader and coach and by doing so they became empowered, less dependent on teacher cueing, and more skilled in application. In addition to our current curriculum that includes Phonemic Awareness, Phonics, Oral Expression, Fluency, Spelling, Grammar, Writing, Vocabulary, and Comprehension instruction and our application of the principles of the Orton-Gillingham multisensory teaching approach, we implemented and evaluated the use of Peer-Assisted Literacy Strategies through the application of improvement science. Evidence of improvement will be presented as our students in the primary grades at the Key School demonstrated independence in applying essential reading and learning-to-learn skills and generalized these skills independently in their Language Comprehension class, in all other classes, and in home learning contexts beyond the school day.

THEORY OF IMPROVEMENT

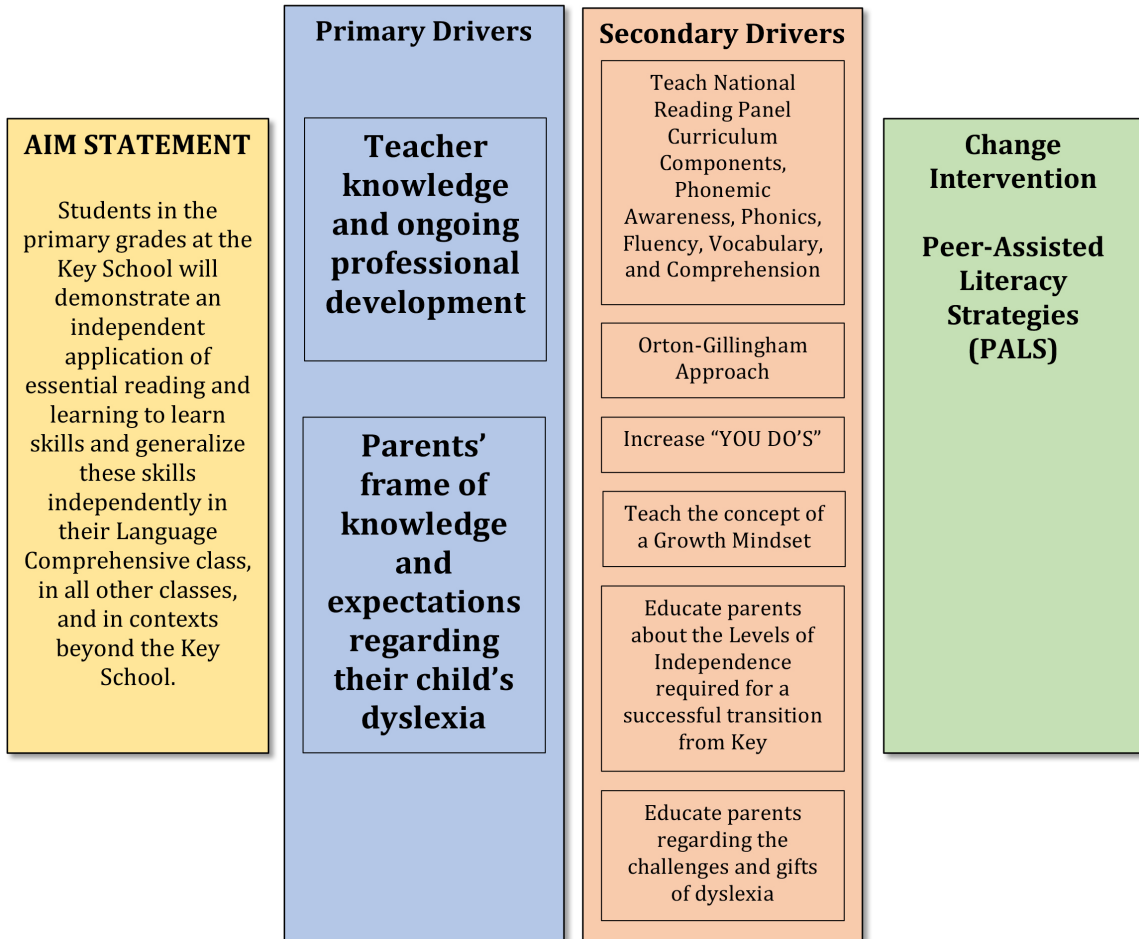


Figure 5. Design Initiative

How will I know if the change initiative is actually an improvement?

To determine if this change initiative is an improvement, this question will be answered in two ways. First, a general overview will be provided with a description of what independence looks like in the school setting; secondly, the evidence of change will be described through the data collection and data analysis process sections.

In the school setting, this change initiative will be considered an improvement when students in the primary grades at the Key School demonstrate an independent application of essential reading skills in non-guided contexts: 1) In their Language Comprehensive class during partner practice time when demonstrating new skills, 2) During “You Do Assessments” with the absence of coaching or cueing once skills have been mastered, 3) During independent PALS reading sessions, 4) In math, science, social studies, and talents classes at Key, 5) At home when doing home learning and other experiences beyond the school day, and ultimately an area that cannot be assessed in this study - in the regular classroom settings once students transition from Key.

Independent student application of skills will be defined as:

- Uses word attack strategies to unlock unfamiliar words as needed including: tracking while reading, tapping (with the Check IT strategy), blending, dotting & swooping words, chunking words in meaningful units while reading orally, rereading when meaning is not acquired the first time, etc.
- Employing PALS comprehension strategies efficiently and effectively during PALS time and in other Key School classes

- Displaying outward confidence as shown in body language and oral language – I will get this! Showing a growth mindset – I don't understand this – YET!
- Displaying an ability to work with peers as a coach, a friend, and a supporter
- After trying first, seeking help through the use of specific questioning instead of saying, "I don't get it!"
- Demonstrating these and other work habits and independent skills in other classes and other learning settings outside the structure of the 3:1 student-teacher ratio of the Language Comprehensive class. Specific independent skills will be documented through the Level of Independence rubrics employed at the Key School and will be documented throughout the improvement project.

Specific measures that indicate an improvement including outcome measures, balancing measures, and process measures will be described below in the data collection section.

Overview of Data Collection Strategies

Improvement science was employed as the methodology for this research study, and disciplined inquiry drove the improvement. Throughout this research disquisition, I continuously assessed whether or not a change was an improvement through the use of process measures, outcome measures, and balancing measures. This information will be used to inform my ongoing Plan, Do, Study, Act (PDSA) cycles for improvement.

Direction and collection. Clarifying my three types of measures helped determine what information was to be collected and analyzed. *Process measures* are the specific steps in a process that lead – either positively or negatively – to a particular outcome metric. In order to determine if the chosen intervention of implementing a Peer-Assisted Learning Strategy (PALS) was effective, I monitored first to see that the students implemented the strategies correctly and secondly to monitor their level of independence in utilizing the strategies. My two process measures were daily checklists and point scorecards. The classroom teachers and other staff members completed the daily observation checklist as they observed the students while they engaged in PALS. This data was used for daily and weekly teacher feedback to target if iterations of our design needed to be made. At times they indicated that the students were not able to implement a particular strategy independently; this cued our teachers to focus on re-teaching or reviewing and reinforcing the strategy. To ensure internal validity, other observers entered data as well including the principal, our Director of Admission, our Administrative Assistant, and our Director of Teacher Training. See Appendix A for the PAL student observation checklist. In addition, a student scorecard was utilized to document daily completion of PALS activities, motivate students to “do it right,” and encourage supportive peer interactions.

My second set of measures was the *outcome measures*; these measures were used to assess whether my AIM or overall outcome of improvement was achieved. As a measure of change in a student’s independent learning skills, a Level of Independence rubric was developed and utilized. This rubric outlined the specific desired performance indicators that served as evidence to defend or negate whether the overall AIM of

students displaying a high level of independence in employing reading and learning to learn strategies was achieved. Data was collected from the teachers that indicated whether the sub skill was at one of the following levels of independence prior to and following the PALS intervention: *1) Level I – Not Yet, 2) Level II - Emerging, 3 Level III – Developing Competency, and 4) Level IV – Proficient.* See Appendix B for the Level of Independence Rubric for Second Grade.

Student attitudes of self-efficacy were measured with pre and post surveys to determine if their belief in their ability to be independent learners changed with the PALS intervention. See Appendix C for the Student Self-Efficacy Survey. Teacher focus groups and parent surveys were utilized to target perceptions and observations of changes in student behavior in a variety of settings. These settings will include “You Do’s” in the Language Comprehension class; student behaviors during PALS reading sessions, application in science, social studies, math class, and big group times; and parent observation of home learning assignments. See Appendix D for the Parent Survey.

My third set of measures served as *balancing measures* that ensured that the implementation of PALS moved overall reading and learning-to-learn skills forward and had not caused a regression or slowing of skill progression. A baseline measure and a post intervention measure was achieved through a 1:1 assessment utilizing the Diagnostic Indicators of Beginning Early Literacy (DIBELS), the Phonological Awareness Test (PAT), and the Gray Oral Reading Test. Each child’s progress was measured in specific areas such as: Letter naming, Phoneme segmentation, Nonsense word reading (Word Attack), Oral Reading Fluency, Story Retell, and Comprehension.

In addition, a review of past and current yearly Woodcock Johnson assessment (WJ-IV) data will provide an *overtime measure* that will compare groups from past performance to current performance. Test data including percentiles in Word Attack, Spelling of Sounds, Letter-Word Naming, and Comprehension will be analyzed to determine if the acquisition of skills by this current cohort of students utilizing PALS is faster as compared to students in cohorts of the past three years who have not utilized PALS. The WJ-IV and DIBELS measures will not be included in this dissertation summary because the final assessments will not administered until the last quarter of the school year.

Data Analysis Techniques

The mixed-methods research design included both quantitative and qualitative data collection methods to analyze the value, impact, and significance of implementing Peer-Assisted Literacy Strategies in our Language Comprehensive classes at the Key School. Numeric and contextual data were useful in establishing a complete picture in order to understand whether this proposed change was actually an improvement in fostering the students' independent application in demonstrating reading skills and in using these skills confidently when coaching and teaching a peer. The careful measurement and statistical tools of good quantitative studies were helpful assets. When they are combined in a mixed-methods research design with the up-close, deep, credible understanding of a complex real-world context that characterizes good qualitative studies, we have a very powerful mix (Miles, Huberman, & Saldana, 2014).

Quantitative. We cannot improve at scale what we cannot measure (Bryk, Gomez, Grunow, & LeMahieu, 2015). Quantitative research components are conclusive in purpose, help to quantify the problem, and seek to understand the impact of the change for improvement being implemented in this research disquisition proposal. The overall outcome or AIM goal of this study was to increase the level of independence in which students demonstrate their reading skills and learning-to-learn skills in independent, unstructured, and new settings beyond the closely monitored lessons of the 3:1 student-teacher ratio of the Language Comprehensive class. Measureable data was collected to evaluate if greater independence was achieved following 12 weeks of PALS planning, start up, and implementation. A pre-treatment and post-treatment value was calculated based on the scoring of each student's Level of Independence rubric. Growth between the scores was compared and the mean of both scores was analyzed. A paired samples t-test was run on the resulting averages to determine if the growth was statistically significant and not due to chance. Statistical Package for the Social Sciences (SPSS) software was used for statistical analysis.

An additional quantitative component was used to formulate whether an accompanying change in self-efficacy occurred pre- and post- intervention regarding each student's belief in their ability to learn new reading skills and to use those skills without teacher support. Self-efficacy theory is concerned with one's level of confidence to perform tasks successfully and the factors that influence the development or loss of that confidence. There are compelling reasons why self-efficacy should be defined and measured in specific rather than global terms (Bandura, 1986). Bandura argued that specific measures of self-efficacy are better predictors of levels of subsequent

performance than are global measures of self-efficacy. Each student took a simple self-efficacy survey that asked questions regarding their beliefs in what specific reading sub skills they could accomplish. Pre- and post- scores were calculated and the means were compared. A paired samples t-test was once again utilized to determine if the results were due to chance.

Balancing measures were in place to ensure that essential reading sub skills were being learned and not negatively impacted due to the introduction of PALS. As mentioned previously the standardized pre-treatment and post-treatment measures will include the Phonological Awareness Test (PAT) and The Gray Oral Reading Test (GORT-V). Pre and post mean scores were compared and an additional Paired Samples t-Tests was run to determine if the growth value was statistically significant. The Phonological Awareness Test assessed the following reading skills: Rhyming, Segmentation, Isolation, Deletion, Substitution of Sounds, Blending Syllables and Phonemes, Graphemes (Phonological Awareness Composite Score) and Decoding. The GORT-V measured Accuracy, Fluency, and Comprehension.

This pretest / posttest design was a very common way to analyze the growth that served as evidence to support that the change intervention was an improvement. The paired samples t-test (or correlated samples) assessed whether the mean change differs significantly from 0. This is a form of the t-test that is appropriate when scores come from a repeated measures study or pretest / posttest design where scores are paired in some manner. Finding the mean score of the pretest and the mean score of the posttest required only one paired samples analysis (Warner, 2008) per measure.

Qualitative. The qualitative data collection methods used included focus groups, surveys, and student observations. These qualitative components were helpful in clarifying the specifics of the improvement outcomes and exploring more deeply the nuances of employing Peer-Assisted Literacy Strategies. Data was gained that would not otherwise be available with solely quantitative research.

The primary research gained through initial focus groups and parent surveys helped in part to inform the final construction of the Level of Independence rubric that was used to assess the students' progress in becoming more independent. In addition, the focus groups and parent surveys allowed this researcher to clarify for the teachers and the students the important learning targets for instruction. The descriptions and observations that were recorded served to provide deeper insight into understanding student behaviors and the link to their gains in autonomy, confidence, and peer relatedness that occurred once students learned, reviewed, practiced, and independently implemented PALS.

Teacher focus groups were centered on specific open-ended questions that had 2 sections: Part I: What are the observable indicators that you hope to see (pre) and saw (post) in your students that tell you: a) they have learned the skills you are teaching, b) they know when and how to use the skills, c) and they are confident in demonstrating their skills and employing learning strategies without prompting? Part II: Describe the current status of your students in regard to their Level of Independence during the pre-PALS first weeks of school, mid-PALS, and post-PALS. Through deductive coding, pre-codes were established that fall under the following 3 types of evidence for achieving higher Levels of Independence: 1) Reading Strategies, 2) Social/Emotional Tools, and 3) Work Habits/Learning to Learn skills. Specific information was organized in a matrix

format with rows and columns to clearly display the indicators of independent learning. Comments were entered pre, mid, and post intervention, they were organized by the behavioral domains mentioned above and used on the LOI rubric, and then were assigned a point value of I – IV indicating where that specific behavior would fall on the rubric.

Parent surveys served two purposes. First, they helped educate our parents about the importance of helping their child achieve independence in learning and how this connects to a successful transition from the Key School and success in life. Secondly, they served as a way to assess if observable differences were occurring at home (away from school) when our students were completing their home learning assignments. Prior to a child's enrollment in the Key School, our Director of Admissions frequently hears that parents are doing their children's homework for them because they are struggling or because they perceive that their child is not capable of doing it on their own. Patterns of learned helplessness are often set up which compounds the impact of dyslexia on student learning. The open-ended survey response statement along with other parent communication helped our team get to the root of some of the home dynamics that may be contributing to enabling and non-independent behaviors occurring at home.

Two forms of documentation were utilized to capture and reinforce important student behaviors. Prior research has shown that implementing PALS with a high degree of integrity was essential to the success of this improvement intervention.

Teachers completed an observation checklist as a process measure to record if each student was correctly employing the specific components of PALS. This observation information served to document which students were most effectively implementing PALS and which students needed additional PALS instruction in order to

be successful. Secondly, teachers utilized student scorecards to give students immediate daily feedback. Student coaches (the student who was not reading at the time) marked the points that were earned by the reader. Additional points were awarded by teachers and other observers as a means of reinforcing positive social interactions, excellence in following directions, encouragement to use multisensory strategies, and improvement in the implementation of PALS strategies. This observation documentation served as a motivational tool that also provided specific constructive feedback. Both the scorecards and the observation checklists served as tools to focus our feedback on PALS teams and individuals during our weekly PALS celebrations. Students with dyslexia need clear, personalized, specific feedback in order to grow from their learning experiences.

The use of focus groups when exploring complex behaviors such as demonstrating independence in learning was very beneficial in several ways. A great deal of open-ended information was revealed due to the “group effect” when participants queried each other and explained themselves to each other. Ideas mentioned by one participant seemed to trigger additional important information from another participant. Comments were not limited to specific factual responses as they might be in another data collection format. As the focus group facilitator, I had the opportunity to ask the participants for comparisons among their experiences and views rather than relying on aggregating individually collected data (Morgan & Krueger, 1993). Also, by utilizing the open-ended comments through the teacher focus groups, a clarified picture of student independent learning behaviors was developed.

Surveys have proved to be reliable pre and post data-gathering tools for the collection of timely information in a very effective manner. The self-administered

questionnaire eliminates interviewer bias and they are efficient in terms of cost, time, administration, and collection of information (Morgan, 1996).

Lastly, the matrix was the chosen format for the collection and arrangement of focus group data due to the easy viewing in one place, it permitted detailed analysis, and it set the stage for later cross-case analysis with other comparable cases or sites (Miles et al., 2014). See Appendix E for the Focus Group Comments Matrix.

The Improvement Process

The First 90-Day Cycle: February – May 2016

Scan. Prior to beginning my research intervention at the Key School, it was important to establish a Design Team for this improvement initiative; this group served as the base for our networked improvement community (NIC). NIC's have been shown to accelerate broad-based improvements and challenge the long-standing norm of autonomy in practice that educators have traditionally worked in isolation. The concept of an NIC vitalizes a core belief that we can accomplish more together than even the best of us can accomplish alone (Bryk et al., 2015). In addition, improvement efforts need the *good will and engagement* of the people whose work is the subject of change (Langley et al., 2009).

In January of 2016 the following members were invited to join our Design Team and to function as a networked improvement community: A First grade Key teacher, three second grade Key teachers, two third grade Key teachers, a former public school teacher and current CDS Lower School teacher, our Key Director of Teacher Training and Curriculum, our KS Assistant Principal, and me. After establishing the purpose for our team, this team's first task was to help me analyze my problem of practice and develop an Ishikawa fishbone model for our problem analysis. We studied the cause and

effect of why our students were not moving towards independence as quickly as we had hoped. As mentioned previously, this allowed us to target our primary driver of teacher professional development. This driver was chosen because it would be an easy one to manipulate and within the Key School we have a culture of continued growth to the teacher knowledge base. We predicted that teaching the teachers a new series of strategies to teach their students when orally reading with a peer, would lead our students to greater independence in the use of their reading skills and *learning to learn skills*. My literature review led me to explore the benefits of a highly regarded Peer Assisted Literacy Strategy program (PALS) that was developed at Vanderbilt University over twenty-five years ago.

In February our Design Team met to learn more about Peer Assisted Literacy Strategies (PALS) and to explore the Vanderbilt prototype for First Grade PALS. We discussed a plan to implement a four to six week PDSA cycle of piloting PALS with our first grade students. This served as our initial tool to ‘learn while doing’ and to tweak this model if needed, prior to initiating the second grade implementation of PALS in the fall of 2016. In training our six first graders, we noted that this plan would also be training these students to be our PALS leaders when they entered second grade.

Within the scope of our overall INDEPENDENT initiative and improvement science questions, each PDSA cycle will seek to address smaller fundamental questions that will inform our overall development of improvement. Our first PDSA cycle questions were designed to give us base information and new knowledge prior to implementing PALS with second grade.

Question One: What are we trying to accomplish?

- We hoped to determine if PALS was a viable independent learning tool for our students who have moderate to very deep layers of dyslexia. We asked ourselves: Would our first grade students be able to demonstrate the basic first grade PALS strategies and implement them during monitored partner reading time somewhat independently?

Question Two: How will we know that a change is an improvement?

- We predicted that our students would be excited about learning these strategies and would show outward excitement and interest and ability in working with their friends somewhat independently. Our indicators would be: interest, excitement, success in verbalizing how to do each strategy, and success in demonstrating the strategies with a peer.

Question Three: What changes can we make that will result in an improvement?

- We quickly learned that our students would need a far greater degree of 1:1 and very small group explicit instruction in learning each strategy. As we moved forward we learned that we needed to change the original Vanderbilt model and intentionally provide additional opportunities for 1:1 and small group instruction within the highly structured Language Comprehension classes at the Key School prior to turning the students loose in PALS sessions for second grade.

During this exploratory first cycle we kept our questions in the forefront. We moved through the four steps of the PDSA cycle.

Plan. We planned for our initial PALS professional development, defined our success metrics, and mapped out the PALS instructional and implementation days on the calendar. We agreed to touch base daily and weekly to share data to guide our learning.

I planned the majority of the strategy presentations for the students, teachers agreed to model with me, and we mapped out the day-to-day activities on our calendars.

Do. We decided that some of the professional development could happen through observation by the teachers as I introduced the concept of PALS and the components to the students. We kicked off with an introductory large group session with all six first graders; the focus was to understand what the letters P-A-L-S stood for. We followed up with several review sessions in which the students would grab the appropriate letter taped to the wall or board while I described to corresponding term. For example: who can find that letter that represents the word meaning a student in your grade. Yes, you grabbed the “P” and what does P stand for? Yes, you are correct – the P stands for the word Peer. We made this conceptual phase as multisensory as possible. For six weeks we systematically taught the purpose and techniques for: 1) Understanding your PALS resources 2) Naming your PALS team and the importance of getting your PALS folder and moving quietly to your PALS station, 3) The Roles of the READER and the COACH, 4) Expectations for kind social interactions and positive coaching, 5) Planning for the allocation of PALS points by the teachers (Getting started quickly, Implementing procedures correctly, Positive & supportive comments to peers, Completion of activities, and Putting Materials Away and 6) Teaching PALS strategies: Check IT, Pretend Read (preread), Read Aloud, and Retell. We announced PALS points each week and had all teams take a bow. Daily and weekly we recognized areas that needed to be refined or tweaked and we acted on these tweaks as needed. As we met informally and formally on a daily and weekly basis, we kept improvement in mind. We were learning the PDSA cycle process and at times it was a little messy.

Study. We referred to our notes and observations throughout this first cycle; as mentioned above we tweaked and refined our processes as needed. We saw the indicators of success that we had hoped to see. Students were highly motivated by the points, they did a beautiful job of gathering their PALS materials and moving to their PALS stations fairly quickly and quietly, and often asked, “Is today a PALS day?” During first grade PALS we were not doing this daily, but usually 2-3 times a week. We saw early indicators of students showing independence, although all three of us monitored and guided the students daily during the PALS reading sessions. We viewed the implementation of First Grade PALS as a success and we considered this to be an improvement based on our questions.

Act. We closed our initial improvement cycle by adjusting our goals for the upcoming second grade model to include additional strategies as included in the Vanderbilt model and a plan to implement what we learned from First Grade PALS into our beginning prototype for second grade PALS. Our plan for our future cycles would center on asking the improvement questions based on the new strategies being taught and adding more efficient measurement tools. In closing out the first 90 Day Cycle, the new knowledge we acquired is included in the summarize section.

Summarize. Our second grade teachers’ notes, my weekly teacher notes and observations, and the student point sheets indicated that there were many positive aspects of First Grade PALS. The strategies themselves, the clear expectations, the motivating point system, the outward positive student body language, excitement shown through student comments, and the opportunity to work with a peer while reading were all *keepers* in this initial test of change. The *suggestions for change* included the addition of

an additional multisensory component to the Check IT Strategy, a plan to offer greater consistency in allocating points, the development of a more structured observation checklist as a process measure to record student success in implementing partner reading and PALS strategies, a plan to further refine the Level of Independence rubric, a plan to move forward with adding on the Second Grade PALS strategies, and the development of a timeline to initiate Second Grade Pals early in the next school year.

The Second 90-Day Cycle: August – December 2016

Scan. In the fall of the new school year our Design Team reviewed the summary we generated from our work in the spring. Our initial PDSA cycle questions and answers gave us base information prior to implementing PALS with second grade. We agreed that we had seen evidence that indicated that First Grade PALS was a viable learning tool that would move our students towards greater independence in reading. The first graders were able to learn and implement the strategies and they voiced that they enjoyed their PALS time. We revisited the indicators that we saw that led us to deduce that the implementation of PALS was a change that would lead to improvement.

Keeping within the scope of the title of the research initiative of INDEPENDENT: Increasing Reading Independence for Students with Dyslexia, we were ready to move on to the implementation of Second Grade PALS. We began with the initial Vanderbilt prototype for Second grade PALS and redesigned this by incorporating what we had learned from First Grade pals.

Focus. As quoted in the text, *Learning to Improve: How America's Schools Can Get Better at Getting Better*, "The history of American Education includes a graveyard of good ideas condemned by pressure for fast results." A fundamental shift is needed in

how we think and act by moving away from simply demanding fast results to *quickly learning how to learn well*. The improvement process used in this research study employed the improvement science model of deploying rapid tests of change to guide the development, revision, and continued fine-tuning of new tools, processes, work roles, and relationships (Bryk et al., 2015). The implementation of Second Grade PALS included four additional PDSA cycles designed to help us learn well, gain new knowledge, and practice implementing the new knowledge that allows us to create change that truly is an improvement for our unique population of students.

During the second week of school our second grade teachers administered the standardized Phonological Awareness Test (PAT), our Director of Admission and our Director of Teacher Training administered the Gray Oral Reading Test (GORT), and I administered the Diagnostic Indicators of Beginning Early Literacy (DIBELS) for second graders. In addition to serving as a baseline for these balancing measures, this information allowed us to gather data to support the selection of reading materials, to support our teachers' development of their students' yearly roadmap for instruction, and to provide a starting point for selecting the first set of PALS partners.

PDSA cycle I: Getting started and introducing the check IT strategy.

In addition to gathering the assessment baseline data mentioned above, our first cycle of Second Grade PALS began with professional development in getting started with PALS, establishing the roles of coach and reader for the students, and learning the first strategy: Check It. We added an Orton-Gillingham-based twist to Check It due to what

we learned from First Grade PALS. We planned a general timeline for introducing PALS and developed an initial plan to do PALS three days per week for twelve weeks.

Question One: What are we trying to accomplish?

- Establish the second grades students' buy-in for learning PALS and test the effectiveness of the new multisensory component that was added to the Check IT strategy. Will the Check IT be an effective independent learning tool for the Reader and the Coach?

Question Two: How will we know that a change is an improvement?

- We predicted that our students would verbalize excitement for learning PALS or continuing with PALS (last year's first graders) and that the new multisensory component of Check IT will make the students more independent in correcting their reading errors and less dependent on asking the teacher for help. Indicators of success will include: Seeing the students (acting as coaches) verbalize "Check IT" when the teacher modeling or a peer makes a reading error without prompting and seeing the reader respond by trying to tap out the word if phonetically decodable or recognizing that the word is a sight word 90% of the time. In addition, indicators of "buy-in" will include hearing positive statements about PALS and seeing many "I think so" or "Yes" smiley faces selected on the PALS questions on the Student Self-Efficacy Survey. Refer to questions six and seven on the survey in Appendix C.

Question Three: What changes can we make that will result in an improvement?

- 1:1 and very small group explicit instruction in learning each strategy is necessary and should continue as each new component is added. Employing the principles

of the Orton-Gillingham philosophy such as adding multisensory components to PALS instruction will be an ongoing change needed as well.

PDSA cycle I – plan. Pretest scores and teacher input were utilized to establish the first set of PALS partners to develop the Learning Roadmap for each student. Planning initially started with a 3-days a week model for PALS. The professional development format of watching me model was going to continue, PALS resources were organized, a plan was developed for turning over the allocation of points to PALS Coaches and Readers (the students), and reading materials were ordered for the onset of actual partner PALS.

PDSA cycle I – do. The concept of PALS was introduced by me and reviewed in two morning meeting sessions. The roles of the Reader and Coach, the format for partner reading, and the new Check IT strategy were taught. Via 1:1 and small groups (3:1) the teachers modeled and allowed the students to practice being partners in Language Comprehension class. Check IT was explicitly reviewed and practiced in Language Comprehensive (LC) class as well. PALS materials were shown to the students and partners were announced. Instruction in the allocation of points including establishing how many points the students should color on the score sheets for 1) Set Up - 1, 2) 1 point for each sentence read correctly or reread correctly via the Check IT strategy, 3) 1 point for positive PALS comments, and 4) 1 point for putting materials away at the end of each PALS session.

PDSA cycle I – study. We reviewed our daily observations of the students and notes from weekly check in meetings. Although we had hoped to turn the PALS partners free for the next cycle, the teachers recognized from their in-class observations that PALS

partners would need to be guided by an adult during the first few weeks of partner work. We made a plan to assign PALS groups to the teachers or me for the next cycle. We recognized that we needed to tweak the observation checklist by incorporating the Level of Independence scoring scale of I – IV. This would be the same scale as the one used on the Level of Independence rubric: I = dependent and not learned yet, II = emerging independence, III = developing competency and usually demonstrating the skill or strategy independently, and IV = proficient and showing leadership in helping others with the skill or strategy. In addition, we planned to move from a 3-days a week plan for PALS to a 5-days a week plan. We know that consistency is an important factor for our dyslexic population in learning and mastering skills more quickly and recognized that a more intense period of PALS instruction would be beneficial. Lastly, the Pre-Student Self-Efficacy surveys showed that our second graders were thinking positively that they could learn PALS and that they could be successful in earning lots of points. This told us that our introduction and model for introducing components of PALS appeared to be successful.

PDSA cycle I – act. We integrated what we learned from cycle one into our plan for the next PDSA cycle. We created an updated observation checklist to serve as an efficient process measure and a new schedule to do PALS five days per week. It was agreed that these checklists should serve following another Orton-Gillingham (O-G) principle of being diagnostic and prescriptive in our teaching. If the checklists indicated a level I or II (not demonstrating competency) in the learned PALS skills, teachers would plan to allocate class time the next day to review and reinforce the skill. We recognized

that the success of partner PALS time depended on at least one of the partners being competent in the skills and strategies taught thus far.

Following PDSA cycle I, we accomplished what we predicted we would. The model of bringing in the O-G principles into the instruction of PALS was very beneficial. The students were showing that they were “buying into” the value of PALS and were developing competence in using the Check IT strategy.

PDSA cycle II: Getting started with partners, employing the Check IT strategy, and learning the Retell strategy.

Question One: What are we trying to accomplish?

- The goal of this cycle is to familiarize the students with the PALS procedures with their partner with some teacher guidance, but outside of the structure of the Language Comprehensive class. During the second week of this cycle we plan to implement the use of the observation checklist as a diagnostic/prescriptive tool for determining the amount of review and reinforcement will be needed for each student in the LC classroom.

Question Two: How will we know that a change is an improvement?

- We predicted that our students were prepared to demonstrate the ability to set up for PALS, begin their PALS reading with the stronger reader reading first (Reader #1 and Reader #2 have been assigned), and the coach calling Check It as needed. Indicators of success will be noted with a level of I-IV on the checklist (II or greater is an indicator that the students are emerging; III will indicate they are showing competency in their use of the strategies.)

- We further predicted that the use of the Levels (#'s I – IV) would aid in fostering reliability with the scoring. An indicator of the success of this iteration to the observation checklists will be that common ground across inter-rater reliability will be seen. Teachers were able to glance at the checklists and determine what students needed further review or instruction in specific skills.

Question Three: What changes can we make that will result in an improvement?

- During the second week of this cycle and for many subsequent weeks, I was not always available to serve as the third teacher to coach one PALS group each class period. Each language period has six students (2 LC classes) who make up three PALS teams. We recognized that there was a need to begin to move the students away from expecting a teacher to be available to monitor and guide them in a 2:1 setting each day. The change that will result in the next step of improvement towards independence will be to establish a rotation cycle for each class period that will place 2 of the 3 PALS groups within a classroom for teacher guidance as needed and have the third group work completely independently at a PALS station in the hallway.

PDSA cycle II – Plan. We set our goals and questions as mentioned above. We established the location for each PALS group and the teacher who would guide them. We solidified the times that teachers might offer bonus points on the scorecard for positive social interactions. Professional development took the form of me modeling the Retell strategy and then the plan was set for the teachers to explicitly teach this during their LC class time.

PDSA cycle II – Do. The first week of actual partner PALS went fairly smoothly with one teacher or principal available to monitor and guide the beginning PALS session each day for each team. During the second week of this cycle, one PALS group each class period each day rotated into the hall for an experience with an independent PALS session. Following the PALS session, teachers checked in with the independent group, looked over their scorecard for a reasonable amount of points awarded, and determined if the PALS session had been completed. Diagnostic/prescriptive review and reinforcement took place during LC class as needed; the Retell strategy was also modeled and practiced during LC class.

PDSA cycle II – Study. We compared our experiences with the PALS groups and reviewed the Observation Checklists. We discussed the need to ask the students to change the color of the highlighter each day that they used to color in their PALS points. Occasionally one of the independent groups would have an unusually high number of points and the changing of the colors allowed us to track this daily and look for reasonable comparisons of daily points. This also indicated that we needed to clarify the points allowed per PALS component with the students. In addition, we noted that we needed to begin ‘PALS points’ celebrations including small rewards, to keep the motivation strong.

PDSA cycle II – Act. We acted on the above iterations, updated the Design Team on the first two weeks of Pals Partners during a team meeting, and held our first PALS celebration on the last day of this cycle. The kids enthusiastically cheered for one another and were very proud of their points earned. This solidified the partnerships even further.

PDSA cycle III. Focus on independent use of the Check It and Retell strategies and reinforce tracking while reading; LC classes will begin instruction in Paragraph Shrinking.

Question One: What are we trying to accomplish?

- Our goal is to increase the correct and independent application of the Check IT and Retell strategies; we will help our students see the connection between regular tracking during reading sessions and the improvement in coaching their partner and in their own reading accuracy.

Question Two: How will we know that a change is an improvement?

- We predicted that our students would improve their proficiency and confidence with the Check IT and Retell strategies during PALS sessions as we clarify explicitly what we are watching for as they see us with our clipboards; students continued to receive additional practice during LC class. Indicators of success were documented with increased marks of III on the teacher observation checklists. (We expected to see greater competence with these strategies at this time.) We also hoped to see a more automatic recognition that an error had been made and automatic coaching (the coach automatically asks the appropriate strategy questions).

Question Three: What changes can we make that will result in an improvement?

- Employing the O-G principle of teaching from simple to complex, will enhance the instruction of Paragraph Shrinking. Summarizing is a very complex skill. We will utilize three steps in teaching this strategy and give each student 10 cards to

help them manipulate the cards as they try to shrink their summary into ten words or less.

PDSA cycle III – Plan. We reflected on the gains in fluency we have seen already with our PALS intervention that we discussed this during our Design Team meeting. We discussed our current documentation of our observations on the checklists. Our goal for this cycle will be to be sure that all students become independent with the use of Check IT and Retell and our success metrics will be determined by the checklist data which documents the teachers' observations.

PDSA cycle III – Do. We clearly defined and coached the students in refining their Check IT strategy and their Retell strategy to move towards the goal of increasing their independent application of these skills. Students continued the rotation cycle of two days of guided PALS and one day of independent PALS. Professional development was continued for the teachers as I modeled the Paragraph Shrinking Strategy. We continued to hold PALS celebrations each week and reinforce positive coaching amongst the peers.

PDSA cycle III – Study. We noted the increase in the students' reading accuracy and their visible progress in reading fluency. We reviewed our observation checklists and looked at the amount of reading material the students have covered. We were thrilled with the material the students have read independently with minimal guidance from the teachers for error correction. At the midway point in the PALS intervention, we had planned to give the students new PALS partners. We followed the Vanderbilt model of placing the highest student in the top 50% with the highest student in the bottom 50%; this set up PALS teams with one stronger reader and one slightly weaker reader. We discussed the benefits of trying new teams with more compatible reading levels. We

studied our students' data and teacher recommendations and decided that this will be the plan for creating our next round of PALS teams.

We have accomplished our goal of increasing student competency with the Check IT and Retell strategies. We agreed to continue our diagnostic/prescriptive approach for adjusting levels of review and reinforcement as needed to ensure that all students grow towards independent use of their strategies. The second grade teachers and I discussed a new plan for the weekly PALS celebrations; we shifted the focus away from the number of points (this will still be recognized) to awards for mastery of strategies. Categories for recognition will include: Following Directions, Check IT, Retell, Coach Award, and Most Improved. We can customize Most Improved to focus in on any number of improvements including progress shown in tracking, independence, etc. We plan to add additional award categories as additional strategies are learned. Before this cycle ended, we experimented with this new format for PALS celebrations. We told the students about this idea early in the week, and it seemed to generate renewed enthusiasm on demonstrating their skills correctly and independently and we heard frequently, "We can't wait until our PALS celebration!"

An area for continued improvement will be utilizing the O-G principles as we teach PALS strategies; teaching from simple to complex is our immediate O-G principle to target. We are beginning to see the students take hold of the Paragraph Shrinking strategy in LC classes through the simple to complex technique. We recommend one more week of LC instruction in Paragraph Shrinking and then bringing this strategy into PALS sessions by the second week of cycle IV.

PDSA cycle III – Act. During the second week of this cycle we had already implemented the change for awards during our PALS celebrations. Students were individually recognized for the one or more of the areas in which they were showing competency or solid improvement. Laminated awards were made and taped on the students' lockers. Not every child received an award, but all children showed support for their peers that did receive awards. Along with the awards, the student received small incentives such as Halloween stickers. All other iterations mentioned above have been incorporated into our plans for the next cycle including the creation of new PALS teams. On the last day of this cycle the students were told their new partners for the upcoming cycles. As we observed the hugs and screams of excitement, we suspected that they knew they now had more compatible reading partners and were excited about working with a different friend of the same gender.

PDSA cycle IV: Solidify Paragraph Shrinking and then bring this strategy into PALS sessions; drop Retell temporarily; support new PALS teams

Question One: What are we trying to accomplish?

- Our goal is to set the students up for success and confidence when adding the Paragraph Shrinking Strategy to their PALS partner reading sessions.

Question Two: How will we know that a change is an improvement?

- We predicted that once we observe consistent and effective use of this strategy with practice partners and in practice sessions with the teacher in LC class, this will carry over into the independent application during the PALS partner reading time. Indicators of effective use will include: 1) the coach asking all 3 PS

questions following the reader completing the assigned reading portion and, 2) the reader answering all three questions and effectively using their 10 cards as a tool to help them limit their summary statement to 10 words or less. Teacher/principal observations checklists will serve as our data collection tool. We hope to see many II's and III's.

Question Three: What changes can we make that will result in an improvement?

- We plan to drop the Retell strategy for the short term when we first incorporate Paragraph Shrinking into our PALS partner reading sessions. We don't want to tax our students limited working memory, and we recognizing that Paragraph Shrinking is a complex and time-consuming strategy. We want to be sure all students are set up to experience success and completion of their PALS partner activities.

PDSA cycle IV – Plan. We focus on our goal for a successful entry of Paragraph Shrinking (PS) by planning for one week of additional LC work. PS will be expected during the second week of this cycle. The instruction will begin with practice in making main idea statements while whole groups of students would view pictures together. This will be an added multisensory component that seemed essential for our students. We clarify the expectations for demonstrating Paragraph Shrinking. We ordered new reading materials that have colorful pictures, diverse characters (children of color, children from a variety of ethnic backgrounds, one character in a wheelchair, etc.) and have short, engaging stories. We recognized that when implementing story summarization (Paragraph Shrinking), it is the time to support our students in becoming more descriptive with the aid of color, pictures, and interesting characters and settings. We prepare the

PALS folders for the new PALS teams and allow student choice in selecting their new books. We plan for professional development and instruction for the final PALS strategy – Prediction Relay. Prediction Relay will be introduced in big group, modeled and practiced in LC class, and introduced in PALS time during the last PDSA cycle.

PDSA cycle IV – Do. LC teachers spend the first week of this cycle fine-tuning the Paragraph Shrinking in their classes. We then implement our plan of adding the Paragraph Shrinking strategy and dropping the Retell strategy during the second week of this cycle as students begin work with their new PALS partners. I introduce the concept of Prediction Relay in big group, and explicit instruction is planned into the LC lessons via simple to complex.

PDSA cycle IV – Study. We reflect on our goals for this cycle, we review the checklist data, and compare notes during our check in time. We are pleased to see that the students' first week of Paragraph Shrinking during PALS time was very successful. Checklists indicated that most students received a score of 2.5 (and some above) indicating that the O-G instruction of this newest strategy was effective. We will plan to continue to employ the changes introduced in previous weeks; these have shown to be effective, especially the O-G teaching from simple to complex for new information (strategies), diagnostic/prescriptive use of the observation checklists, embedding multisensory teaching and techniques into the PALS strategies, review and reinforcement of learned skills, and direct explicit instruction in groups and 1:1.

We reviewed our overall aim of increasing student independence and recognize that we would like to push this up a notch. Currently, only one group is experiencing full PALS independence each day while 2 of the groups are assigned to a teacher for

guidance. To increase the opportunity for independence, we decide to assign PALS teams to specific PALS stations for the last two weeks and plan to have the teachers and me rotate with clipboards from station to station. We strive to offer no verbal guidance to PALS groups unless the group asks for help. In addition, we discuss the value of bringing in additional observers to rate our students using the very same checklist that the teachers and I are using.

PDSA cycle IV – Act. We act on the plan for implementation of full independent PALS sessions for the last cycle.

PDSA cycle V: Bring back Retell with all other strategies, add Prediction Relay, and establish full and complete independent PALS sessions for all. Teachers will assume an “observation only” role.

Question One: What are we trying to accomplish?

- Our main goal for this cycle is to have our students complete full sessions of PALS (all strategies) with a high degree of success and independence.

Question Two: How will we know that a change is an improvement?

- We predicted that once we observe consistent and effective use of the Prediction Relay strategy with practice partners and in practice sessions with the teacher in LC class, this will carry over into the independent application during the PALS partner reading time. We also predicted that with all the prior layers of explicit instruction, scaffolding, review and reinforcement and practice, our students would be able to successfully implement full PALS sessions independently. Indicators of successful implementation will include: 1) Timely set up, 2)

Completion of all session components, 3) hearing students verbalize encouragement and keeping one another on track, 4) scores of 2.5 and above on teacher and other staff observation checklists, and outward pride and enthusiasm shown during the final PALS celebration.

Question Three: What changes can we make that will result in an improvement?

- We plan to offer our students additional opportunities throughout the school day to learn from one another and coach one another. Now that we have established appropriate coaching and positive social support skills, we hope that our students will continue to gain independence from increased opportunities for gradual release of responsibility.

PDSA cycle V – Plan. Based on our new learning from cycle IV, we plan for the students to be fully independent with their PALS partners and teachers shift roles to become observers only. We plan for a mini training for our additional observers; this training will include the following Key School staff: Administrative Assistant, Director of Admission, and Director of Teacher Training and Curriculum. Teachers plan for one week of explicit instruction in Prediction Relay during LC class and then tell the students that the Retell strategy will be brought back to support Paragraph shrinking during PALS reading time. Teachers and I planned for instructing the students in how to rotate the implementation of all their strategies between readers during Pals times. We then prepared them for the final week of PALS that will incorporate ALL the PALS strategies into each session.

In addition to our classroom planning, we looked ahead for an opportunity for the students to “teach” their parents their PALS strategies. We decided that at the close of

the last PALS PDSA cycle, we would send home some “Thankful for PALS” home learning during the week of Thanksgiving break. See Appendix F for Thankful for Our Pals home learning documentation sheet. We planned for the resources that would go home at the end of the cycle, reading material was selected, and we decided upon the last Friday to be our culminating PALS celebration. Parents were invited to come in for a brief meeting with me to discuss the PALS home learning packet, to update on the original PALS informational brochure they received on parents’ night, and then to be present for our final PALS celebration program. We also included the second parent survey in the packet so they could once again (they did this at the beginning of the year) share their observations of Levels of Independence at home. See Appendix G for the PALS Parental Brochure.

PDSA cycle IV – Do. The teachers taught, modeled, and led the students to practice the Prediction Relay strategy in LC class. This was introduced into PALS session during the final week of this PALS study. In big group I presented a plan to the students regarding rotating the implementation of all strategies between reader and coach. This seemed confusing to them, but they agreed to give it a try. Independent PALS stations were assigned and teachers worked very hard at not guiding the students as they rotated from one group to another. During the mini-training for our additional observers, I explained the scale, the checklist, and what to look for as each student implemented the PALS strategies.

PDSA cycle IV – Study. We reviewed observation checklists, compared notes in our daily and weekly check-ins, and listened to student feedback. After the first few days of trying to rotate the strategies between students during PALS time, the students came to

me and said this was too confusing. They asked if each reader (#1 and #2) could do all the strategies each time they finished their portion of the reading. I was thrilled to see this self-advocacy and viewed this as strong evidence that they were fully invested in their PALS sessions. We implemented this iteration to the design the very next day. The students' plan went much better.

During our check in meeting at the end of week one of this cycle, we recognized that we were lacking an opportunity to give the students specific feedback during PALS sessions because we had agreed to try to be silent observers. We decided that for the last week of PALS, the teachers and I would meet for one minute with each PALS team at the end of the daily class PALS session and ask for their reflection of the session and then offer our feedback based on the notes we jotted down on the checklists. We gave them a positive point to continue doing and a minor area for improvement for the next day. This was well received by the students and we saw them implement immediate tweaks in their performance on the following days. Overall, our data indicated that our students had made great gains in their independence levels across all classes, but particularly during their PALS reading sessions. We saw strong enthusiasm for reading, continued gains in fluency, confidence, and a strong bond develop with all 12 of our second grade students, possibly due to the habits of making positive comments to one another and the daily opportunities to support one another.

We felt that our process measure of using the checklists was very helpful. This helped us greatly in offering specific feedback to PALS teams and we watched them get better at coaching one another after listening to our feedback.

We were anxious to revisit our outcome measures to gather specific data on student acquisition of independent learning skills. Our checklists, focus group meetings with the Design Team, student outward behaviors, and parent comments were showing strong indicators that the final cycle was a success.

After seeing these outward signs of success, we decided to begin the post assessment measures commencing on the first Tuesday upon returning from break. We were anxious to see the following outcome measures: parent surveys, closing focus group discussion comments (to be recorded and transcribed), the 2nd Student Self-Efficacy Scale Survey, and the completion of the 2nd LOI rubric by the teachers. The process measure (checklists) would be further analyzed for patterns, and the balancing measures (retesting on the Gray Oral Reading Test – Form B, The Phonological Awareness Test, and DIBELS) would be re-administered to look for any unexpected outcomes/regressions in the learning process due to the implementation of the PALS intervention. See Table 1.

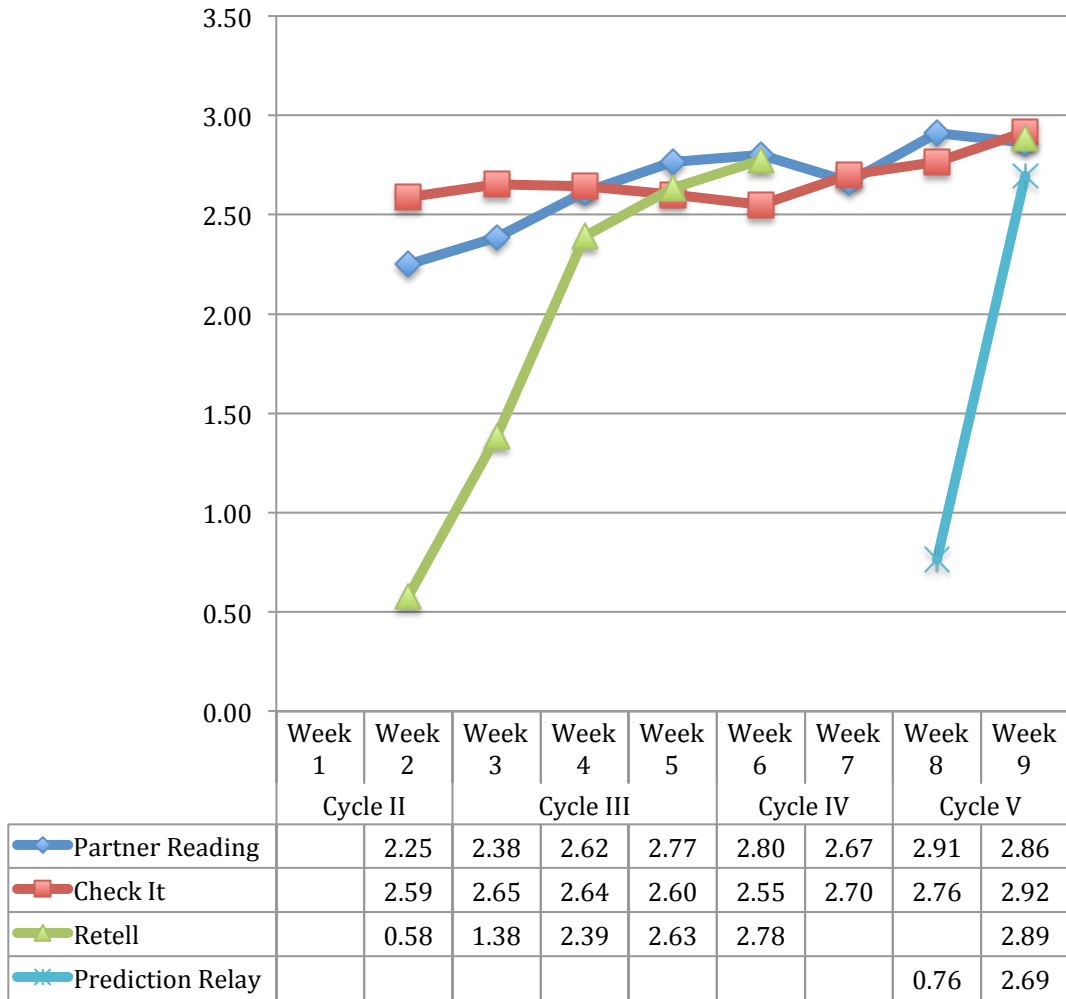
PDSA cycle IV – Act. As mentioned above, we acted immediately upon the students' suggestions for eliminating the strategy rotations during this cycle. We also acted immediately on the teachers' suggestion that we needed to give the students feedback on PALS sessions each day. The benefits of these quick iterations were shown in improved student performance the following day. In addition, our Design Team quickly developed a plan for administering the post assessments. The final Design Team meeting was scheduled for December 5th and we invited our Head of School, our Assistant Head, and our CDS Director of Admission to attend.

Summarize. Based on all measures used to document growth and improvement throughout these 4 PDSA cycles with our second grade students, including both

qualitative and quantitative data, Second Grade PALS has proven to be very successful in improving the level of independence for our students. Each PDSA cycle within this second 90-Day Carnegie process of inquiry, targeted specific learning and behavioral outcomes; the data we gathered supported success with each outcome. The growth mindset that underlies the improvement science model of deploying rapid tests of change to guide our development, revisions, and continued fine-tuning of teaching Peer Assisted Literacy Strategies to our students is essential. Our teachers and students have clearly shown that every mistake and learning challenge can indeed be a growth opportunity for change. Improvement science offers us a model that teaches us to learn from our mistakes, gain new knowledge along the way, and then apply that new knowledge to make future small changes that will eventually lead to tremendous change when we step back to focus on the big picture.

Table 1

Teacher Observations of PALS Strategy Implementation Run Chart by Week and Cycle



Impact

As stated throughout this paper, children with dyslexia struggle with acquiring basic literacy skills due to their unique brain profile. Once basic skills are acquired, these students often still struggle with generalizing their skills independently to new contexts. This improvement initiative directly addressed the bridge that carried our students from skill acquisition to independence in applying their skills. The impact of this improvement initiative is described through the progress that has been achieved with the addition of Peer Assistive Literacy Strategies (PALS) to an existing evidence-based Orton-Gillingham literacy program. Surprising outcomes will be shared including how these tools led our students to build greater independence, confidence, and competence in many ways.

Impact on Independence

This disquisition proposed a change that involved teaching and evaluating the addition of a new learning tool for students to allow them to become proficient and independent in applying their learned skills. As students progress through school, learning how to engage with text becomes increasingly important for learning. Although well-trained teachers can teach isolated skills such as phonological awareness or decoding efficiently through careful instruction, reading comprehension relies on foundational reading skills in concert with the use of strategies and a range of cognitive processing skills. The proposed Peer Assisted Literacy Strategies intervention provided students with an opportunity to do both, and to gain automaticity, confidence, and independence in working with their peers.

The problem analysis enabled us to look at the many factors that contributed to a lack of the development of independence in our primary students at the Key School. Through the design of our Improvement Initiative we directly targeted 1) the students' lack of ability to generalize their reading skills due to a lack of independent and strategic-based practice, and 2) a lack of clear communication in articulating the components and the importance of 'learning-to-learn' skills for our first and second graders amongst our faculty, with our students, and with our parents.

Peer Assisted Literacy Strategies (PALS) provided the missing piece of facilitating opportunities for students to become proficient and independent in applying their learned reading skills in a collaborative, social setting. PALS provided our youngest students with explicit instruction, modeling, and development of new strategies and the practice opportunities with their peers to demonstrate that they "owned" their newly learned reading skills. This improvement process also required that our Design Team clearly articulate the specific, observable behaviors that they hoped our second graders could achieve; once we defined them it was far easier to use a common language when sharing our expectations with parents and students and to discuss them amongst our team.

Several quantitative and quantitative measures were built into the evaluation of this PALS improvement intervention to help answer the final improvement science question: *How will I know if the change initiative is actually an improvement?* These outcome measures were utilized to assess whether my AIM or overall outcome of improvement had been achieved. The outcome measures employed included: A Level of

Independence Rubric, Student Self-Efficacy Surveys, Parent Surveys, and Teacher Focus Groups.

As a measure of change in the second grade students' independent learning skills, a Level of Independence (LOI) rubric was developed and scored by the teachers *prior to (pre measure)* and *following (post measure)* the change intervention of teaching Peer Assisted Literacy Strategies. This rubric outlined specific desired performance indicators in three domains: Reading Strategies, Social-Emotional Tools, and Work Habits/Learning to Learn Skills. The growth shown from pre to post scores on this rubric showed a strong increase of students displaying a high level of independence in employing reading and learning-to-learn strategies.

Each skill or criteria is rated on the rubric on the scale of I to IV. Each level is defined: Level I - the student has NOT YET learned the skill, Level II – the student behaviors have shown that the skill is EMERGING, Level III – the student is DEVELOPING COMPETENCY with the skill, and Level IV – the student is PROFICIENT AND HIGHLY INDEPENDENT in utilizing the skill or strategy. The range of possible scores was from 9 to 36. Our student Pre scores ranged from 11 to 24.

A paired samples T test was run on the average of the pre and post LOI rubric scores. There was a significant difference in the LOI rubric pretest scores ($M=17.08$, $SD=3.753$) and the LOI rubric posttest scores ($M=24.42$, $SD=3.753$) conditions; $t(11)=8.315$, $p = .029$. All twelve students made strong gains in their level of independence with the average being 7 points gained indicating 7 specific areas of improvement. As mentioned above, the Level of Independence rubric measured three domains. In the domain of Reading Strategies the following skills were measured: 1)

Uses Word Attack Strategies and 2) Uses Comprehension Strategies. In the domain of Social-Emotional Tools the following skills were measured: 1) Knows How to Work Effectively With Peers and 2) Confidence. In the last domain, Work Habits/Learning-to-Learn Skills the following skills were measured: 1) Prepared for Class, 2) Assignment Completion, 3) Home Learning Completion, 4) Uses In-Class Time Wisely, and 5) Seeks and Accepts Assistance/ Uses Self-Advocacy. Refer to the table 2 below to see the effect size for each domain.

Table 2

Mean Growth and Effect Size shown for each Independence Domain

Level of Independence Domain	Mean (Growth in points)	Cohen's d	Comment on Effect Size
Pre to Post: Reading Strategies	+2.08	1.93	Large
Pre to Post: Social/Emotional Tools	+1.92	2.12	Large
Pre to Post: Work Habits/L 2 L Skills	+3.83	2.45	Large

A highly motivating component of the PALS program was the PALS partner score sheets that were the venue for daily student and teacher documentation of completion of a PALS lesson including points earned for: 1) setting up quickly, 2) each sentence read correctly or reread correctly, 3) employment of PALS strategies, 4) positive coach / reader supportive comments, and 5) putting materials away appropriately. The weekly PALS awards and points celebrations kept the students encouraged and proud of their accomplishments. After lots of opportunities to learn and practice the PALS components, students displayed increasing degrees of independence with the process and

proficiency in using the strategies. The effect size for this analysis ($d = 2.59$) was found to exceed Cohen's (1988) convention for a large effect ($d = .80$). In addition, each domain was evaluated separately and each effect size was very large.

The second outcome measure employed was the administration of Student Self-Efficacy Surveys. Students were asked to fill out the *Thinking About My Learning for 2nd Grade Self-Efficacy Survey* prior to and then following the PALS intervention.

Individually, each student was read 10 statements about their self-efficacy in reading related areas. The students responded by circling the appropriate smiley face emoticon

for: No , Maybe , I think so , and Yes . Sample questions

included: I think I can learn to sound out big words, I think I can read without my teacher's help, and I think I can tell the stories I read to my friends. Refer to Appendix C to view the Self-Efficacy Survey.

A paired samples T test was run on the pre and post Student Self-Efficacy Surveys. There was a significant difference in the Self-Efficacy or the *belief in one's ability to achieve reading sub skills* pre scores ($M=20.46$, $SD=6.933$) and the Self-Efficacy posttest scores ($M=24.42$, $SD=2.466$) conditions; $t(11)=4.267$, $p = .001$. All twelve students made strong gains in their confidence in their ability to achieve skills in reading.

The third outcome measure designed to evaluate whether my AIM or overall outcome of improvement had been achieved, was a pre and post parent survey. Once again, a paired samples T test was run on the pre and post Parent Survey scores. The surveys included seven statements that the parents could respond to on a scale from 0 to 3 points. Several examples of these statements: My child likes to read out loud at home.

My child uses strategies to sounds out words. My child takes charge, shows me his/her work, and asks me to sign the agenda. Scoring for the parent survey is as follows: No = 0 points, Occasionally = 1 point, Most of the Time = 2 points, and Yes = 3 points. The total range of the possible full survey scores was from 0 to 21 points. In addition, parents could offer open-ended responses to the question: Any other observations or information you would like to share with us?

There was a significant difference in the pre scores ($M=9.358$, $SD=4.087$) and the Parent Survey posttest scores ($M=12.08$, $SD=3.579$) conditions; $t(11)=8.315$, $p = .029$. The mean scores showed an average gain of 3 points from pre to post. In addition, the parents added comments such as: “She is very confident in her PALS strategies and loves to *coach* her dad and me. Her reading fluency and comprehension have really improved!” “Thank you for the magic you have created with this PALS program for my son.” “My daughter is really showing improvement in her reading and is motivated to read lots of books☺” “My son is loving Key second grade and PALS learning.”

Teacher focus group data was collected prior to the PALS intervention, midway, and immediately following the PALS intervention. Sessions were recorded and transcribed. Comments and dialogue were recorded on a matrix according to the Level of Independence categories of: Reading Strategies, Social/Emotional Tools, and Work Habits/Learning to Learn Skills and organized by three points (pre, mid, and post) of data collection and rated using the LOI rubric scoring guide of Levels I to IV. For example: During our pre PALS focus group session, one teacher made the comment, “Limited or no persistence to keep trying; frustration evident when can’t read the word.” This comment was placed on the matrix in the pre-comments section and since it refers to

reading skills, it was charted in the Reading Strategies Domain. We looked at the LOI rubric and we saw that this was a level I indicating the student had not learned a strategy for this – Not YET. This comment was then coded as a I on the matrix.

The qualitative data gained from the focus groups supports the information gained from the other outcome measures. Focus group comments were organized and presented in the matrix (See Appendix E) and analyzed by the three domains listed below.

Reading Strategies. The majority of comments from the first focus group illustrated students ranged from a level I (skills not yet developed) to a I -II (showing the beginning of skills emerging). Several example *Pre comments* for Reading Strategies: Guessing at words, limited or no awareness of strategies, Difficulty tuning into others' mistakes, and limited or no persistence to keep trying. Mid PALS comments could be scored in the range of II-III. Examples of *Mid comments* for Reading Strategies: Really using the Check IT correction strategy well, Automatically rereading sentences after error correction, and Strategies are beginning to transfer to Core classes. Post comments for Reading Strategies were mostly in the III range. Examples of *Post comments* for Reading Strategies: Tremendous gains in reading fluency, Strong gains in understanding sentences and use of appropriate intonation when reading based on end punctuation, and Some students need reminders to track while reading while others do this automatically.

Social/Emotional Tools. The Pre comments in the social/emotional realm ranged from I to II. *Pre comments included:* Blurting out when help is needed; frequent interruptions of teachers and peers, Generally unsure and lacking in confidence, and Occasionally considers their peers perspectives. Most mid comments were in the III range. Examples of *Mid comments* include: Improved friendships and confidence to try

new things, Responding well to partner coaching, More self-aware and showing signs of working effectively with a peer. The Post comments were in the III+ range. Examples of post comments include: Students are showing increased confidence in learning new things, Our team of 12 students are showing very sweet bonds with one another, and Positive responses to peer correction and words of encouragement are frequently heard such as “Good Job!”

Work Habits/Learning to Learn Skills. The Pre comments in this area ranged from I to I+. *Pre comments* included: No concept of setting up for class, Many cannot complete class assignments without tremendous assistance, and Frequently looking on neighbor’s paper for right answers. *Mid comments* range in the II to II+ range. *Mid comments* included: Progress with independence is really beginning to show, Set up for PALS has been excellent, and Some arguing about starting points in the book for the day’s PALS lesson. *Post comments* were in the II – III range. *Post comments* included: Great improvement in setting up and cleaning up – this is transferring to all classes, Strong sense of responsibility developing, Progress in independence has been amazing, and Two parents are struggling with seeing their child’s enthusiasm for reading; most parents are seeing strong progress.

In addition to analyzing the collective teacher comments in relation to the Level of Independence rubric, the qualitative data provided a richness in other ways that quantitative data could not provide. Through the process of holding our focus group and Design Team meetings, it was interesting to see how this interactive discussion process made thinking more visible. These discussions led our teachers to collectively form a clear picture of what lack of independence looked like, and to clarify and shape what true

independence should and could look like. One example of this developing clarification process is shown in this dialogue below; the teacher's names were changed to protect their privacy:

- Facilitator: How does the studying and home learning process change as students progress from being very dependent to becoming more independent?
- Rachael: For us, by third grade, they finally understand that they can do their home learning and they come in and it's completed, and if it's not, at least their parents didn't complete it. So they're very autonomous in their after-school abilities to complete whatever is in front of them and in a reasonable, recommended amount of time.
- Nancy: I think I can give feedback on what Rachael is saying. That reasonable amount of time, they do get it down when they are more independent. And then, we have some this year who are doing it, getting it done, and then reading a chapter book on top of that. Because the small amount of homework (home learning) they really shouldn't be taking any time –
- Rachael: As opposed to blaming mom or dad if they didn't do their homework.
- Nancy: Right, or crying-
- Rachael: Or pitching a fit-
- Nancy: They stop blaming someone and take responsibility for their work.
- Rachael: Yes, that's right. In the beginning, there's no responsibility. They say it's mom and dad's fault if the binder's not signed. Hopefully, by the end of the year when more independence is shown, they say, "It's mine, it's my job." They take ownership.

This ongoing dialogue helped the teachers clarify and educate one another about the end goal that we are trying to target here at the Key School. Up until this time, we had not engaged our teams in specific dialogue about what the goal of teaching our students independence really would specifically look like for our youngest students. The more we conversed, the more clearly the “picture” of independence was clarified. Once we developed the clear picture and eventually the rubric, we better understood what our target should look like. This was a very important step towards improvement.

Another example of this clarifying, shaping process happened when we began seeing changes in student independent learning behaviors midway through our PALS intervention. Hearing another teacher’s observations gave greater value to their observations. I could hear the excitement in their voices regarding the changes they were seeing. Here is a snippet from one our mid-PALS focus group meetings:

- Facilitator: What have you seen with their reading fluency?
- Jane: That’s probably the best part. From the beginning of the year when some of the kids were sounding out words letter by letter, they are now reading smoothly. Kids who haven’t been exposed to certain phonograms yet are now picking it up. I mean amazingly, they’re just, ... it’s flowing.
- Nancy: I think there’s a little bit of learning from one another.
- Jane: They are learning from each other, for sure. Their fluency and expression is starting to, well, really, they are way faster than any other year at this time.
- Nancy: I think they’re even chunking words; they are not reading word by word anymore. They’re chunking words, groups of words within sentences,

and adding expression. That's been a big surprise, how much the expression some of them are adding to their oral reading. I think the independence is incredible.

- Jane: Yes, incredible. And they get their materials, their books, they get set up, and they get started. If I have to run out to get something and come right back, they're still going, going, going.

The words spoken during the focus group conversation above were captured through audio recording and a transcription service as mentioned in the data collection section. The opportunity to bring the teachers together to share their observations enriched and verified this process. The vitality of their words and the excitement they generated provided a richness of data that was unexpected. The transcriptions also provided real-time documentation of "pictures" of the progress at various timestamps in the process. Change that led to improvement was clearly taking place.

Across the board, all measures indicate strong gains in independence as shown in reading strategies, social emotional tools, and in work habits / learning-to-learning skills. As the transcribed teacher comments were deductively coded and scored with a Level I to IV we saw definite patterns. During the pre PALS discussions, the majority of the comments that were observations of student performance were at the Level I with a few emerging towards Level II. During the mid PALS focus groups we saw that comments were moving towards skills in the solid Level II and at times the Level II-III range. By our final Post PALS focus group meeting, the majority of the comments were scored in the III – IV range. This qualitative measure supported our findings from our quantitative measures. Our students were showing great growth in confidence, independence, and

were employing their skills in other settings including other classes at Key and at home following our PALS intervention.

Impact on Overall Reading Progress.

Reading progress was not the overall aim of this improvement initiative; however, some noteworthy surprises in reading skills did occur. It is important to note that the gains made in specific reading areas cannot be solely attributed to the PALS intervention. As mentioned previously, the impact of this improvement initiative is described through the progress that has been achieved with the addition of Peer Assistive Literacy Strategies (PALS) to an existing evidence-based Orton-Gillingham literacy program.

How teachers teach reading is equally as important as what they teach. Teachers who engage their students in learning to read, provide small group instruction and explicit skill instruction in comprehension, and provide modeling and coaching yield students with better outcomes in learning to read. The Key School Language Comprehensive classes are designed with a student: teacher ratio of 3:1 to allow for the above mentioned components to occur with even greater intensity in our 85-minute classes. Our teachers are highly trained in the Orton-Gillingham philosophy. We learned that partnering the principles of the Orton-Gillingham philosophy with PALS offered the best of both worlds in offering the *why, how, and what* essentials that are needed for success in teaching the child with dyslexia. Building on earlier research studies, Guthrie and colleagues (2006) demonstrated that combining motivation practices with strategy instruction in comprehension increases reading comprehension. The motivating point system and frequent PALS celebrations added to our students' success. Several studies also demonstrated that beginning readers were able to successfully transfer knowledge of

comprehension strategies from one literacy activity to another after repeated exposure, explicit explanation, teacher modeling, and questioning. Through the improvement science process, our PALS instruction evolved to include large group skill introductions, diagnostic/prescriptive explicit small group instruction, teacher modeling, provision for opportunities for students to review and reinforce their skills, frequent practice opportunities with gradual release of responsibility, and then when ready - daily PALS time to practice those skills with a peer. We saw that this model allowed our students the ability to “own their skills” and transfer those skills to new settings. Likewise, the National Reading Panel found that reading comprehension of text is best facilitated by teaching students a variety of techniques and systematic strategies to assist in recall of information, question generation, and summarizing of information. The Panel also found that teachers must be provided with appropriate and intensive training to ensure that they know when and how to teach specific strategies (Langenburg, 2000).

In order to ensure that our students were not losing ground in their reading skills with the addition of Peer Assisted Literacy Strategies to their Orton-Gillingham structured literacy program, balancing measures of pre and post testing were done to assess whether or not gains were being made in reading accuracy, fluency, and comprehension. Balancing measures keep an eye on the other parts of the system that might also be changing as a result. The following balancing measures were analyzed below including the Gray Oral Reading Test, the Phonological Awareness Test, and the Diagnostic Indicators of Beginning Early Literacy Skills.

A paired samples T test was run on pre and posttest scores of the two standardized reading assessments. The first of these tests is the well-known Gray Oral Reading Test

(4th Edition) utilizing Form A for the pretest and Form B for the posttest. There was a significant difference in the GORT pretest raw scores for Comprehension ($M=10.000$, $SD=9.125$) and GORT posttest raw scores for Comprehension ($M=15.417$, $SD=8.129$) conditions; $t(11)=5.481$, $p = .000$.

These results suggest that while our students were learning and employing the PALS reading comprehension strategies, their reading comprehension made solid improvements as measured by the Gray Oral Reading Test. Specifically, our results suggest that when students learn and practice metacognitive comprehension strategies, their ability to comprehend connected text increases. The PALS Retell Strategy required the coach to ask the reader a series of questions to elicit and organize the retelling of the paragraph or short story. The questions were as follows: What happened first? What happened second? What happened last? The reader would respond with a sequential retelling of the story and quickly learned to employ active reading while reading aloud. The PALS Paragraph Shrinking Strategy was designed to teach the student summary skills. The coach would ask: What is the most important who or what? What is the most important thing about the who or what? Can you summarize the passage in 10 words or less? The reader would be holding 10 cards and work to organize his thoughts into producing a summary statement of 10 words or less. As the student dictated the summary or main idea statement, he would lay down one card for each spoken word. Often it required several tries and at times some help from the coach. This metacognitive strategy helped the students think about their reading and trim their statements into the most important information. Daily practice and teacher observation of these strategies showed a steady increase in their ability to comprehend the material they read aloud to their

partners. The effect size for this analysis ($d = 1.65$) was found to exceed Cohen's (1988) convention for a large effect ($d = .80$).

There was a significant difference in the GORT pretest percentile scores for the test Total [Sum of Fluency and Comprehension] ($M=10.083$, $SD=15.594$) and GORT posttest percentile scores for the test Total ($M=23.750$, $SD=28.480$) conditions; $t(11)=2.430$, $p = .033$.

Noteworthy, were the subsequent snowball effects for independence of several of the PALS strategies. The Check It strategy was designed to help the coach and reader become more aware of reading errors and to teach the coach to use specific language to guide the reader to self-correct. As mentioned previously, we added a multisensory piece to this strategy by requiring the reader to "tap out" a word upon hearing "Check It," before the coach "gave" him the word. After much repetition and practice, the reader became more independent in employing the tapping strategy vs. guessing and ultimately improved his reading accuracy. An additional piece of the Check It strategy following the self or coach correction of the misread word includes the coach saying, "Start the sentence again." At this point the reader reread the sentence correctly and developed a clear neural imprint that improved fluency. The full implementation of this strategy empowered our students to use a known spelling strategy to "recode" a word and ultimately improve his word attack skills and overall fluency. Our results suggest that when students learn and practice strategies to improve their reading accuracy, fluency, and comprehension, their comprehensive reading skills improve. In addition, the effect size for this analysis ($d = .895$) was found to exceed Cohen's (1988) convention for a large effect ($d = .80$).

The second standardized assessment administered as a balancing measure was the Phonological Awareness Test (PAT). This test assesses Phonological Awareness, Sound-Symbol Associations (Phoneme-Grapheme), and Decoding. A pre and post PALS instruction test administration was done. Once again a paired samples T test was done on the pre and post mean scores of all twelve students.

There was a significant difference in the PAT pretest raw scores for Phonological Awareness ($M=107.67$, $SD=10.55$) and PAT posttest raw scores for Phonological Awareness ($M=122.58$, $SD=6.501$) conditions; $t(11)=5.52$, $p = .000$. Secondly, there was a significant difference in the PAT pretest raw scores for Decoding ($M=41.42$, $SD=17.526$) and PAT posttest raw scores for Decoding ($M=55.83$, $SD=12.037$) conditions; $t(11)=3.87$, $p = .003$. Lastly, there was a significant difference in the PAT pretest Total Test raw scores ($M=195.83$, $SD=24.357$) and PAT posttest Total Test raw scores ($M=226.42$, $SD=20.224$) conditions; $t(11)=6.08$, $p = .000$.

These results suggest that while the Peer Assisted Literacy Strategies such as the Check It Strategy mentioned above were utilized and a significant amount of daily focused oral reading occurred due to PALS, improvements were dually noted in the specific reading sub skills as measured by the Phonological Awareness Test. Our results suggest that when students learn and practice strategies to improve their phonological awareness, decoding, and fluency, their comprehensive reading skills improve. In addition, the effect size for this analysis ($d = 1.80$) was found to exceed Cohen's (1988) convention for a large effect ($d = .80$).

It is important to insert that PALS was added to an existing Orton-Gillingham structured literacy program that meets the Knowledge and Practice Standards for the

teaching of reading as endorsed by the Academy of Orton-Gillingham Practitioners and Educators as well as the International Dyslexia Association. It is the expectation of this instructional program to see solid gains in phonemic awareness, word attack, fluency and comprehension. Gains that have been measured by these standardized tests can only partially be attributed to the implementation of PALS. These balancing measures were administered to ensure that PALS did not impede learning and that our students continued on a strong trajectory of reading progress. These measures assured us that reading skills were not regressing, but were improving significantly.

It is important to note that a small **p-value** (typically ≤ 0.05) indicates strong evidence against the null hypothesis. In all of the p-values for the paired sample T tests run on these pre and post mean scores, the p-value was less than 0.05 meaning that the results were not due to chance.

Conclusion

The change initiative of adding PALS to our existing Orton-Gillingham literacy program clearly led to improvement. The improvement process of implementing rapid tests of change through PDSA cycles allowed us to set up small benchmarks along the way that would ultimately lead to our overall AIM. In each cycle we followed the model outlined in Langley's *The Improvement Guide*: we planned the test, ran the test, summarized the learning from the test, and took action based on the learning from the test.

We saw significant improvement in the three areas of Independence that our faculty deemed to be important to the future success for a child with dyslexia: Reading Strategies, Social/Emotional Tools, and Work Habits including Learning to Learn skills.

This improvement was noted in several ways. Our teachers saw tangible results as documented on the pre and post Level of Independence rubric. Our parents saw changes towards independence at home as documented on the pre and post Parent Surveys. Our students indicated growth in their *belief in their ability to learn reading skills* as shown through their Student Self-Efficacy Scales. Through our focus groups and Design Team meetings, our faculty articulated what independence should look like, what it looked like at the start of the year for our second graders, and then voiced the specific gains in independence they were observing as the PALS intervention was occurring. In addition to the growth shown in Language Comprehensive class and during PALS reading time, the most thrilling aspect was to see the skills transferring to the students' other classes including Core science, social studies, and math. All outcome measures validated that our students made great growth in independence.

Our balancing measures checked in with overall reading progress. These measures also indicated strong growth in reading skills including reading accuracy, reading comprehension, and in overall reading fluency. Comments voiced in teacher focus groups referred to tremendous and unexpected growth in reading fluency, awareness of sentences and how the punctuation impacts the intonation, and overall joy and confidence in reading.

Our process measure of employing daily observation checklists allowed us to be assured that students understood how to implement the PALS strategies, but they also allowed for us to implement change as needed. We surprised ourselves by seeing this data as a great source for diagnostic / prescriptive teaching. It allowed us to focus on individuals and their individual skill progression. On a daily and weekly basis we could

take this information and intentionally tweak, model, reteach, and reinforce skills that were not quite mastered.

Yet to be explored, will be the final test of independence. Will our students take these independent learning skills and transfer them to contexts beyond the Key School? We are seeing great beginnings of this occurring at home and in other aspects of their lives. This research will not end with this intensive PALS intervention. It will serve as a new beginning for tracking our students in a more specific way once they transition from our program.

Implications and Recommendations

Since 1965, there have been more than 45,000 participants in NICHD-funded reading research programs and approximately fifteen years of fMRI research in reading development, reading disorders, and reading instruction. From these studies and others we have learned how children read, why some children have difficulties, and how we can prevent a lifetime of illiteracy through approaches and interventions for struggling readers (Birsh, 2005). We also know that 80 percent of students who are struggling with reading acquisition are dyslexic and have a unique brain profile that requires explicit, systematic, phonological-based reading instruction along with explicit instruction in utilizing reading strategies to foster generalization of reading skills to other contexts. The risk factors for dyslexia can be seen in kindergarten and first grade: trouble with letter-sound knowledge, phonological awareness, and oral language development. The earliest clue to dyslexia is “a weakness in getting to the sounds of words” (Shaywitz, 2003). The ability to read and comprehend is dependent on rapid and automatic recognition and decoding of single words. Slow and inaccurate decoding are the best predictors of deficits

in reading comprehension. Detecting reading difficulties early and providing appropriate intervention in time to keep children from failing is critical. A thorough knowledge of the structure of language and how to teach it layer by layer is required for all teachers of reading (Birsh, 2005). There are proven reading strategies to maximize reading comprehension and to develop confidence in doing so through peer mediation. Peer-Assisted Literacy Strategies is one such well-research strategic approach, when used in conjunction with a comprehensive research-based literacy program, has tremendous potential in providing students with dyslexia the skills and practice necessary to gain automaticity, confidence, independence, and collaborative social experiences through successful, active engagement with peers.

Lessons for Implementing PALS with Students with Dyslexia

In this improvement initiative, our Design Team examined the effectiveness of PALS, as a supplement to our current structured literacy program. Our team has seen that PALS appeared to serve as a catalyst that fostered reading independence for our second grade children who are enrolled in the Key School, an educational environment designed specifically to promote achievement for students who have been diagnosed as moderately to severely dyslexic. As predicted, our teachers saw notable gains in the independent application of reading skills in all second grade classes at Key, parents saw improvement in independent application at home and an outward confidence in their children, and the quantifiable measures of self-efficacy and reading performance have shown improvement in the majority of the areas assessed.

An additional important aspect of establishing independence through the use of reading strategies was the acquisition of the virtue of true understanding. As stated in Dr.

Casey Hurley's book, *The Six Virtues of the Educated Person*, the virtue definition of *understanding* rests between the ideas of knowing facts and applying knowledge to new situations. The human mind works in two directions. Understanding is developed as the mind takes in sensory data and ideas. It is deepened as the mind uses new data to modify what it has already experienced and processed (Hurley, 2009). As students gained confidence in independently applying their PALS strategies to a variety of reading materials and with a variety of PALS partners, they showed that they were well on their way to gaining the virtue of true understanding. They understood the power, possessed the flexibility, and gained the ability to modify their strategies to novel situations.

As a result of this work, we will more than likely add PALS to our comprehensive language curriculum and consider expanding this change intervention to other grades at the Key School. Prior to a full-scale change, we will continue to employ small, rapid tests of change as we consider adding PALS one grade at a time. In addition, we hope to produce a PALS teacher training module that will include video clips of the teachers teaching the strategy procedures to the students; teachers modeling the strategies; students modeling the strategies; and early, middle, and final PALS sessions. This module would also support our Key Learning Center's mission of developing training courses and Saturday Seminars designed to advance the knowledge and practices for teaching students with dyslexia in our community.

In closing, I would like to offer recommendations to other schools that may consider implementing Peer Assisted Literacy Strategies.

1. Familiarize yourself and the teachers on the scholarly research about Peer Assisted Literacy Strategies. This will help establish buy-in and purpose with your students and your faculty.
2. Recognize that in settings with large whole group instruction, some students with dyslexia have not been successful in learning and implementing PALS.
3. Address the learning profiles of all students by recognizing that adaptations may need to be made and additional reteaching and practice may be needed before all students will be successful with PALS partner reading time. Employing the principles of multisensory teaching, such as the components of the Orton-Gillingham approach, open the window for success for the students who have the brain profile of dyslexia.
4. Consider a different pacing than offered in the Vanderbilt resources; adjust the pacing to meet the needs of the students. Teaching the strategies to mastery in small groups with lots of modeling and coaching prior to adding them to PALS partner sessions increased the success level for our students.
5. Add additional layers to the strategies as needed. Here are two specific examples:
 - a. Check IT Strategy: Although this strategy was designed for the coach to tell the reader to check a reading error, the coach usually had to step in and “give” the reader the correct word. With the O-G philosophy, we do not “give” students words, but lead them to employ their strategies to unlock the word. Prior to allowing the coach to help the reader with the missed word, the reader was asked to “tap” the decodable words by touching their fingers to help unlock the phonemes for each grapheme of the missed

word. This almost immediately allowed our students to self-correct. Then encourage the coach to always validate the hard work that the reader showed and offer lots of positive comments for the corrections such as “Good job!” or “You worked hard to get it!”

- b. Paragraph Shrinking: We added an extra step to this strategy and spent a great deal of prep time talking to the kids about main idea statements while viewing pictures or listening to stories before employing this with reading. There were not enough practice activities in the original resources. Once the students were clear of the concept of the main idea (What is the most important who or what? What is the most important thing about the who or what? Now tell me in 10 words or less.) We gave them a set of 10 cards. As they were practicing and thinking aloud, they laid down one card for each word spoken and this helped them visualize when they were using too many words. We built from simple to complex and made this multisensory. The cards really helped them with choosing their words carefully.
6. PALS resources are available for grades Kindergarten through sixth, but peer assisted literacy strategies can be utilized with older grades as well.
7. Setting aside PALS time several times throughout the week will foster independence, offer the students time to practice their skills out from under the watchful eye of the teacher, and create a setting for positive social skills to develop with their peers. The motivational system with PALS rewards “PALS teams” and this builds a natural camaraderie with peers. Sometimes in

specialized school settings it is hard for the teachers to “let go.” PALS served as a great venue to allow our teachers to get to the final release of responsibility and we could readily see that our students certainly enjoyed and owned their responsibilities during PALS time.

Lessons for Leadership

As I implemented this disquisition improvement initiative, I had the privilege of working on the front lines with my first and second grade teachers. I had the honor of watching them in action on a daily basis and received the benefits of their strong work ethic, their dedication to their students and our school, and their ongoing support. They believe in our mission at the Key School: The Key School offers bright students with language-based learning differences the educational opportunity to overcome their academic challenges while discovering and embracing their own dyslexic mind-strength gifts. I would like to start by thanking them for all the hard work they put in on a daily basis to achieve our mission by providing an amazing educational opportunity for their students.

The completion of my disquisition is the capstone of my doctoral program in educational leadership. As I have spent time examining the many reasons for the success of our PALS improvement initiative at the Key School, I am reflecting on the categories of change concepts as outlined in the bible of our program, *The Improvement Guide*. I have learned a great deal about leadership and wanted to close this paper by passing on this *wisdom* I have gained to everyone who reads this paper.

First of all, there is a great deal to be gained from *shared leadership*. Creating a Design Team helped to share the leadership and ownership of this change initiative.

Giving people access to information that is relevant to their job allows them to suggest changes, make good decisions, and take action that leads to improvement (Langley et al., 2009). The Design Team that we established at Key and their involvement from the very beginning of this process, allowed me to share my problem of practice and receive input as I analyzed the problem. With each additional meeting, I continued to update our team, shared current information, and they offered differing perspectives and observations. Our teachers had all the important information about our focus on independence and this knowledge allowed them to make excellent suggestions and decisions to guide the improvement cycles as we embarked on adding a new component to our program. To quote W. Edward Deming, “Improvement begins with knowledge.”

Measurement plays an important role in focusing people on particular aspects of the business. Things that are measured are deemed important and things that are not measured are deemed unimportant. Improving measurement systems can lead to improvement throughout the organization (Langley et al., 2009). I learned that up until this past year, I had not created a measure that would focus on one of the most important goals of the Key School for our youngest students. Therefore, we were not intentionally focusing on teaching our students independent learning skills. In previous years, we began our discussion about independence with our faculty and students in fourth grade. With the teachers’ help, we created a rubric for evaluating our students’ progress that gave us all a ‘picture’ of what we were actually striving for with our youngest students. Once we defined this, and began measuring this, we all began to recognize this as an important achievable aspect of our program.

Take care of *basics*. Certain fundamentals must be done to make an organization successful. If peoples' basic needs are not met, we cannot expect to make meaningful improvements in other areas (Langley et al., 2009). During the implementation of our PALS work, I took note of one of our teachers, Mrs. Z, who appeared to be resistant to implementing this change. On a cognitive level she understood the need to empower our students to become more independent and she was knowledgeable of the strong PALS research that was shared in our initial Design Team meeting. I kept asking myself, "Why is she so resistant to something new?" It took me a while to put the pieces in place and to help her move forward with our plan. I already recognized that our teachers are under a tremendous amount of stress as they embark on the task of starting up the school year. What a difficult time to introduce an entirely new program for our teachers and students to learn and manage! I quickly realized that I needed to do all that I could to offer some pressure relief. Mrs. Z was not a slacker in any way; as a matter of fact, she was usually the last one to leave at the end of the day due to her diligence with lesson planning. I realized that she needed more time to process and prepare for the day-to-day work, and now with the addition of a new instructional component we had overloaded her plate. I quickly realized that I needed to work to take some things off her plate. I tried to do my share of the legwork including copying, materials preparation, and big picture planning. I worked hard to minimize meeting time and provided meals when it worked to have a lunch meeting. In addition, professional time was given when possible so Mrs. Z and her partner teacher could have dedicated time to process and plan for PALS. I realized at certain points that both teachers hit a state of overload. I learned a great deal about processing speeds and when something needed to be removed from their plates to make

way for new PALS learning. At these points I jumped in with some of the teaching to provide greatly needed teacher planning time. Usually this time served as a win/win for the kids and teachers. I thoroughly enjoyed this group of students and was able to experience their trials and successes first hand. I tried to listen to the teachers' needs and let them know that I greatly valued their efforts in 'sharpening their saw' by learning PALS.

Conduct *training*. Training is basic to quality performance and the ability to make changes for improvement. Changes will not be effective if people have not received the *why* as well as the *what* and *how*. Our Design team meetings, teacher focus group meetings, and PALS professional development discussions were very important in establishing the *why*, *what*, and *how* of what we had hoped to accomplish. In addition, the depth of our Key School Orton-Gillingham training and ongoing professional development supports our teachers in being highly skilled and creates a culture of lifelong learning; our entire faculty has a common background of shared principles that are essential in order to meet the needs of our dyslexic population. Building on this base of understanding made it an easy fit for the teachers to apply the O-G principles to the teaching of the PALS strategies.

Listen to customers. To benefit from improvements in the quality of products and services, the customer must recognize and appreciate the improvements that are being made. Problems in organizations (or schools) can occur because the producer does not understand the important aspects of the customer's needs or the customer is not clear about their expectations from suppliers. The interface between producer-provider and the customers is an opportunity to learn and develop changes that will lead to

improvement (Langley et al., 2009). As this applies to our school, it was critically important that we educated the parents of our second grade children about the purpose of PALS and why this initiative would benefit their children. In order for them to appreciate the improvement changes, they first needed to understand why a change was needed. The parent surveys and our parent conferences allowed us to listen deeply to their needs. The survey information also helped us get a ‘reading’ of what they were seeing at home and the conversations allowed us to hear about their hopes and fears in regard to their children’s education. It was also important that we educated our parents as to why independence is an important and attainable goal for their children and to empower them to support this at home. Prior to coming to the Key School, so many of our children were drowning in homework and in unrealistic academic expectations asked of them in prior schools. Parents often had to step in and do the work for their children. Reversing this with a philosophy of a growth mindset and empowering them to allow their students to ‘learn to learn’ and to embrace mistakes, involved lots of listening and many guided conversations with our parents. Through this communication, we gained a clearer understanding of what parents hoped for their children, and we clarified the educational needs of their children, the goals of our program, and how we would be addressing these with this improvement initiative.

Lessons for Social Justice: The Complications of Getting the Ticket

Proficient reading skills are most definitely a basic human right and the *ticket* to personal independence; it is critical that every child in our nation be given access to the “ticket.” Unfortunately, as documented in this paper, far too many children don’t have the ticket and will never get the ticket if we don’t continue to realistically battle the

reading crisis in our country through the *why, how, and what research*. As I revisit the quote by Kofi Anan that I mentioned at the beginning of this discourse, “*For everyone, everywhere, literacy is, along with education in general, a basic human right.... Literacy is, finally, the road to human progress and the means through which every man, woman and child can realize his or her full potential.*” **The inability to learn and apply reading skills independently is a critical social justice issue in our educational system.**

We all read the depressing statistics and see the harsh realities of the education of African American children in our country. Many indicators reveal that our public schools are failing to offer these children the American Dream. African American children continue to lag significantly behind their white counterparts on all standard measure of achievement, they are three times more likely to drop out of school as white children, and twice as likely to be suspended from school (Ladson-Billings, G, 2009). These facts are screaming for a ray of hope for our educational system in meeting the needs of our African American children and many other marginalized groups of children. I would like to take a few moments to talk about a precious “ray of hope” that I experienced at my school during the timeframe of my doctoral studies.

Booker, an adopted African American student, became my ray of hope for our educational system. Upon reflection, he has actually become a complete sun shower for our teachers and for me this school year. However, in first grade, Booker was a very disgruntled little fellow. Learning was such a struggle and a high level of frustration was reached the moment he was exposed to a challenging new skill. The combination of being bright, deeply dyslexic, and the only child of color in first grade was a tricky

combination. Despite a well-trained Orton-Gillingham teacher who loved him, he needed to regularly meet with our Dean of Students for frequent timeouts and discussions about the importance of a growth mindset. He verbalized his frustrations and frequently shut down or refused to pick up his pencil. Booker's loving and supportive adoptive white parents saw the same frustrations at home.

Each year we have potential Key School students visit with us for a day as a part of the admission process. In early spring last year, after quite a few children had already visited our program, we had an African American student visit with our first graders. While Michael was visiting in Booker's math class, Booker turned to his teacher who was seated beside him and said, "He looks like me!" His teacher vividly noted the smile and pleasure that shone in his voice.

We made it our mission to enroll this new student for the next school year; we knew there were many other factors that led to Booker's anger, but we hadn't suspected that he was feeling *so* challenged by his dyslexia and alienated in our white world. The new student indeed needed us and had a big dose of dyslexia. As Booker ended his first grade year with gains in many academic areas, he was still a frustrated, easily angered little boy. As he progressed into second grade with a larger group of students including Michael, we began to see changes occur.

Through the implementation of our second grade PALS program, each student became acutely aware of one another and the daily struggles they all had with reading. It was fun watching Booker be PALS partners with two different students. During his time as PALS partner with Michael we saw a difference in his demeanor, and a serious student began to emerge. Michael was Booker's second PALS partner. As the oldest in the

class, Michael had a little maturity on his side, and he was a strong PALS partner. He kept Booker to task so their team would be sure to earn all the possible points each day. Michael struggled and Booker noted this. Booker also struggled, but he began seeing the results of his efforts in employing PALS strategies independently. I was thrilled when one day when PALS time had ended, Booker asked me, “Can I keep reading?” During our first semester of this school year, the incremental gains in Booker’s academic progress, growing friendships, and contentment with having a student that “looked like him” have led to his teachers noting daily smiles. He has not needed to visit with our Dean of Students at all, with the exception of a few “check-ins” initiated by our Dean. We know there are many complex factors other than those mentioned in a ‘turn around’ as significant as this one. We have seen an amazing rapport develop between Booker and his second grade language teacher, and we know this is an important factor with student success as well. The intersectionality between race, gender, class, and learning challenges is a combination to be further studied. All in all, we have certainly learned a great deal watching Booker unfold as a joy-filled, successful student. In addition to the outward signs we saw with Booker, one specific piece of quantitative data tells a great deal about his “belief in his ability to learn reading skills.” His pre and post Self-Efficacy Surveys showed greater gains than any other student. His pre score was an 11 (lowest pre in second grade) and his post was a 26 (up there with the strongest). In addition, he showed great progress in his Nonsense Word decoding and solid progress in his Reading Fluency as measured by DIBELS and the Phonological Awareness Test. We can never underestimate the lesson learned about being the only “one,” and the hope of *getting the*

ticket for more students when educators can own the *power to craft a learning environment that provides equity in meeting every students' needs.*

Adopting school-wide interventions may help shift the understanding of the whole child such as training in Culturally Responsive Instruction (CRI). As mentioned in a 2010 article on Response to Intervention, the general education setting may be viewed as the “front-line” in the prevention of difficulties because the primary focus is to apply early strategies and related interventions to eradicate a targeted problem (Rush, Dobbins, & Kurtts, 2010). As our Carolina Day School strategic plan is placing a strong focus on increasing diversity, it is worth considering specific training such as CRI, as suggested in this article, to enable our teachers to create culturally responsive classrooms that make real-life connections based on our students' experiences.

The stories of successful teachers that Gloria Ladson-Billings shared in her book, *The Dreamkeepers*, presented to us the notion that teachers must be like coaches; the teacher-coaches believed that their students were capable of excellence; they shared the responsibility of their students' achievement with parents, the community, and the students themselves. Parents want an education for their children that strives for excellence, but also one that does not separate the children from their homes and their communities. At the Key School we recognize our “coaching” role as well as the responsibility we have to our families, students, and community to include them in their journey to help our children overcome their dyslexia. We strive to create an environment that focuses on the strengths of dyslexia. Our philosophy is to not look at our children through the lens of *what is wrong with them, but what is right with them.* If we see their strengths, set the bar high, and address their unique brain profiles with the teaching that is

right for their brains we can overcome their challenge with learning to read. To put this simply: If a child learns differently we must teach them differently. As quoted by an adult African American male with dyslexia who came to the realization of his giftedness through poetry, “Educators must look at the ‘toughest-at-risk’ pupil with the notion that he has extraordinary abilities” (Robinson, 2016). The current body of educational research of scholarship on the intersection of race, dyslexia, and giftedness is limited in scope, but worthy of further exploration.

We must continue to educate students, teachers, families, and our community about the unique challenges and strengths of the child who is struggling with learning to read; we know that 80% of these children have dyslexia. We must also remember that the “problem” is not the child; the problem is ensuring that teachers and the child’s support network have the right tools and the right lens to address the reading challenge.

As I look to the future, and plan for a PALS teacher professional development module, I hope to share what I have learned with many teachers and professionals in our community. I believe that the ability to “get the reading ticket” is far more attainable for our nation’s children if we can focus on giving our nations’ teachers the tools to reach all children and to recognize and appreciate their unique brain and learning profiles. Failure to accept the shift in the lens of asking ourselves, “How can I address this child’s learning profile?” from “This child is broken and his situation is the cause of this problem!” will only perpetuate an educational system that consciously or unconsciously continues to promote illiteracy and poverty (Gorski, 2006).

In closing with the words of Thurgood Marshall, former Chief Justice of the US Supreme Court: “The goal of a true democracy such as ours, explained simply, is that any

baby born in these United States, even if he is born to the blackest, most illiterate, most unprivileged Negro in Mississippi, is, merely by being born and drawing his first breath in this democracy, endowed with the exact same rights as a child born to a Rockefeller. Of course it's not true. But I challenge anybody to tell me that it isn't the type of goal we should try to get to as fast as we can." I believe this goal will become increasingly more attainable if we can help children get the "reading ticket" through meeting their learning needs and empowering *their* independence in *their* world.

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Appendix A

PALS Checklist

PALS Team: _____

Week of _____

SKILL or Lesson Component	M	T	W	TH	F
Materials – Ready to go/ Begin promptly (one point: PALS or observer)					
Partner Reading (possible bonus point by observer if +) <ul style="list-style-type: none"> • Students track and follow one another • Point for each sentence read or reread correctly (PALS give 1 point for each sentence) 					
Use CHECK IT Strategy as needed (possible bonus point by observer if +) <ul style="list-style-type: none"> • Pal says CHECK IT when word is not known by partner • If rapping, blending, Doc/Swoog works – partner keeps reading • If word still not read accurately – PAL says – That word is _____ • What word? • Start again. (Only that sentence to ensure fluency and a clear neural imprint) 					
Retell Strategy (PALS give 5 points each time) <ul style="list-style-type: none"> • Reader Retells passage read • Coach asks: <ul style="list-style-type: none"> ◦ What happened first? ◦ What happened second? ◦ What happened last? 					
Paragraph Shrinking (PALS give 5 points each time) <ul style="list-style-type: none"> • Reader states the main idea of his passage (who or what the passage is about) • Gives a 10 word summary • Coach asks and can help as needed: <ul style="list-style-type: none"> ◦ What is the most important WHO or WHAT? ◦ What is the most important thing about the WHO or WHAT? ◦ Shrink it to 10 words or less! Use your cards to help. 					
Prediction Relay (PALS give 2 points each time) <ul style="list-style-type: none"> • Reader predicts what is likely to happen on the next page • Then reads aloud or silently the next page • Summarizes the just-read text • With coach decides if his prediction was accurate (possible wrong predictions are justified) 					
Extra points by observer for accurate, independent use of strategies					
Extra point by observer for supportive peer comments					
Completion of daily PALS activities/put materials away – (PALS give 1 point)					

Observation Notes:

Day	Notes: Diagnostic / Prescriptive
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

Appendix B

LEVEL OF INDEPENDENCE RUBRIC for Second Grade
Revised 2016

Note: This will be completed pre, post intervention, and End-of Year – (3X’s)

NAME: _____ DATE: _____ ADVISOR: _____

Criteria	Not Yet (1)	Emerging (2)	Developing Competency (3)	Proficient (4)	Teacher	Student
READING STRATEGIES						
Uses Word Attack Strategies	Uses guessing as the primary strategy. Does not have decoding tools or strategies to apply to unknown words.	Can apply learned tools and strategies in guided settings. At times will apply these during PALS: <ul style="list-style-type: none"> • Check it with tapping • Check it with blending while tracking; Uses “dot & swoop) for multisyllabic words • Will “start again” to ensure meaning and a clear neural imprint • Usually tracks while reading and while partner is reading 	Usually applies tools and strategies when reading orally in class and during PALS. Rarely guesses. Knows the purpose and when to use: Check it with tapping Check it with blending while tracking; Uses “dot & swoop) for multisyllabic words Will “start again” to ensure meaning and a clear neural imprint Almost always tracks while reading and during PALS.	Fluent reader. Consistently uses tools and strategies to unlock unfamiliar words as needed. No guessing. Applies decoding strategies independently during PALS and coaches peers appropriately to use “Check it” as needed.		
Uses Comprehension Strategies	Has no comprehension strategies. All cognitive energy seems to go into decoding words and therefore comprehension suffers due to dysfluency when reading orally.	Understands the need for comprehension strategies. Can explain and beginning to use comprehension strategies (when coached) in guided & isolated settings. Beginning to realize how and when to use these strategies in structured settings and during PALS: <ul style="list-style-type: none"> • Paragraph Shrinking • Prediction Relay 	Can demonstrate comprehension strategies when asked. Usually applies these during structured reading times and during PALS: <ul style="list-style-type: none"> • Paragraph Shrinking (Summarizes page or passage in 10 words or less) • Prediction Relay (Can make a reasonable prediction about what might happen on the next page and validate with reading partner if the prediction was accurate) 	Independently uses context clues, can identify main idea and details within passages, and uses inference when reading as evidenced by successful application of comprehension strategies in structured settings and during PALS: <ul style="list-style-type: none"> • Paragraph Shrinking • Prediction Relay 		
SOCIAL /EMOTIONAL TOOLS						
Knows How to Work Effectively with Peers	Never considers peers; can only think of self and own needs. Cannot work well with peers without very close teacher monitoring.	Occasionally considers peers and the needs of others without reminders. Can work well with peers for short periods of time. Beginning to understand the importance of peer support during PALS. Occasionally gives positive peer feedback.	Usually is considerate of peers and is aware of appropriate social dynamics. Can play well with a variety of children. Demonstrates peer support during PALS; usually gives positive peer comments as a Reader or Coach during Pals. At times earns points for positive coaching.	Always considers the input of, and impact on, peers before forming opinions and conclusions. Strong social skills. Consistently demonstrates appropriate peer support during PALS. Regularly receives points for positive coaching.		
Confidence	Very unsure of oneself and demonstrates no confidence in doing schoolwork independently. Weak or no Growth Mindset evident.	Beginning to realize that new tools and strategies will make learning easier. Budding confidence in “self” is beginning to show itself. Open to learning PALS strategies. Willing to try to fulfill the role of reader or coach during PALS. A Growth Mindset is beginning to emerge.	Becoming empowered by employing new learning tools and strategies. Confidence is often shown in verbal comments (Let me try; I can do it; I would like to read) and in the outward realizations that knowledge of tools and strategies makes learning easier. Displays confidence during PALS: <ul style="list-style-type: none"> • Regularly offers appropriate help to peers without teacher reminders • Confident in receiving help from peers and in thanking peers A Growth Mindset is very evident. Mistakes are embraced as growth opportunities. (I can do it or I can’t do it – YET!)	Very confident student as shown through classroom behaviors: <ul style="list-style-type: none"> • Frequent positive comments offered during class • Eagerness to begin new assignments and to learn new things • Outward conversation about the connection between use of strategies and success with academics • Positive body language • Success in academics • Success in peer relations A strong Growth Mindset is displayed through actions and words.		
WORK HABITS / LEARNING TO LEARN SKILLS						
Prepared for Class	No awareness or Not prepared to begin class and does not initiate set up procedures <ul style="list-style-type: none"> • Fully dependent on teacher for reminders and help locating materials paper, pencil, binder, and for beginning start of class procedures 	Some awareness of start of class procedures and materials needed to set up for class; Beginning to initiate set up procedures <ul style="list-style-type: none"> • Needs reminders 2-3 times per week to locate materials and begin setup for class 	Usually is set up for class in a timely fashion with the appropriate materials	Consistently sets up for class in a timely fashion with the appropriate materials At times shows leadership in supporting peers with set up		





















Assignment Completion	Very dependent on the teacher to begin tasks and to complete tasks	Attempts to begin tasks independently, but still needs teacher support to complete tasks	Usually independent in beginning and completing tasks. Seeks teacher help when needed.	Very independent in beginning and completing tasks. Seeks teacher help only after first attempting the task independently. Frequently refers to resources within the classroom.		
Home Learning Completion	Home learning is rarely completed or turned in; quality needs development.	Home learning may be incomplete at least three times per month. Quality needs some development.	Completes and turns in all home learning assignments on time. This is usually of good quality.	Completes and turns in all home learning assignments and sometimes does more than expected with high quality.		
Uses IN-CLASS Time Wisely	Works only as long as teacher is involved. Lack of independent student engagement.	Works throughout most of the class but may attempt to socialize during work time. Usually completes PALS activities. Beginning to understand the importance of brain breaks.	Works until the end of class and socializes appropriately to complete collaborative class assignments. Regularly completes PALS activities. Takes full advantage of brain breaks and is learning how to pace attentional energy.	Works until end of class. Will ask for help or finish assignments after class or at home. Is a PALS model leader in completing activities Full use of brain breaks and shows ability to quickly reengage with assignments following breaks.		
Seeks and Accepts Assistance/ Self Advocacy	Never asks questions, or does so at inappropriate times for inappropriate reasons.	Occasionally asks questions or seeks assistance when he/she is unsure. Beginning to offer and seek peer assistance during PALS.	Usually asks questions that are appropriate and seeks assistance when legitimately needed. Appropriately offers peer assistance and accepts peer assistance during PALS.	Always asks questions and seeks assistance at appropriate times and for legitimate reasons AFTER trying the task independently first. Consistently offers and follows coaching strategies during PALS.		





















Appendix C

Student Self-Efficacy Survey

Thinking About My Learning for 2nd Grade

NAME: _____ DATE: _____

Topics to Think About	No	Maybe	I think so	Yes
I think I can learn to sound out words I don't know.				
I think I can learn to read big words.				
I think I can read without my teacher's help.				
I think I can understand stories that I read.				
I think I tell the stories I read to my friends.				
Topics to Think About	No	Maybe	I think so	Yes

I think I can read chapter books all by myself.				
I think I can become a very good reader.				
I think I will learn to love reading.				
I think I can learn PALS and read with a partner.				
I think I can earn lots of PALS points.				
My smiley totals				

Appendix D

Parent Survey

Second Grade Parent Survey – ROUND #2

Dear Parents,

As you know, one of our big goals at the Key School is to teach our students to become independent learners. We are always seeking ways to measure progress for you, for your students, and to provide information to our teachers so we can continuously improve our instruction.

I would like to do this survey 3 times so we can measure growth over this school year: 1) Beginning of the year – so we can see what we need to focus on. 2) **In late November**, and 3) ~~At~~ the end of the school year.

May I ask you to take a few minutes to complete this very short survey of your child’s current skills as you see them at home right now? **(CONSIDERING DOING THIS SURVEY AFTER YOUR CHILD HAS DONE 1 OR 2 OF THEIR READING SESSIONS WITH YOU OVER THE HOLIDAY)**

Thank you for your help!

Diane and Second Grade Teachers

Circle date of survey: ~~September 2016~~ **November 2016** May 2017

	No Needs to learn skills & strategies	Occasionally Skills are emerging	Most of the time Confidence is developing and I see my child using strategies	Yes Very confident My child has a growth mindset - I can do it!
My child likes to read out loud at home.				
My child uses strategies to sound out words.				
My child can tell me about what he/she reads.				
My child begins home learning without prompting.				
My child is eager and proud to complete home learning.				
My child takes charge of the binder, shows me his/her work, and asks me to sign the agenda.				
My child feels successful at school.				
Totals				

Any other observations or information you would like to share with us?

Thank you very much for your feedback! Diane and the Second Grade Teachers

Appendix E

Focus Group Comment Matrix
Matrix for Focus Group Data

Question asked in focus group and Design Team Meetings

Describe the current status of your students in regard to their Level of Independence. This was asked during Pre, Mid, and Post PALS focus groups.

Specific information was organized in a matrix format with rows and columns to clearly display the indicators of independent learning. **The three domains of observable behaviors that the teachers looked for were: Reading Strategies, Social / Emotional Tools, and Work Habits /**

Learning to Learn Skills. The corresponding Level of Independence score (scale of I-IV) was assigned to each comment per our LOI rubric.

I – Not Yet, II – Emerging Skill, III – Developing Competency, IV – Proficient: Got IT

Categories Observed	Teacher Comments Pre/Mid/Post		Evidence
Reading Strategies	PRE LOI 1. I 2. I 3. I-II 4. II 5. I 6. I	1. Guessing at words, limited or no awareness of decoding strategies 2. Limited or no persistence to keep trying; frustration evident when can't read the word 3. Some emerging skills; several students tried tracking and sound blending; others had no multisensory skills 4. Some phonic knowledge; many only reading basic CVC words 5. Difficulty tuning in to other's mistakes 6. No comprehension strategies apparent	<ul style="list-style-type: none"> • Limited perseverance and determination: Comments such as, "I don't know it; I can't read that word" • Limited or no use of strategies – below average baseline reading scores • Not on grade level with academic skills
	MID LOI 1. II – III 2. II- III 3. II 4. III 5. II 6. II-	1. Really using the Check It Strategy well. Using tapping to self-correct; buying into rereading a sentence to gain fluency (and points ☺) 2. Tuning in well to partner for the most part; usually tracking as an aid in following his partner while reading; can see and hear mistakes of self and others 3. Improvement with tracking strategy 4. Critical thinking ability is becoming apparent 5. Progressing with Retell 6. Initial excitement for Paragraph Shrinking	Post evidence is beginning to emerge

	III		
	POST LOI 1. III 2. III 3. II-III 4. III 5. II-III 6. II-III 7. III	<ol style="list-style-type: none"> 1. Tremendous gains in reading fluency 2. Strong gains in understanding sentences and intonation when reading based on end punctuation 3. Awareness that they have reading strategies and how they can help them 4. Excellent application of strategies: How to read with a partner, Check It and Paragraph Shrinking (Their favorite!) 5. Good progress with Retell and Prediction Relay 6. Still some students need reminders to track while reading; others do this automatically 7. Strong improvements in oral expression with all students 	<ul style="list-style-type: none"> • Strong evidence of perseverance – particularly when trying to sound out a word and doing paragraph shrinking. They really stick with it! • Overall – the knowledge that they have a strategy that might help leads to perseverance • Strong determination observed with retell as well • Less or almost no guessing • Still need reminders for tracking • By comparison to previous second grade groups – this group is reading more difficult material far sooner
Social / Emotional Tools	PRE LOI 1. I 2. I 3. I 4. I 5. I-II 6. I 7. I 8. I-II 9. I-II	<ol style="list-style-type: none"> 1. Blurting out when help is needed; Frequent interruptions of teachers and peers 2. Limited support shown to one another 3. Low frustration level / Frequenting heard - “I can’t do this!” 4. Lots of “checking out” due to overload 5. Sometimes plays well together, kind but not necessarily supportive of one another 6. Lack of awareness of each others’ challenges 7. No sense that a mistake is a learning opportunity 8. Generally unsure and lack of confidence (not all) 9. Occasionally considers their peers perspectives 	<ul style="list-style-type: none"> • Most students were very needy; limited resilience and perseverance • Many students cried easily when the going gets tough socially and academically
	MID LOI 1. II 2. II-III 3. III 4. III 5. III	<ol style="list-style-type: none"> 1. Strong bonds developing with PALS partners 2. Improved friendships and confidence trying new things 3. Changes becoming apparent; students seem more cooperative 4. New partners jumped up and hugged on another when announced 5. Responding well to partner coaching and asking them to Check It 	Post evidence is beginning to emerge

	6. II-III 7. II 8. III 9. II	<ol style="list-style-type: none"> 6. Strategies beginning to transfer to Core class (SC & SS) 7. More self-aware 8. Cheering for one another during PALS Awards Ceremonies 9. Really showing signs of working effectively with a peer 	
	POST LOI	<ul style="list-style-type: none"> • Students are expressing that they really love PALS time • Students are showing increased confidence in trying new things and in openness to learning new things • Our team of 12 second graders are showing sweet bonds • Positive response to peer correction and words of encouragement are frequently heard – “Good job!” • Tremendous improvement in oral expression; this has helped the kids tremendously in the social arena • Displaying much stronger social skills and empathy for peers 	<ul style="list-style-type: none"> • Strong independence shown in navigating social situations; use of strategies shown in settling conflicts • Stronger competence (grade level maturity) shown in dealing with one another (Lilah, Quinn, & Molly – great gains!)
Work Habits/ Learning to Learn Skills	PRE LOI 1. I 2. I-II 3. I 4. I 5. I 6. I 7. I-II 8. I 9. I	<ol style="list-style-type: none"> 1. No concept of setting up for class 2. Limited or no organizational skills 3. Many cannot complete class assignments without tremendous assistance 4. Loses focus frequently and needs constant redirection 5. Needs teacher to direct them almost all the time 6. Limited sense of responsibility; limited awareness of “cleaning up” 7. Resistant to home learning assignments; some students successful due to home guidance 8. Limited awareness of learning tools (head phones, fidgets, special chairs, etc.) 9. Frequently looking on neighbor’s papers for right answers 	<ul style="list-style-type: none"> • Limited perseverance to follow classroom procedures • Limited perseverance to complete tasks independently; very reliant on the teacher
	MID LOI 1. II 2. III 3. I-II 4. II-III	<ol style="list-style-type: none"> 1. Progress with independence is really beginning to show 2. Set up for PALS and putting materials away has been excellent (points help motivate) 3. Some arguing about starting points in the book for the day’s PALS lessons 4. Usually completes entire PALS lesson; better use of class time is carrying over to other classes 	Post evidence is beginning to emerge

	5. III	5. Students keep going even when a teacher is not watching	
	POST LOI		
	1. III	1. Students have demonstrated that they can learn from one another	<ul style="list-style-type: none"> • More focus and determination shown in LC, PALS time, and CORE • Improved social skills are helping them with the academic demands of increasingly more difficult work • Tremendous change in demeanor when taking Post tests – positive and confident • Third party observed – lots of great independence shown
	2. II-III	2. Great improvement in setting up and cleaning up – this is transferring to all classes	
	3. II-III	3. Strong sense of responsibility developing	
	4. III	4. Progress in independence has been amazing	
	5. III	5. Students are excited to share PALS strategies at home	
	6. I-III	6. Two parents are still struggling with seeing their child enthusiastic for reading; most parents are seeing strong reading progress	
	7. II-III	7. Some PALS partners are oblivious to distractions while engaging in PALS – strong determination	

Appendix F

THANKFUL FOR OUR PALS

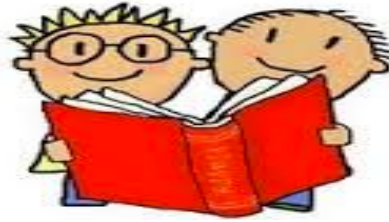
THANKFUL FOR OUR PALS – Home Learning

Dear Pals, Thanksgiving Break is a great time to SHOW your parents your PALS strategies. We hope you will read to your parents at least 2 times over the break. Check off the blue skills on Day #1. Check off the pink skills on Day #2. If you wish to challenge yourself – read one more day ☺

Please bring this sheet back to school on Monday, November 28th to earn your PALS points.

PALS SKILLS	Teach parents - Day#1 (Do the blue skills)	Teach Parents – Day #2 (Do the pink skills)	An Extra ☺ (optional)	Total Checks = PALS points
Partner Reading while tracking			Choose any of the skills you would like to show your parents again	
Check IT!				
Retell				
Paragraph Shrinking				
Prediction Relay				

Appendix G: PALS Parental Brochure



Peer Assisted Literacy Strategies are designed to foster independence and confidence in reading. When taught in our small Language Comprehensive groups through the Orton-Gillingham approach, students have an opportunity to master specific reading fluency and comprehension strategies. Once students have mastered the strategies, they will be given opportunities to work in pairs to practice the implementation of these strategies while motivating each other. Our LC teachers will closely guide all PALS sessions.

What reading strategies will be taught?

- CHECK IT STRATEGY – to support reading accuracy
- PARTNER READING – to enhance confidence and reading fluency
- RETELL – to enhance expressive language and comprehension
- PARAGRAPH SHRINKING - to enhance summary skills and targeting main ideas in reading
- PREDICTION RELAY - to enhance active, engaged reading and comprehension

Key School addresses the WHY, WHAT, and HOW that explains the challenges that dyslexic children face in learning to read efficiently and effectively. We know the brain base (*why*) that explains why some children struggle with the world of words. We know *what* components must be taught in an effective reading program. We know that the Orton-Gillingham multisensory structured language approach is *how* our children learn best. PALS will be an additional component that we will be adding to our second grade comprehensive literacy program that will increase the rate at which our students acquire confidence and independence in reading.

When will PALS instruction begin? In September we will begin teaching your students the PALS strategies in their Language Comprehensive classes. Towards the end of September our second graders will be partnered with their first PAL. In late October, your student will be partnered with another peer.

How much time during the day will students be engaged in PALS? Students will engage in their Peer Assisted Literacy Strategy sessions 3 to 5 days per week for approximately 20 minutes.

What additional benefits do we hope to gain from PALS?

Key School is always striving to empower our students to learn to apply their reading skills independently. PALS will offer students many opportunities to hone their independence while: 1) gaining confidence applying their skills as a reader and a reading coach, 2) improving

reading fluency through practice and being supported by their coach, 3) learning collaborative social skills by completing activities as a team while earning success points, and 4) helping students realize they are learning tools that will eventually set them free.

Appendix H

Driver Diagram with Process, Outcome, and Balancing Measures

