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The Influence of Multi-Sensory, Multi-Component Reading Intervention Strategies with Middle School Poor Readers

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THE INFLUENCE OF MULTI-SENSORY, MULTI-COMPONENT READING
INTERVENTION STRATEGIES WITH MIDDLE SCHOOL POOR READERS

BY

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requirements of the Degree of Doctor of Education
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2005

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ABSTRACT

THE INFLUENCE OF MULTI-SENSORY, MULTI-COMPONENT READING INTERVENTION STRATEGIES WITH MIDDLE SCHOOL POOR READERS

Background: All students must learn to read in order to be successful life-long learners. This essential skill is not being acquired by all students. If a student is not a proficient reader, school failure is not only likely, it is practically guaranteed.

Purpose: The purpose for the researcher was to evaluate the influence of a multi-sensory, multi-component reading improvement method for middle school students diagnosed with a reading disability in a suburban middle school setting.

Setting: Public suburban school district in upstate New York.

Subjects: Thirty-seven students with disabilities participated in Wilson Reading System (WRS) intervention and 47 other students with disabilities participated in Individual Learning Program (ILP) intervention. The same numbers of General Education Reading (GER) students were matched to each group from the general population of approximately 500 students in grades 8 and 9 (and grades 7 and 6 to achieve sample size).

Treatment: Students in WRS participated in a small group, proscribed reading program. Students in ILP also participated in small group reading instruction designed by special education teachers on an individual basis. Students in GER participated in a general reading program designed to assist students in meeting the New York State learning standards in ELA.

Research Design: This research is a non-experimental, retrospective/explanatory study: Action research, program evaluation

Data Collection and Analysis: The data were retrieved from the district database and limited to the data that were available at the time of the study. Independent samples t-tests were performed as well as calculations for effect size.

Findings: Students in ILP and WRS improved significantly when measured on subtests of the WIAT-II from 2004 to 2005. They performed lower than their typical peers on the 4th and 8th grade NYSELAA and the 4th grade report card. There was no significant difference in report card grades among groups at the 8th grade level.

Conclusions: The reading programs in place for students with disabilities (ILP and WRS) have an impact on student performance and should continue to be studied to determine if the impact is sustained and if the gap between students in GER and students in these two programs will be reduced. District leadership must carefully consider implementing Class Size Reduction (CSR) in the early grades to reduce or eliminate the reading gap that currently exists. More research is needed on the assessment programs implemented to measure student success as there are questions as to whether they measure what they purport to measure.

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I would be remiss if I failed to acknowledge the children. They are the reason why we work as educators. I was advised a long time ago by Dr. J. Thero, that if my work was guided by doing what I believe is right for kids then I will never go wrong. I have lived by that creed throughout my professional career. We all need to do what is right for the students. I only hope that this research may contribute to that purpose.

Many people in my life have guided me and supported me over the course of my pursuit of this degree and I am lucky to know them, work with them, and enjoy each one of them. I mention some of them here and apologize for those I failed to mention. Thanks go to my professional colleagues, especially Sharon who understands who I am and likes me anyway. She has always been the professional I want to be when I grow up! Thank you to the Board of Education of the Averill Park School District for your belief in me, support of my efforts in this program and your vote of confidence as we move forward.

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DEDICATION

To give anything less than your best is to sacrifice the Gift.--Steve Prefontaine

This work is dedicated to my parents

From the time I was a young child the pursuit of learning was encouraged through gentle prodding and the encouragement to take calculated risks (“try it before you decide if you don’t like it”). Formal education was presented as not only required but the greatest gift, besides unconditional love, that a parent could bestow upon a child. I am grateful for that gift. My father was an Italian immigrant who came to the United States and fulfilled his American dream. From his humble beginnings as the son of a shoemaker he became a barber. While working full-time he finished college and obtained his CPA, went to Law School and became a professor. He worked hard and demonstrated commitment to his family. A man born before his time, as he valued women, and believed that no matter what the dream, perseverance was always more important than intelligence. He believed that we are each important to the greater good, no matter how great or small the contribution, as long it was the best we had to give. I miss you Papa.

My mother has always been involved and caring. She proves to me daily that we are never too old to learn, to debate, to work hard, and to be forthright. Thanks Mom.

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CHAPTER I

INTRODUCTION

It is critical that all students learn to read in order to be successful life-long learners. This essential skill is not being acquired by all students. In 1998, a survey by National Assessment of Educational Progress (NAEP), as cited in Shaywitz (2003), revealed that “55 percent of the children of college graduates performed below proficiency levels in reading achievement in the eighth grade” (p. 30), with 26% at less than a basic competency level. Reading is a fundamental life skill and if a student is not a proficient reader, school failure is not only likely, it is practically guaranteed (Scott & Shearer-Longo, 2002; Snow, Burns, & Griffin, 1998). According to Denti and Guerin (1999) of the students who drop out of school, the most commonly shared characteristics are weak reading skills and grade-level retention. Students are expected to read in order to grasp new material. Slavin, Madden, Dolan, Walsh, Ross, and Smith. (1994) reported that if effective and complete remediation does not occur by grade 3 it may be too late to recover the reading skills needed for successful independent learning. A great deal of research has been done that supports early intervention with students in order to develop successful reading skills, promote a desire for life-long learning, and prevent school failure (Snow et al., 1998). Yet, some students still leave elementary school without this fundamental skill. Educators need to work to prevent this from happening;

however, the reality remains that some students will enter middle school and even graduate from high school unable to read.

Typically students must be able to read textbooks and other written material for meaning, independently, by the end of the elementary-school experience (grade 5). Students who are able to read material to learn are able to be involved in more self-directed learning to a greater degree than those who lack the skill, because they can participate more fully in their own education as middle school students. At the middle school level, teachers expect students to be able to read for meaning (Slater & Horstman, 2002). Ivey and Broaddus (2000) noted that “students are expected to read purposefully in the content area classes by the time they reach the middle grades” (p. 68). Often by middle school, reading instruction has stopped and students are left with a frustrating cycle of not learning. Some believe that students who reach this level without remediation may be doomed to failure, grade-level retention, and will eventually drop out of school and likely end up serving some jail time.

These students often experience school failure and have often been retained in at least one grade prior to entering middle school. Retention in a grade is highly correlated with drop out rates. The most common characteristic of students who struggle in school, or are retained or drop out is poor reading skill (Jimerson & Kaufman, 2003). Though research demonstrates that retention is ineffective, it is often used as an intervention for students experiencing school failure (Jimerson, Anderson, & Whipple, 2002). Poor reading skills and dropping out may lead to further social dysfunction for this individual (Denti & Guerin, 1999).

Reading is a complex skill. According to Tan and Nicholson (1997) “reading is a multi-component skill whereby the reader has to use a number of different cognitive processes involving word recognition, access of word meanings, parsing of sentences, semantic analysis of sentences and interpretation of overall text”(p. 276). Some students acquire this difficult and essential skill with typical instruction while others require intensive and direct intervention. Many students experiencing difficulty receive support during elementary school (Snow, Burns, & Griffin, 1998), yet some do not acquire the needed skills and move on to the next grade level un-remediated. Thus, reading is typically expected to be taught in elementary schools along with some remediation. Inevitably some students leave elementary school without this skill. They then become frustrated as they are expected to read textbooks and other materials independently in order to learn new information.

Context

This study occurred in a suburban middle school outside of the city of Albany in upstate New York. At the time of the study (2004-2005) the district was considered a mid-sized district with 3500 students. The geographic information revealed that the district was 140 square miles which included nine different towns. There were 56 buses that traversed the territory to transport all students to and from school. The district was comprised of four elementary schools (grades K-5). Kindergarten was a full-day program and class sizes in Kindergarten through second grade ranged from 17 to 22 students. Each elementary school had between 1 and 4 sections of each grade with a population range of 160 to 500 students. The schools were located in neighborhood areas. One middle school

(grades 6-8) of about 850 students was structured in teams at each grade level. The one high school had grades nine through twelve and approximately 1150 students. The middle school and high school operated on block schedules.

According to the district report card as found on the New York State Website (New York State Education Department, 2005), the district had a low population of students receiving free or reduced price lunch. It was financially sound, although it had struggled to pass local budgets due to increasing costs and reduction in state and federal aid. Demographics indicated that 98.5% of students were white and most met or exceeded the New York State Learning Standards in English/Language Arts (ELA) and Mathematics. The district had a high percentage of students identified as having special needs as almost 20% were identified as such.

The district leadership has concentrated its efforts on early intervention offering reasonably small class sizes at the Kindergarten through grade two level, as well the services of a reading specialist for small-group reading instruction (4 or fewer per group) daily for the weakest students. These students were identified by classroom teachers as needing support. They were then evaluated by the reading teacher and recommended for small-group support if they qualified for service based upon standardized test results. Reading services were available in the summer as well. The weakest students were identified in May of the school year and recommended to attend a four-week summer program in reading. This voluntary (but highly recommended) program was two hours per day and provided small-group instruction.

Despite these efforts, some students entered grade 6 with poor reading skills that still needed to be addressed.

Background of the Problem

Empirical Statement

Results on the New York State English Language Arts Assessment (NYSELAA) for 2001-2004 for students in the district being studied are shown in Table 1 (New York State Education Department, 2005).

Table 1

New York State English/Language Arts Assessment Results.

Year	N=Total	n= not at	% not at	N=Total	n=not at	% not at
	population	standard	standard	population	standard	standard
	Grade 4			Grade 8		
2004	236	64	27	283	100	35
2003	245	43	18	301	91	30
2002	253	49	19	267	99	37

Source: New York State Report Card 2005

School leaders and district personnel are concerned that the students not meeting the state standard will continue to struggle in school, be considered for grade-level retention (if it has not already occurred), and potentially drop out of school. It is the responsibility of school leaders to evaluate program effectiveness and to spend funds effectively to improve student performance and meet the mission of the district to maximize student potential. The mission statement reads as follows:

Mission Statement: Through a community partnership, the District will ensure opportunities for each person to maximize individual potential in the pursuit of

life-long learning by providing a safe, respectful and nurturing student-centered environment. (<http://www.averillpark.k12.ny.us>, 2005).

Normative Statement

All students need to read effectively and for meaning in order to be successful life-long learners. The school district must provide effective programming to achieve this goal. The district leadership has determined that 95% of students must be proficient readers by the 2006-2007 school year. This indicates that 5% or fewer would fail to meet the New York State standard in ELA. District leadership wishes to implement effective reading interventions to improve the reading skills of students to meet this goal.

Statement of the Problem

Students who enter middle school (grades 6-8) with poor reading skills are likely to be retained and eventually drop out of school if they do not receive effective reading intervention. This intervention must move a student from being a weak or non-reader to a student able to read new material for meaning (Ivey & Broaddus, 2000). Students must be able to understand textbooks and other complex written material independently. School leaders must evaluate reading interventions to determine the use of district funds to help students succeed.

Purpose of the Study

The purpose for the research was to evaluate the influence of a multi-sensory, multi-component reading improvement method for middle school students diagnosed with a reading disability in a suburban middle school setting.

Significance of the Problem

In this research project, this researcher studied 37 students receiving multi-component, multi-sensory reading instruction at the middle school level. These students were identified by the district's Committee on Special Education (CSE) as requiring specialized reading instruction. The students were pre-tested at the outset of receiving service using a standardized test designed to evaluate reading skills. They were assigned to reading groups based upon these test results and served by a trained reading teacher in an 80-minute block every other day all academic year. They were then tested again at the end of the year to assess their progress. The reading intervention provided was a multi-component, multi-sensory reading program that teachers were trained to use by an outside consultant. A description of the program is as follows:

The Wilson Reading System (WRS) is a research-based reading and writing program. It is a complete curriculum for teaching decoding and encoding (spelling) beginning with phoneme segmentation. It provides an organized, sequential system with extensive controlled text to help teachers implement a multi-sensory structured language program. The basic purpose of the Wilson Reading System is to teach students fluent decoding and encoding skills to the level of mastery. From the beginning steps of the program, it also includes sight word instruction, vocabulary, oral expressive language development and comprehension. (Wilson Reading System, 2003).

This reading instruction program has been implemented since 2001 in the school district. Though perceived to be effective, it was unclear as to whether students receiving this instruction made significant progress toward acquiring the reading skills necessary to

make them successful life-long learners. This evaluation-research study was designed to assess the effectiveness of this intervention at the middle school level, using the data already collected and available in district files.

Research Questions

1. What is the influence of a multi-sensory, multi-component reading instruction on the word identification skills of middle school students with a reading disability in a suburban middle school setting?

It was hypothesized that students would not improve word identification skills through this intervention.

2. What is the influence of a multi-sensory, multi-component reading instruction on the comprehension skills of middle school students with a reading disability in a suburban middle school setting?

It was hypothesized that students would not improve comprehension skills through this intervention.

3. What is the influence of a multi-sensory, multi-component reading instruction on fluency skills of middle school students with a reading disability in a suburban middle school setting?

It was hypothesized that students would not improve fluency skills through this intervention.

Definition of Terms

The following terms are relevant to this study and are defined for purposes of clarity.

Committee on Special Education (CSE) is defined through the Individuals with Disabilities Act (New York State Education Department, 2004) and Education Law, section 4402 and defined in the New York State Part 200 Commissioner's Regulations as being comprised of: (i) the parents or persons in parental relationship to the student; (ii) at least one regular education teacher of the student; (iii) one special education teacher of the student; (iv) a school psychologist; (v) a representative of the school district who is qualified to provide or supervise special education and who is knowledgeable about the general curriculum; (vi) an individual who can interpret the instructional implications of evaluation results; (vii) a school physician; (viii) an additional parent member of a student with a disability residing in the school district; (ix) other persons having knowledge or special expertise regarding the student; (x) if appropriate, the student.

Comprehension in reading is the ability to understand what is read. All components of reading (decoding, phonemic awareness, fluency, etc.) must be developed in order for students to become proficient readers (Pressley & Allington, 1999). Comprehension does not automatically follow even if a student is reading fluently. If a student decodes effectively and understands the relationship between letters, sounds, and words, fluency should follow. Comprehension requires another level of understanding. This concept may be clearly explained using an example. If an English-speaking individual is taught the sounds that letters of the alphabet make in Spanish and how words are formed, he or she may be able to read Spanish words from the printed page

with great fluency. However, without an understanding of the Spanish language and a developed understanding of Spanish vocabulary the printed words will not be understood. This is similar to students who are simply taught to decode words without completing the instruction of comprehension through development of vocabulary and knowledge. One may be able to read the words presented in a textbook for Physics, but not have the ability to understand the ideas presented without further instruction and a broader explanation of the concepts. This may also be true for students experiencing difficulty with reading.

The skill of *decoding* is using the knowledge of phonics and phonemic awareness to blend sounds to utter a word (Salinger, 2003; Snow et al., 1998; Vellutino, Scanlon, & Tanzman, 1994).

The term *dropout* refers to students who leave school without graduating from high school. “A dropout is defined as any student who left school prior to graduation for any reason except death and did not transfer to another school or program leading to a high school diploma or high school equivalency diploma” (New York State Education Department, 2002).

Fluency or Level of Fluency refers to the ease one has in reading individual words together as in the reading of a paragraph. “Fluent oral readers show expression and naturalness; their reading flows smoothly” (Salinger, 2003, p. 80). If a student struggles with many words within a paragraph they are also losing the ability to comprehend the material because each word is deciphered as a separate entity. Therefore fluency is poor and comprehension is as well.

In the present study, *middle school students* are students in grades 6-8. This is a student between elementary and high school and also approaching adolescence (Moje, Young, Readence, and Moore, 2000)

Phonemic awareness is an understanding that what is heard is individual sounds which blend to make words. Phonics is the understanding of the smaller sound units that make up words. It is the understanding of the alphabet in terms of the sound made by each letter of the alphabet and the sounds made by blending letters of the alphabet (Salinger, 2003) “An awareness that spoken language can be analyzed into strings of separable words” (Snow et al., 1998, p. 15). The relationship between these sounds and how they relate to print must be taught. Oral language seems to be a natural or biological process. Children seem to naturally develop the ability to talk as they are simply exposed to an environment where speaking occurs. Some believe that reading is not a natural process. Though some children acquire reading skills fairly easily, the relationship between the spoken word and the printed word must be taught (Fletcher & Lyon, 1998). The degree to which phonemic awareness must be taught varies depending upon the ability of the student. It appears that this instruction in phonics, phonemic awareness, fluency and comprehension must be explicitly taught to students who demonstrate poor reading ability even as young as first or second grade (Slavin et al., 1994).

Retention refers to “the practice of requiring a student who has been given a grade level for a full school year to remain at that level for a subsequent year” (Jimerson, 2001, p. 420).

Weak/Struggling Readers are students with at least average intelligence who read three or more years below grade level and are often disengaged from reading (Ivey,

1999). These students are often diagnosed as having a learning disability, tend to be described as unmotivated, and likely to have little confidence in their own ability (Guthrie & Davis, 2003; Moje, Young, Readence, & Moore, 2000). According to the U.S. Department of Education (2001), 50% of students with disabilities are classified as learning disabled and of this group almost 80% are impaired in reading.

Word Identification follows decoding and is expanded to include those words that students come to know on sight (Snow et al., 1998). Students may recognize words and be able to read them but fail to understand them.

Delimitations and Limitations

The study was delimited to one middle school in a suburban school district in upstate New York. The study was also delimited only to students identified to participate in the specific reading intervention in grades 6-8 during the 2003-2005 school years. The data collected are normally collected data and not sought specifically for this evaluation which was done at a point in time. The data collected were matched based on students participating in certain programs rather than from students assigned to instruction randomly. The program evaluated was implemented by teachers trained in WRS, special education, and general reading.

This program evaluation was limited to accessing the information available in a participating student's record. No new test data were generated for this evaluation. Students were assigned to participate in this program independent of this evaluation and were tested on standardized tests administered by the teachers implementing the program. There was no researcher control over assignment of intervention as this was done by the CSE. The lack of experimental design and the sample size limit the ability to generalize

the results. Another limitation is the potential of researcher bias as the researcher was an administrator in the district at the time of this study. The validity of the study is limited to the validity and other psychometric properties (e.g., reliability) of the instruments used and the accuracy of the teachers using those instruments.

Summary

The purpose of this evaluation was to determine the influence of a multi-sensory, multi-component reading improvement method on reading levels middle school students diagnosed with a reading disability in a suburban middle school setting.

Chapter I provided an introduction to the problem of some students leaving elementary school as weak or non-readers. Reading ability is critical to life-long learning and school success. Though emphasis is placed on early intervention in an effort to teach students to read before exiting elementary school, it is not always successful.

Chapter II discusses the research and literature related to general reading skill acquisition and specifically related to adolescent literacy. Chapter II also addresses the student outcomes often associated with reading failure.

Chapter III discusses the methodology used in this program evaluation. The data were collected from existing data found in the student database SASI, as well as IEP Direct, both used within the district studied.

Chapter IV describes the data and statistical analyses used on these data.

Chapter V provides a summary of the findings, conclusions and implications of these findings as they pertain to the problem and research questions. It also provides recommendations for practice, policy and for further research.

CHAPTER 2

RESEARCH AND LITERATURE REVIEW

This chapter provides a review of the research and literature related to the importance of reading ability and how children acquire this ability. The effects of unremediated reading problems including retention and dropping out of school are also discussed. The review includes early reading instruction and intervention including the impact of class size and various instructional approaches. The literature and research related to why most children acquire this important skill while some fail to do so are also reviewed. The research and literature related to middle school poor/non-readers and specific interventions evaluated in this study have been discussed and a conceptual base or thesis for the study has been presented.

Importance of Reading Ability

Reading is a fundamental skill. Without this essential skill intact students will not be able to meet the demands of the greater society. Historical research has focused on early intervention initiatives. According to Bursuck, Munk, Nelson and Curran (2002), “having all students read independently and well by the end of third grade is a national goal that has now spanned two presidencies” (p. 4). Unfortunately not all students do read independently by the end of third grade and 75% of those who do not will remain poor readers throughout their schooling (Francis, Shaywitz, Stuebing, Shaywitz, and Fletcher, 1996; McCardle, Scarborough, & Catts, 2001; Slavin et al., 1994). According to Fletcher and Lyon, in 1998 the National Institute of Child Health and Human Development (NICHD) had done extensive research over the past 35 years on reading

skills and the acquisition of reading by young children. The failure to acquire adequate reading skill was a public health concern noted by NICHD.

According to Scott and Shearer-Longo (2002) academic failure, specifically reading failure is a “major predictor of larger failures” (p. 168) including grade-level retention, dropping out and juvenile delinquency (Jimerson & Kaufman, 2003). Students who are retained generally share similar characteristics; most often poor reading ability is present. Other characteristics of retained students often include low socio-economic status, learning problems, minority status, gender (usually male though pregnancy is also a factor for girls), and limited English proficiency (Martin, Tobin, & Sugai, 2002). The similarity of characteristics (minority status, economic status, etc.) may indicate that poor reading ability is an issue of equity that must be addressed. “Reading is a crucial tool in the effort to build equity and excellence in society as a whole” (Jackson & Davis, 2000, p. 87). This difficulty can generally be traced to early schooling, which is another argument to support aggressive early intervention efforts.

Student Acquisition of Reading Ability

The acquisition of reading skill is a complex process. Typically, children learn to speak and to understand spoken language within the first three years of life. This ability is the precursor to learning to read. As children mature they begin to realize that what is spoken is made up of individual sounds. Early instruction, whether offered at home or in preschool, begins with teaching that the sounds are represented by the letters of the alphabet. During the preschool years, children continue to learn the names of the letters, and that the letters have sounds or phonemes. As the child begins to expand this

knowledge of sounds, and begins to form words, he or she is on the way to “breaking the code” known as reading. Reading instruction is deliberate and complicated and blends several processes. It is taught early in a student’s elementary career through direct instruction and practice. The student able to read effectively acquires a variety of skills simultaneously including phonological awareness, decoding, word identification and reading comprehension (McCardle, Scarborough, & Catts, 2001; Shaywitz, 2003). Reading for meaning is more than knowing letters and the sounds that they make. It goes beyond blending sounds to form words. Students must develop a sight vocabulary otherwise they will laboriously read each word every time they see it as though it were a new word. They must also build background knowledge so they have a context for what is being read. Shaywitz (2003) described the process as:

The aspiring reader must build his reading vocabulary so that eventually he can read complex, long, or unfamiliar words. Since he has stored each letter that has been transformed into a sound, he has accumulated within his brain an entire storehouse of letter representations....A skilled reader has a huge internal dictionary of stored words. (p. 104)

One is considered a skilled reader when he or she is able to read for meaning independently. In typically developing children, reading skills plateau at about 15 years of age (Francis et al., 1996). This does not mean that skill improvement is not possible after this age, but it is an indication of the typical reading acquisition timeline.

Early Reading Intervention Strategies

It has become evident that reading is the key to educational success. It is also evident from several sources, including the publication of *A Nation at Risk* in 1983 and the results of the work of the National Reading Panel or NRP (2000) that the United States government considers the education of its youth important and unsuccessful in many cases. Though the work of the NRP is disputed as flawed (e.g. Allington, 2002), it highlights the level of interest from the government on this issue. The Federal government has become increasingly directly involved in local education policy through the implementation of The *No Child Left Behind Act* (NCLB, 2002). Although NCLB is the latest iteration of the Elementary and Secondary Education Act (ESEA or PL 89-10) passed in 1965, it has more impact on local educational policy than any other education legislation in American History. Compliance with NCLB ensures that federal funding will be released to the complying entity. The expectation for improved performance increases annually. “As part of the accountability provisions set forth in the law, *No Child Left Behind* has set the goal of having every child make the grade on state-defined education standards by the end of the 2013-14 school year” (United States Department of Education [USDOE], 2004). Educators must work to improve student performance or risk loss of federal funding.

The mechanism for determining whether districts meet the expectations set forth through NCLB for assessing progress is not defined specifically. Each state is charged with designing and implementing standardized tests that measure student performance. New York State has implemented many assessments to comply with NCLB as well as state mandates. In addition to NYSELAA there are assessments in math, social studies,

science, etc. There are high school exit criteria exams in each core area, called Regent's exams, that have been in place for many years; and as of the 2005-2006 school year, students will be tested in at least math and ELA in grades 3-8 annually. Given the demand for assessment to measure school performance, it is critical that the assessment measure what it purports to measure reliably. The NYSELAA is described in detail in this regard in Chapter III; however, Ike (2004) questioned the assessment for a variety of reasons including the point in the school year it was administered over the last 5 years (May, March, January), its lack of correlation with other standardized tests, and the changing rigor of the test on an annual basis.

In addition to testing students to determine school performance, NCLB and other federal funding mechanisms also demand "scientifically based" programs in order to receive funding. Thus, much research has been published defending the implementation of programs deemed successful; most of these programs target early intervention.

Research on effective early reading intervention for children is abundant. Lyon (1998) reported that the NICHD alone had supported research on over 10,000 children resulting in the publication of 2,500 articles and 50 books and included longitudinal, experimental and cross-sectional studies. The evidence suggests that remediating reading problems early in the education career of a child is not only effective but can prevent long-term educational problems. Examples of "research based" early intervention programs exist and some are more successful than others.

Marie Clay developed a now famous intervention program, "Reading Recovery" (RR). or RR. This program involves intensive, short term (12-14 weeks) individual tutoring of young students (Clay, 1988). Research indicates that most students

demonstrate improved and sustained ability to read after RR intervention (Moore & Wade, 1998).

Success For All (SFA) is another early intervention program (Slavin et al., 1994). Students in the primary grades experiencing reading problems receive additional instruction as they need it. The school personnel are reorganized to be available as tutors during a daily reading block. A family support team is also part of the design of this model. Results of research conducted on SFA have been challenged (e.g., Pogrow, 2000). Borman, Slavin, Cheung, Chamberlain, Madden and Chambers (2005) conducted a randomized, experimental study which revealed little gain for students as word attack improved but letter identification, word identification and passage comprehension did not improve.

Small class size demonstrated in Tennessee in the Student Teacher Achievement Ratio (STAR) experiment and other studies, such as Student Achievement Guarantee in Education (SAGE) in Wisconsin (e.g., Molnar, Smith, Zahorik, Palmer, Halback & Ehrle, 2000) have identified successful organization for students in grades K-3 (Finn & Achilles, 1990, 1999; Finn, Gerber, Achilles, & Boyd-Zaharias, 2001). That is, class sizes in the range of 13-17 provide a strong educational foundation, including well developed reading skills that remain intact throughout the child's schooling.

There is often a gap between what research indicates is effective intervention, what may be the latest fad, and what is actually done in the classroom (Gersten, Vaughn, Deshler, & Schiller, 1997). For example, Slavin et al. (1994) described "Success for All" or SFA, to educators in 1994 in an issue of *Phi Delta Kappan*, a journal readily available to educators. According to Slavin, the research reported that "we have

knowledge we need to create schools in which every child will learn” (p. 639).

Meanwhile, a follow-up article in that same journal and in others (Greenlee & Bruner, 2001; Pogrow, 2000) questioned SFA’s claims for success. They argue that vendors of programs may fund the “research” on new programs which makes the research inherently biased. “The program that benefited most from this trend is Success for All (SFA), a schoolwide program developed by Robert Slavin and his colleagues at Johns Hopkins University, where he co-directs a federally funded research center.” (Pogrow, 2000, p. 596).

Class size reduction (CSR) has been researched extensively. Over the long term CSR has clearly demonstrated effectiveness on student learning (Achilles, 1999; Finn et al., 2001). CSR funding has been available for some schools that qualify; yet reduced class size does not benefit a particular vendor. Perhaps this explains the lack of large scale, national CSR implementation (Achilles & Finn, 2000) even though CSR was specifically defined as a federal school-improvement initiative by 2000.

Grossen (1998) described a lack of research as well as the impact of poor research on the educational community:

The education profession in America differs from other highly successful professions in one very significant way. Most other professions ensure to some extent that the procedures shared across the profession actually work to increase the success of all members of the profession. To ensure that they work, procedures are first tested in some way. These shared procedures form the profession knowledge base of the profession...Education is an unfortunate exception to this pattern of

professional behavior. Teaching procedures are often widely disseminated without any evidence that the procedures work. (pp. 23-34)

Students continue to struggle to acquire effective reading skills despite early intervention efforts. A variety of factors influence the inconsistencies found in early intervention efforts. These inconsistencies could be largely attributed to unsubstantiated claims of program effectiveness, teacher differences, funding inconsistencies, differences among children, and the inconsistent use of research based programs, etc. (Bursuck et al., 2002). Again, despite the research to demonstrate that students will improve through the implementation of effective early intervention programs, students may still leave elementary school ill equipped for the rigors of middle school.

Why Do Some Children Fail to Learn to Read

Apel (1999) stated “reading will be a formidable challenge to 60% of children entering US schools with 20-30% of those children finding reading to be the most difficult challenge of their academic careers” (p. 228).

Reading difficulties involve a person’s inability to decode words and comprehend what is read (Shaywitz, 1996). Effective reading instruction includes teaching students to decode words and comprehend the written material (Vellutino, Scanlon, & Tanzman, 1994). Children must learn to understand how letters grouped together form words and how those words sound and what they mean. Once this process becomes automatic the child is on the way to being a fluent reader and comprehension hopefully follows if taught in context (Fletcher & Lyon, 1998).

Unfortunately, regardless of intellectual ability, instruction, or the desire to learn, some children do not develop effective reading skills. According to Shaywitz (2003), “the problem is a linguistic one” (p. 40). The language center of the brain is deficient in its ability to process written language. This deficiency may manifest itself in different skill weaknesses. Children may experience difficulty at the phonological level, vocabulary level, grammatical level or any combination of areas (Vellutino et al., 1994)

The Effects of Unremediated Reading Problems in Middle School

Un-remediated reading problems experienced by students as they enter middle school will be problematic for these youngsters. Middle school students are expected to read textbooks and other material independently, for meaning and to learn (Ivey & Broaddus, 2000). Without this vital skill they are likely to be, or may have been, retained in a grade at least once and eventually will drop out of school. Students should be reading for meaning by the end of fifth grade but some do not, and many middle school teachers are reluctant or not specifically trained to teach reading (Ivey & Broaddus, 2000); thus, these students continue to be at risk for failure and dropping out.

Much of the research conducted in reading focuses on the elementary school years, particularly through grade three. Research strongly supports teaching reading at this level to the point of proficiency to prevent student frustration, to enhance the desire for life long learning and to avoid the consequences of un-remediated problems such as retention and dropping out (Slavin et al., 1994; Vellutino et al., 1994). The remediation of poor/non readers at the middle school level is an area that pleads for greater investigation because, despite what research indicates about the need for early intervention, the

statistics indicate that students continue to enter and exit middle school with reading ability below basic proficiency (Donahue, Voelkl, Campbell, & Mazzeo, 1998).

Despite the research on the effects of retention on student success, students may still be retained (another example of research not being used in practice). This does not usually improve the student's reading ability. Grade retention has also been correlated with poor outcomes for students including dropping out, delinquency and other societal ills (Jimerson & Kaufman, 2003). Drop outs are more likely to become dependent on government programs and suffer from health problems as well as have negative interactions with law enforcement (Martin, Tobin, & Sugai, 2002).

Poor reading skills that remain unremediated may also result in referral to special education. Students who have reading issues may be discovered in the early grades (Bursuck et al., 2002). Yet, if this reading difficulty is not addressed aggressively and successfully (Slavin et al., 1994) the student will continue to struggle. The gap between expected reading level (based upon age) and actual reading skill widens and the student falls farther behind same aged peers. These students are often diagnosed with a learning disability. Approximately 50% of the students in special education are diagnosed with a learning disability, and of those 80% have problems in reading (United States Department of Education, 1997). These reading difficulties relate directly to students being retained in a grade and eventually assigned to special education (Lyon, 1996). Students who enter the special education system do not typically exit the system. The future of these students is often grim. The placement is often long term and the likelihood of dropping out of school increases (Denti & Guerin, 1999).

Gaffney, Methven, and Bagdasarian (2002) found that students who experience reading problems after elementary school will continue to struggle. According to the 1998 National Assessment of Educational Progress Report (NAEP), 38% of grade 4 students read below the basic level, 26% of grade-8 students read below the basic competency level and 23% remained below this level at grade twelve. These statistics show that despite the research that indicates that early intervention is critical, over 25% of students leave middle school as poor or non readers and little changes as they leave high school.

Strategies to Remediate Middle School Poor/Non-Readers

Once students enter middle school, teachers expect them to be able to read to learn. Specific reading instruction, namely instruction in phonemic awareness, fluency, and comprehension, while also building vocabulary has stopped (Lebzelter & Nowacek, 1999; Scanlon, Deshler, & Schumaker, 1996). When students lack phonemic awareness they typically struggle with word identification. They become frustrated with the process of decoding which then causes poor fluency and ultimately impacts comprehension. However, instruction that focuses only on decoding and word identification is not enough and ineffective, especially at the middle school level. Instruction must be complete and address all components essential to the cognitive reading process (Ivey & Broaddus, 2000; Salinger, 2003; Slater & Horstman, 2002).

Assistance in the form of intensive tutorial intervention or direct student instruction, with an emphasis on reading and writing skills together helped students make remarkable progress. It is important for instruction in reading in the middle school to

include decoding and word identification as well as fluency and comprehension. The acquisition of reading ability is multifaceted and involves several cognitive processes (Tan & Nicholson, 1997).

A study conducted by Eckert, Ardoin, Daisey, and Scarilla, (2000) concluded a combination of interventions was most successful in increasing fluency and comprehension. Salinger (2003) discussed five major components of reading acquisition especially necessary for older poor readers: fluency, phonemic awareness, phonics, vocabulary, and text comprehension. The type of reading instruction that occurred in the earlier grades is no longer appropriate for students at the middle school level. Students with poor skills at the middle level must be instructed by addressing the cognitive processes involved in the acquisition and improvement of reading. They must be involved in their own learning (Salinger, 2003; Slater & Horstman, 2002; Tan & Nicholson, 1997). Many skills need to be addressed simultaneously and students must feel successful as they move through the process. This multi-sensory, multi-component approach to reading is critical to the middle school student who reads poorly. The concept of teaching all areas simultaneously while using a multi-sensory approach deserves further investigation. In this study the researcher will investigate this approach to determine the relationship of multi-sensory, multi-component reading instruction to reading skill improvement.

Chapter III provides the methods and procedures used in this program evaluation.

CHAPTER 3

DESIGN AND METHODOLOGY

In this chapter the researcher describes a program evaluation designed to assess the influence of a specific multi-sensory, multi-component reading improvement method, the Wilson Reading System (WRS, 2003) used for middle school students diagnosed with a reading disability in a suburban middle school setting. This program has been in place since 2001. The Committee on Special Education (CSE) is responsible for determining if students have an educationally related disability in reading. The CSE is a multidisciplinary team as described through the Part 200 regulations of the Commissioner of New York State (see definition of terms in Chapter I). According to the regulations, each student must be evaluated individually using thorough valid and reliable diagnostic tests. These tests are administered by appropriately licensed and certified staff. The CSE reviews all information about a particular student and assigns intervention strategies. Students involved in special education reading intervention programs receive pre-and post-testing as part of the program to which they are assigned.

In the district in this study, the CSE may assign students to WRS or to Individual Learning Program (ILP) reading. Typical remaining students (non WRS and non ILP) are randomly assigned by the building administrator to General Education Reading (GER). Students in WRS do not participate in ILP or GER; students in ILP do not participate in

WRS or GER; and students in GER do not participate in WRS or ILP. Thus, each group of students is mutually exclusive.

The students who are the focus of this study received WRS reading intervention at the middle school and were evaluated individually over time to determine the effectiveness of this instruction. Complete data were available for thirty seven students who received WRS instruction at the middle school level from January 2004 to January 2005. This chapter includes descriptions of the population of the study and the evaluation design. An evaluation done as action research is used to determine if the program in place is effective (e.g., $p \leq .05$) in improving the demonstrated reading skills of middle school students receiving specific intervention.

A program evaluation is designed to determine if the “intervention is effective in attaining the desired goals or benefits” (Rossi, Lipsey, & Freeman, 2004, p. 3). The desired benefit is improvement in reading skills for the students involved in the WRS when compared to their grade/age-level peers participating in ILP as well as compared to the results achieved by matched (except by special education placement) students in GER.

Students in WRS receive instruction in 80 minute blocks individually or in small groups (4 or fewer) with a trained teacher. The WRS program is designed in 12 steps that build upon one another with continuous reinforcement. Each step and concept taught builds upon the previous steps. The teacher assesses progress and moves the student to the next level once skills are gained. The student does not advance to the next level until the end-of-level assessment is completed successfully.

Students in ILP receive instruction in 80 minute blocks in individual or small-group settings. The ILP reading class is a special education reading program that does not have a specialized curriculum. The classroom teacher is assigned students with varying needs in the area of reading and the teacher designs instruction based upon the weaknesses of each student as outlined in the Individualized Educational Plan (IEP).

The GER is classroom instruction that occurs in 80 minute blocks with large groups of typical students (22-29 students) at each grade level in the sixth through eighth grades. The GER curriculum is designed to include literary elements without instruction in phonics, decoding, or fluency.

Educators must determine effective methods to provide reading instruction for middle school students who are unable to read for meaning. If students are unable to gain meaning from text, they will likely experience school failure, grade retention and eventually drop out of school (Denti & Guerin, 1999).

Regardless of the program followed (WRS, ILP, GER), students are expected to score proficient or higher on the NYSELAA. According to NCLB, all students, regardless of any other factors, must be proficient in ELA and math by 2013. Proficiency is measured by the state assessments including the fourth and eighth grade NYSELAA. The format for the NYSELAA at the fourth and eighth grade level has been similar each year over the past 5 years. NYSED (2004) reports that the test is designed based upon the New York State learning standards for ELA. Both levels of assessment are purported to measure reading, writing, listening and speaking skills for information, understanding, literary response and expression, critical analysis and evaluation as well as social interaction.

The eighth grade test is administered in 2 sessions and includes multiple-choice questions and constructed responses (short and extended responses). Scoring is derived to provide a listening score (0-6 points), an independent writing score (0-3 points), and a writing mechanics cluster. Final scoring is converted to a scaled score from the raw score and ranges from 527 to 830 points. Finally the scores are placed on one of four levels (1-4). Levels 1 and 2 (527-696) indicate that the student did not meet the standards. Level 3 (697-736) indicates that the student meets the standard (proficient) and level 4 (737-830) indicates that the student exceeds the standard (distinguished).

The fourth grade assessment is similar although it occurs in 3 sessions and cutoff scores may vary. However, the scale-score conversion results in the same 4-level division with levels 1 and 2 below the standard and 3 and 4 at or above the standard.

These assessments are part of the required assessments administered as New York State's response to NCLB. Thus, it is critical that students are successful because the success of the district, and in turn funding, are based upon student achievement on these measurements. Given the high level of importance placed upon these assessments, it is important to understand whether they assess what they are purported to assess and whether they are reliable.

Research Design

The results obtained from students receiving WRS were compared to results from students who had been assigned to ILP reading and other students in the GER intervention in a matched-sample design. Results of this evaluative study will assist the

district in allocating resources to programs that significantly improve the reading skills of students with disabilities.

This evaluation was a non-experimental study as there was no random assignment of subjects to groups or manipulation of treatment. Johnson and Christensen (2004) described nine types of research and the design used in this study is type seven, retrospective/explanatory. It is retrospective in that the researcher attempted to look at an observed outcome (reading skill), and explanatory as the researcher attempted to establish if a proscribed reading method (WRS and ILP) had influence on the reading skill of students involved. In this study, the researcher evaluated the use of multi-sensory, multi-component reading instruction to help students identified by the CSE as needing this instruction to reach the reading level of the average of their grade-level peers. Students participating in WRS or ILP instruction were of at least average intelligence and reading three or more years below grade level. The students were identified as having an educationally related disability.

All data were retrieved from student records through the use of the student database system, the assistance of the CSE chairperson, and a database staff member. The data for analysis did not contain any personally identifiable student information. Confidentiality was built into the process as the necessary information already existed in student files in the district database and was provided to the researcher only as numerical data in groups with independent variables designated. The researcher obtained these data with names and other personally identifiable information redacted so as to maintain confidentiality of students.

The data were obtained from the records of students in grades 6 through 9 with the focus on students in grades 8 and 9, then on students in grades 7 and 6 in order to obtain a representative, matched sample of an adequate size. Four groups were operationalized for this study. The two treatment groups were students who were in WRS and students in ILP. The two comparison groups were students in GER. Data for the remaining GER students (not in WRS, ILP, or selected for the matching groups) were used as a benchmark to provide an average reading level of grade-level peers.

Student data were grouped based upon the type of instruction that the student received over the past two school years (WRS or ILP during 2003-2004 and 2004-2005) and compared to students in the GER program. The data exist in the district and were computer generated into groups by student number. The student data were reviewed and GER students were matched to the WRS and ILP groups based upon as many variables as possible in order to provide a matched comparison group for WRS and another matched comparison group for ILP.

Variables

For this study, independent variables included gender, age, grade level, ethnic affiliation, disability (yes/no), socio-economic status (SES) free/reduced lunch yes/no. This information is shown in Table 2.

Table 2

Independent Variables Used to Match Students in ILP and WRS to GER Students.

Gender	Age	Grade Level	Ethnic Affiliation	Disability	SES (free/reduced lunch)
Female=1	Date of birth xx/xx/xx	6,7,8,9	White=1	Yes=1	Yes=1
Male=2			African American=2 Hispanic=3 Asian=4	No=2	No=2

Dependent variables included scores on a standardized reading achievement test prior to and post instruction using the Wechsler Individual Achievement Test-II (WIAT-II). The Reading Comprehension, Pseudoword Decoding and Oral Expression subtests scores were collected and analyzed as group data, as were results from the New York State ELA assessment (NYSELAA), and final ELA report card grades. The dependent variables are shown in Table three.

Population

The 37 students participating in WRS intervention were diagnosed and assigned to groups independent of this study. Other students (n=47) participating in the ILP intervention were assigned in the same manner. The same number of GER students were matched to each group from the general population of approximately 500 students in grades 8 and 9 (or grades 7 and 6 to achieve sample size).The WRS and ILP students were taught by teachers to address deficiencies diagnosed by and served through the district’s CSE.

Table 3

Dependent Variables.

WIAT-II results Reported as percentile 0-99	Final Report card grades for grades 6,7,8,9	NYSELAA Grades 4 and 8
Reading Comprehension	Reported as score 0-100	Reported 1-4
Pseudoword decoding	0-64 failing	1,2 below standard
Oral Fluency	65-84 passing 85-100 mastery	3,4 at or above standard

Instrumentation

The WIAT-II (2002) is a comprehensive individualized achievement test that may be used with individuals 4 through 85 years of age. It may be used for diagnostic purposes as well as to assess reading achievement. The test consists of nine subtests. The results of three subtests of the WIAT-II were used for this study because students are tested by CSE using only three subtests. The subtests include “Reading Comprehension”, “Pseudoword decoding”, and “Oral Expression”.

Validity and Reliability of the Instruments

Validity refers to whether the instrument measures what it is expected to measure. Reliability refers to whether the instrument will yield consistent results on repeated measures (Babbie, 2002). As described in the testing manual, the WIAT-II (2002) has been determined to be valid and reliable through the use of standardized procedures including test/retest reliability estimates (individual compared to himself or herself on repeated administrations). The test-retest stability estimates range from .94to.99.

Concurrent validity (results of this test compared to other standard measures which are already considered valid and reliable), construct validity (how well this instrument measures what it purports to measure) and content validity (the instrument covers the range of necessary material) have been established (2002). This assessment has been nationally normed on both age and grade-based samples. There are two comparable forms of this test so students will not be familiar with specific questions on the post test after having taken the pre test. The internal consistency coefficient is high (above .85). The pre-test for students occurred in the 2003-2004 school year and the post-test occurred during the 2004-2005 school year. The testing was completed by teachers trained in the administration of the WIAT-II.

In addition to WIAT-II testing information, students also participated in New York State assessments in a variety of subjects. For purposes of this evaluation, the results of the fourth and eighth grade NYSELAA were used. This test is administered to all students in grades 4 and 8 and at the end of grade eleven. Students must pass the high school test in order to graduate. The test is scored at the fourth and eighth grade levels on a rubric with levels 1 and 2 indicating that the student did not meet the standard and levels 3 and 4 indicating that the student met (level 3) or exceeded (level 4) the standard. The fourth and eighth grade NYSELAA is administered over three days in January of each year. The tests are designed to measure reading ability, comprehension, and writing skills as determined by the New York State Learning Standards.

The High School exam is administered in January and June of each year. Students typically take it at the end of the eleventh-grade year and they may take it as many times as needed in order to pass the exam. A passing score is required for graduation. The test

is scored conventionally (1-100), and 65 is a passing score. The scores are also placed on a rubric in the same way as the fourth and eighth grade tests with a score of 1-64 indicating levels 1 and 2 and 65-84 is level 3 and 85-100 is level four.

The New York State testing program is administered through CTB McGraw-Hill (CTB) by contract with the NYSED (NYSED, 2004). The NYSELAA test is designed to be aligned with the New York State Learning Standards. State policy requires that all students be tested in grades 4, 8, and grade 11 to graduate. Some exceptions are made for students with severe disabilities; however, students included in this program evaluation were all eligible for this assessment.

Each assessment is developed in cooperation between CTB and NYSED and is reviewed by committees of teachers from around the state. The test is field tested and samples are calibrated. Items are also evaluated for bias. According to NYSED (2004), reliability indicates the confidence placed in the consistency of an individual's test scores over time. The "reliability coefficient is the correlation coefficient between scores on parallel tests and is an index of how well scores on one parallel test predict scores from another parallel test" (p. 17). On the eighth grade assessment the statewide coefficient was .88 for 2002 and in 2004 was .90 has ranged as high as .94 in other years. The 4th grade assessment is similar with a range from .87-.90. The state defends this level of reliability because the tests are replicable as noted by Kadamus (2001), "The validity and reliability studies are conducted repeatedly with each test administration and are, therefore, replicable. Because they are replicable, they are defensible" (p. 14). The reliability and validity of the NYSELAA are questionable as discussed in Ike (2004), yet the performance of middle school students across New York State is currently measured

based upon this assessment. Therefore, it is important to understand student performance relative to this assessment, as well as to question its psychometrics.

Data were collected from the student database by student number as the results of the NYSELAA at grades 4 and 8 grade are imported electronically via student number. WIAT-II data were also recorded into the database and were retrieved as needed.

Intervention

The Wilson Reading System (WRS, 2003) is a 12-step program based the Orton-Gillingham method of reading and writing. The Orton-Gillingham “methodology utilizes phonetics and emphasizes visual, auditory and kinesthetic learning styles” (Orton-Gillingham, 2000, Orton-gillingham.com/Orton-gillingham2.asp). WRS was designed to develop and advance a student’s current reading and spelling skills to a mastery level. It was originally designed for students with dyslexia and other language-based learning disabilities. It goes beyond phonics instruction and moves students toward well developed comprehension skills according to program developers (WRS, 2003).

Students in this study were instructed by middle school reading teachers who had been trained to implement this program. The training consisted of a three-day, 18 hour course. The instructor of the teachers reported that teachers were trained in WRS meticulously to its form, and though teachers bring different styles to implementation, they implemented the intervention as designed.

On-going observation and refresher courses occur throughout program implementation conducted by the same WRS instructor. The researcher for this project interviewed the WRS certified trainer and discussed if teachers were implementing the

program as designed and maintaining program integrity. The certified trainer was impressed with the teachers implementing the program as they have continued to use it properly since 2001 when the program began. This same WRS instructor has been reviewing teachers in the classrooms with students periodically (3 to 4 times per year per teacher) and has found the program used as it is intended consistently in the middle school. Therefore, program fidelity is assumed based upon this interview information.

In this study the researcher evaluated what progress these identified students made in their reading ability as assessed by a standardized, reliable and valid measure (WIAT-II, 2002). The study was conducted to provide district leadership with data that could be used to reallocate resources with the goal of improving student outcomes.

Data Collection

The researcher used computer generated lists of data collected on students through the assistance of the CSE chairperson and individuals trained in the use of the district's student database. Data lists were generated by a database person trained in database use who was also bound by confidentiality. Data lists (by student numbers) were generated based upon the course to which the student was assigned (WRS, ILP, GER). The data lists provided confidential student numbers without names and included student placement for reading instruction (WRS, ILP, GER); gender; age; grade level; ethnic affiliation; disability (yes/no); socio-economic status (SES) (free/reduced lunch yes/no); 2003-2004 subtest scores on the WIAT-II, 2004-2005 subtest scores on WIAT-II, NYSELAA scores from grades 4 and eight; and final report-card grades in ELA.

Data Analysis

The methodology in this research was predominantly quantitative. Independent samples t-tests were used. Comparisons of mean scores on the treatment groups of students (WRS, ILP) with the mean scores on other groups (GER) were calculated. The scores on the WIAT-II and NYSELAA were recorded and provided with the student data along with final ELA report card grades. The data were analyzed to determine if there was a statistically significant difference in reading growth occurred among groups. The data were organized and placed in a table that included WIAT-II scores and NYSELAA scores as the dependent variables. Variations of the independent variables were calculated. The independent variables included gender, age, and SES, ethnic affiliation and grade level to the maximum extent available. Interactions and variations of the independent variables were calculated using the SPSS software version 11.5. Measures of effect size were computed.

Summary

Chapter III has provided a description of the methodology used to conduct this evaluation research. Chapter IV includes the data and analysis of the data.

CHAPTER 4

PRESENTATION AND ANALYSIS OF THE DATA

The researcher's purpose for conducting this study was to evaluate the influence of a multi-sensory, multi-component reading improvement method for middle school students diagnosed with a reading disability in a suburban middle school setting. The Wilson Reading System (WRS, 2003) is a twelve-step program designed to teach students to decode words to a level of mastery. Each step builds upon the previous step and students do not move to the next step until mastery is achieved. Only students identified by the Committee on Special Education (CSE) as having a specific disability in reading were assigned to WRS. The CSE assigned other students with reading disabilities not assigned to the WRS to the Individual Learning Program (ILP). This program was designed by a special education teacher on an individual basis for the students assigned. Students without disabilities were assigned to General Education Reading (GER) classes randomly by the building administrator.

Reading is a complex and essential skill that students need to be successful life-long learners. District leadership was concerned about students reaching the middle school without this essential skill intact, because without it students are more likely to face school failure, grade-level retentions, and become drop-outs.

This chapter presents the data and the analysis of the data collected on middle school students who participated in ILP reading instruction, WRS reading instruction,

and GER reading instruction. The influence of each program was measured by final report card grades in English/Language Arts (ELA), the results of the fourth and eighth grade New York State English/Language Arts Assessment (NYSELAA), and the pre-and post-test results on three subtests of the Wechsler Individual Achievement Test (2nd ed.) (WIAT-II, 2002). Pre-testing occurred during the 2003-2004 school year and post-testing occurred during the 2004-2005 school year. The individual testing only occurred for students with disabilities assigned to ILP and WRS. The testing was conducted by a duly certified special education teacher on an individual basis in compliance with the standardized testing procedures outlined in the testing manual. Students in GER were not tested on an individual basis with the WIAT-II as this was not part of the proscribed GER program as it was for the students in ILP and WRS; thus, testing results were only available for the NYSELAA on students in GER.

Descriptive and Context Information

This study was conducted in a suburban middle school outside of Albany, New York. At the time of the study (2004-2005) the district was considered a mid-sized district with 3,500 students. The district was comprised of four elementary schools with grades Kindergarten through grade five. Kindergarten was a full-day program and class sizes in Kindergarten through grade two range from 17 to 22 students. One middle school (grades 6 to 8) of about 850 students was structured in teams at each grade level. The one high school had grades 9 to 12 and approximately 1,150 students. The middle school and high school operated on block schedules.

The district had a low population (10%) of students receiving free or reduced-price lunch. Demographics indicated that 98.5% of students were white and most met or exceeded the New York State Learning Standards in English/Language Arts (ELA) and Mathematics. The district had a high percentage of students identified as having special needs, almost 20% were identified.

The data used existed in a database and were collected and placed in the database without regard to this study. Four groups of student data were retrieved from the school district database. Forty-seven students who received GER instruction were in group one. These students were matched on independent variables to the extent possible including grade level, date of birth (within 3 months), gender, ethnic affiliation, free/reduced lunch (yes/no), to 47 ILP students in group two. Thirty-seven students who received GER instruction were in group 3 and matched in the same manner to 37 WRS in group four. The ILP and WRS students have an identified educationally related disability, the GER students do not. Table 4 presents the demographic data of the four groups.

Results

The study was directed by several research questions. Data for each research question are presented immediately and summarized at the end of responses to all questions. Data were available on subtests of the WIAT-II for students in ILP and WRS only. These initial research questions pertain to ILP and WRS only.

The scores on the WIAT-II are reported in percentiles. Percentile scores range from 0-99 with the 50th percentile meaning that of 100 persons in the general population

50 would score above the 50th percentile and 50 would score below. Thus, a percentile rank of 50 is considered the norm or average.

Table 4

Demographic Data for Middle School Students in ILP Reading, WRS Reading, GER Programs Extracted From the District Database in 2005.

Independent Variable	GER Matched to ILP-Group 1		ILP-Group 2		GER Matched to Wilson-group 3		Wilson-Group 4	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
<i>Grade level</i>								
6	5	11	5	11	14	38	14	38
7	14	30	14	30	11	30	11	30
8	13	28	13	28	12	32	12	32
9	15	31	15	31				
Total	47	100	47	100	37	100	37	100
Gender								
Male	31	66	31	66	24	65	24	65
Female	16	34	16	34	13	35	13	35
Total	47	100	47	100	37	100	37	100
Ethnic affiliation								
White	47	100	47	100	36	97	36	97
Hispanic	0	0	0	0	1	3	1	3
Total	47	100	47	100	37	100	37	100
Free/reduced lunch								
yes	8	17	9	19	7	19	11	30
no	39	83	38	81	30	81	26	70
Total	47	100	47	100	37	100	37	100

Research Questions

1. What is the influence of multi-sensory, multi-component reading instruction on the word identification skills of middle school students with a reading disability in a suburban middle school setting? Independent sample t-tests were used to compare mean differences on the Pseudoword Decoding (PWD) scores (subtest of WIAT-II) from 2003-2004 and 2004-2005 for ILP (group 2) and WRS (group 4). The results indicate that the group of students assigned to ILP had a significantly higher ($p \leq .05$) mean score of 41.91 ($t = 5.76$, $df = 82$) in 2004 than did students assigned to WRS with a mean score of 21.68 (mean difference = 20.24, $p \leq .001$). In 2005, ILP students had a significantly higher mean score of 46.53 ($t = 4.12$, $df = 82$) compared to the WRS students mean of 31.41; however, the mean difference was reduced to 15.13. Results are reported in table five.

2. What is the influence of multi-sensory, multi-component reading instruction on the comprehension skills of middle school students with a reading disability in a suburban middle school setting? Independent samples t-tests were used to compare mean differences on Reading Comprehension (RDG) scores (subtest of WIAT-II) from 2003-2004 and 2004-2005 for ILP (group 2) and WRS (group 4). The results indicate no significant (NS) difference between ILP ($m = 32.70$) and WRS ($m = 41.68$) in RDG in 2004. In 2005 the results indicate a mean score of 41.87 for ILP students and a mean score of 52.84 ($t = -2.14$, $df = 82$) for WRS which was determined to be statistically significant $p \leq .036$. Results are reported in table five.

3. What is the influence of multi-sensory, multi-component reading instruction on fluency skills of middle school students with a reading disability in a suburban middle school setting? Independent samples t-tests were used to compare mean differences on

Oral Expression (FL) scores (subtest of WIAT-II) from 2003-2004 and 2004-2005 for ILP (group 2) and WRS (group 4). The results indicate no statistically significant ($p \leq .05$) difference between the ILP ($m = 33.32$), and WRS ($m = 39.19$) ($t = -1.61$, $df=82$, $p \leq .111$) students in 2004 or 2005. Results are reported in table five.

Table 5

Independent Samples T-Test on Subtest Scores for Middle School Students Assigned to ILP or WRS Reading Programs.

Subtest	ILP		WRS		Differences			
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>MD</i>	<i>Df</i>	<i>t</i>	<i>p</i>
PWD 2004	41.91	21.34	21.68	9.99	20.24	82	5.76	.000
PWD 2005	46.532	20.34	31.41	13.14	15.13	82	4.12	.000
MD	4.62		9.73					
RDG 2004	32.70	18.87	41.68	26.26	-8.97	82	-1.82	.072
RDG 2005	41.87	19.45	52.84	25.95	-10.97	82	-2.14	.036
MD	9.18		11.16					
FL 2004	33.32	15.96	39.19	17.31	-5.87	82	-1.61	.111
FL 2005	40.32	15.61	47.51	19.44	-7.19	82	1.882	.063
MD	7.00		8.32					

PWD =Pseudoword decoding, RDG = Reading Comprehension, FL = Fluency,

MD=mean difference

The ILP and WRS programs offer reading intervention to students diagnosed with a disability. The means were calculated for each group and compared to determine growth rate for each group. The mean difference from 2004 to 2005 in each subtest for

each group increased. The difference was calculated to determine which group had greater growth over the year. The results are in table five.

In addition to investigating the influence of the intervention on these subtest scores, student success in school is measured by a variety of factors including report card and state assessments. Students, regardless of disability, are expected to meet or exceed the NYS learning standards and achieve passing grades in order to be promoted and eventually graduate from high school. The report card grades used were the final grade for the year in both fourth and eighth grade. A score of 65 or higher is passing and 85 or higher is considered mastery level. On the NYSELAA test at both grade 4 and grade 8 a score of 1 or 2 indicates a score below the state standard, a score of 3 indicates meeting the standard, and 4 is exceeding the standard. In this study, the researcher attempted to establish if a proscribed reading method (WRS and ILP) had influence on the results of the fourth and eighth grade report card grade, fourth and eighth grade NYSELAA scores. Independent samples t-tests were performed on these data as available for students in ILP and WRS and compared to students in GER. Results are reported in Table 6 for ILP, WRS and GER. Independent samples t-tests were performed to compare ILP and WRS only and results are reported in Table seven.

Table 6

Independent Samples T-Tests WRS, ILP, GER.

Group	4 th Report Card				4 th NYSELAA				8 th Report Card				8 th NYSELAA							
	M	SD	t	df	P	M	SD	T	Df	P	M	SD	t	df	p	M	SD	t	df	p
GER (ILP match) n=47	87.34	6.30	6.29	92	.000	3.34	.48	8.93	92	.000	88.57	5.06	1.54	54	.130	3.07	.60	6.94	54	.000
	78.74	6.93				2.34	.60				85.79	8.14				2.04	.51			
GER (WRS match) n=37	85.81	7.68	3.65	72	.000	3.19	.59	5.34	72	.000	85.75	8.66	(1.52)	22	.141	2.92	.29	3.37	22	.003
	79.05	8.20				2.46	.65				89.75	2.70				2.25	.62			

Table 7

Independent Samples T-Tests ILP and WRS Only.

Group	4 th Report Card				4 th NYSELAA				8 th Report Card				8 th NYSELAA							
	M	SD	t	df	P	M	SD	T	Df	P	M	SD	t	df	P	M	SD	t	df	P
ILP n=47	78.74	6.93	-1.87	82	.852	2.34	.60	-8.70	82	.387	85.79	8.14	-1.64	38	.027	2.04	.51	-1.14	38	.260
WRS n=37	79.05	8.20				2.46	.65				89.75	2.70				2.25	.62			

The results for the fourth grade report card indicate a significant difference between GER ($m = 87.34, t = 6.29, df=92, p \leq .000$) and ILP ($m = 78.74$) and GER ($m = 85.81, t = 3.65, df=72, p \leq .000$) and WRS ($m = 79.05$). The results for the fourth grade NYSELAA indicate a significant difference between GER ($m = 3.34, t = 8.93, df=92, p \leq .000$) and ILP ($m = 2.34$) and GER ($m = 3.19, t = 5.34, df=72, p \leq .000$) and WRS ($m = 2.46$). The results for the eighth grade report card indicate no significant difference between GER ($m = 88.57, t = 1.54, df=54, p \leq .130$) and ILP ($m = 85.79$) and GER ($m = 85.75, t = -1.52, df=22, p \leq .141$) and WRS ($m = 89.75$). The results for the eighth grade NYSELAA indicate a significant difference between GER ($m = 3.07, t = 6.94, df=54, p \leq .000$) and ILP ($m = 2.04$) and GER ($m = 2.92, t = 3.37, df=22, p \leq .003$) and WRS ($m = 2.25$).

Results comparing ILP to WRS on the fourth grade report card, fourth grade NYELAA and eighth grade NYSELAA indicate no significant differences (see Table 7). There is a significant difference between WRS and ILP on the eighth grade report card (ILP $m = 85.79$, WRS $m = 89.75, t = -1.64, df=38, p \leq .027$)

Measures of effect size were calculated. Effect size is the “degree to which a phenomenon exists” (Cohen, 1965, as cited in Hinkle, Wiersma, & Jurs, 2003). The use of this measure assists in determining if the statistically significant mean difference is of practical or educational importance when interpreting the results (Ike, 2004). Significance is strongly influenced by the sample size while the effect size is not affected by it. Effect size explains how much of a standard deviation the group moved which is essentially quantifying the difference between the groups.

The measure of effect size for purposes of this study was done using the following guidelines (Small effect = $.25\sigma$, medium = $.50\sigma$, and large = 1.0σ or greater. The calculation used in this study was:

$$\text{Effect size} = \frac{\text{mean of group A} - \text{mean of group B}}{\text{Standard deviation of control group}}$$

(See Appendix D for actual calculations).

In this study the fourth grade mean report card scores and the fourth and eighth grade mean NYSELAA scores were statistically significant (see Table 7) for ILP and WRS. All mean differences were calculated to determine effect size. The control groups are the GER match groups respectively. Table 8 displays the resulting effect sizes. The complete calculations are available in Appendix D.

Table 8

Effect Size Results Between Mean Scores for ILP and WRS.

Assessment	Effect size (sigma)	Interpretation
4 th grade report card	.05	Small
4 th grade NYSELAA	.18	Small
8 th grade report card	.78	Medium-Large
8 th grade NYSELAA	.35	Small

σ = sigma = effect size

Table 9

Effect Size Results Between Mean Scores for ILP and GER.

Assessment	Effect Size (sigma)	Result
Fourth Grade Report Card	1.36	Large
Fourth Grade NYSELAA	1.66	Large
Eighth Grade Report Card	.55	Medium
Eighth Grade NYSELAA	1.71	Large

O=sigma=effect size

Table 10

Effect Size Results Between Mean Scores for WRS and GER.

Assessment	Effect Size (sigma)	Result
Fourth Grade Report Card	.88	Medium- Large
Fourth Grade NYSELAA	.18	Small
Eighth Grade Report Card	1.12	Large
Eighth Grade NYSELAA	2.31	Large

O = sigma = effect size

Effect size was calculated for the WIAT-II subtest scores for students in ILP and WRS. Since GER students are not tested using this instrument district, control group data were not available. The control group standard deviation data used for this calculation were

obtained from the population norm data published in the *WIAT-II Examiner's Manual* (2002, p. 131). The complete calculations are available in Appendix D.

Table 11

Effect Size Results for WIAT-II Subtests for Middle School Students Participating in ILP and WRS Programs.

Subtest	Effect Size	Interpretation
PWD 2004	1.53	Large
PWD 2005	1.15	Large
RDG 2004	.72	Medium
RDG 2005	.88	Medium-Large
FL 2004	.43	Small
FL 2005	.53	Medium
ILP mean diff in PWD 04-05	.35	Small
WRS mean diff in PWD 04-05	.74	Medium
ILP mean diff in RDG 04-05	.74	Medium
WRS mean diff in RDG 04-05	.90	Medium-Large
ILP mean diff in FL 04-05	.52	Medium
WRS mean diff in FL 04-05	.61	Medium

$O=\sigma$ =effect size

PWD= Pseudoword Decoding Subtest, RDG= Reading Comprehension Subtest, FL= Fluency

Summary

Chapter IV presented the results of data analysis on the influence of ILP, WRS, and GER on middle school students in a suburban setting. Results indicated that students in ILP and WRS reading improved significantly when measured on Pseudoword Decoding and Reading Comprehension subtests of the WIAT-II when comparing results obtained in 2004 to results obtained in 2005. The Oral Expression subtest referred to as fluency subtest comparison was not statistically significant.

The students in ILP and WRS are expected to meet the New York state learning standards in a variety of areas. When compared to students in GER, the students in ILP scored significantly lower on the fourth and eighth grade NYSELAA and the fourth grade report card grade. There was no significant difference on the eighth grade report card grade.

Results of effect size calculations indicate a large effect size on the fourth and eighth grade NYSELAA and the 4th grade report card. A small-medium effect size was found on the eighth grade report card.

Chapter V includes a summary of findings, conclusions, and suggested recommendations for future research.

CHAPTER V

SUMMARY AND CONCLUSIONS

At the heart of all formal learning that occurs within the American educational system is the ability to read. Students must acquire this skill early in their educational career or they face an extremely difficult, if not impossible, road toward a high school diploma (Scott & Shearer-Longo, 2002; Snow, Burns, & Griffin, 1998). Though early intervention efforts to remediate poor reading skills are often used with students in elementary school, inevitably some students enter middle school as poor or non-readers (Ivey & Broaddus, 2000). The purpose of this research was to study the influence of reading intervention programs offered at a suburban middle school in upstate New York. Students with disabilities were assigned by the Committee on Special Education (CSE) to one of two reading programs, either the Individual Learning Program (ILP) or the Wilson Reading System (WRS, 2003). All other students were assigned to General Education Reading (GER) by the building administrator. Data were retrieved from the district database and used in this retrospective/explanatory research to study this influence. Independent samples t-tests were performed on the data and effect sizes were also calculated. The study was limited to the data that existed in the student database at the time of the study as no new data were generated for this study. Students in this non-experimental study were assigned to participate in reading intervention programs independent of this study. The testing completed was part of the program and the validity of the study is limited to the validity and reliability of the instruments used and the

accuracy of the teachers using them. The researcher was an administrator in the district at the time of the study so researcher bias may have been a limitation.

Chapter v is organized as follows: conclusions based upon the data analyzed, implications from the conclusions and recommendations for future research, along with current news on this topic.

Findings and Conclusions

The demographic data for this study revealed that most students were white and this was true of the overall district population as 98% of the total population were white. The district had an overall population of students receiving free/reduced-price lunch of about 10% while 17% of the population consisted of students with disabilities in this middle school received free/reduced lunch.

Students in both ILP and WRS were tested in 2004 and 2005 using the Wechsler Individual Achievement Test-(2nd ed., 2002) (WIAT-II). Subtest scores including Pseudoword Decoding (PWD), Reading Comprehension (RDG), and Fluency (FL) were retrieved from the database. GER students were not tested using the WIAT-II.

Students in ILP, WRS, and GER participated in English/Language Arts (ELA) and received final report card grades and they also participated in New York State English/Language Arts Assessment (NYSELAA) in grades 4 and eight. These results were retrieved from the database for all students (ILP, WRS, and GER).

The following null hypotheses resulted from the primary research questions:

H₀: Students would not improve in word identification.

H₀: Students would not improve in reading comprehension.

H₀: Students would not improve in fluency.

The results indicate that ILP students in 2004 and 2005 had a significantly higher mean score on PWD than did students in WRS. Thus, the null hypothesis 1 was rejected. Yet the growth between 2004 and 2005 was much greater for students in WRS than for those in ILP (the ILP mean difference was 4.62 while the WRS mean difference was 9.73). Thus, the WRS students appear to be weaker upon placement into WRS and results indicate that they were weaker in PWD than were ILP students as they began the program. Though they remained weaker, they had improved at almost double the rate of the ILP students. The data in 2006 should be retrieved on these students because if this type of improvement continues there may be no difference between the students at the end of three years. This change is supported by the literature as WRS (Wilson Reading System, 2003) is designed to improve decoding skills for students. Decoding is a prerequisite to improving reading skill.

There was not a significant difference between ILP and WRS in 2004 in reading comprehension (RDG). In 2005, there was a significant difference between the two programs suggesting more rapid improvement for students in WRS or slower improvement for students in ILP. The mean difference or improvement between 2004 and 2005 was 9.18 for ILP and 11.16 for WRS. Again, scores should be retrieved in 2006 to determine improvement, if any, at that time. The null hypothesis 2 was rejected.

Fluency scores were not significantly different from 2004 to 2005 or between ILP and WRS students. The null hypothesis 3 was accepted.

In addition to improving reading ability, students must meet or exceed the New York State learning standards in an effort to meet the expectations of the No Child Left

Behind (NCLB) Act (USDOE, 2002) by 2013 (all students will meet or exceed basic competency levels). In New York State at the time of this study, progress in ELA was measured at grades 4 and eight. A score on the NYSELAA of 1 or 2 was below the state standard and a score of 3 or 4 indicates that the student met or exceeded the standard.

In an effort to benchmark the progress of the students with disabilities (students assigned to ILP and WRS), student test data were analyzed from results of ILP, WRS, and from the GER students (who represented the grade-level mean) on the final report card grades in ELA in grades 4 and 8 (65 and above was passing and 85 and above was mastery) and NYSELAA grades 4 and eight. These results indicate statistically significant differences between GER and ILP and GER and WRS.

The mean score on the grade 4 report card for GER as compared to ILP and WRS respectively, though the GER were significantly higher (GER means of 85.81 and 87.34 as compared to ILP and WRS mean scores of 78.74 and 79.05) the mean of each group was above 65, which indicates a passing grade. The GER means indicate mastery level. Thus, the students with disabilities (ILP and WRS) scored below their GER peers, yet have an overall passing score on the grade 4 report card.

On the fourth grade NYSELAA a score of 3 indicated that the standard was met. The GER groups each had a mean score above 3 (3.19 - 3.34) while the WRS and ILP mean scores were below 3 indicating that the standard was not met (ILP $m = 2.34$, WRS $m = 2.46$). These results indicate the need for further investigation into the grades assigned on the final report card, since the mean score was above the minimum of 65 indicating that students were exceeding the school standard, yet the students did not achieve at the state standard. The validity and reliability of the state assessments has been

questioned (Ike, 2004) and the test has changed in rigor and content annually, making any attempt at longitudinal analyses difficult.

Results indicate that there was no significant difference between students with disabilities (ILP and WRS) and the general population (GER) on the independent samples t-test for the grade 8 report card scores. All groups had a mean score at or above mastery (85). However, on the grade 8 NYSELAA, there were significant differences between these groups (ILP and GER; WRS and GER). Yet the mean scores for the GER barely met the standard or fell just below, and the scores for students in ILP and WRS were lower. This again causes concern regarding the test, the grading system in place for students in grade 8 ELA, and whether the grade 8 ELA curriculum in this middle school aligns with the New York State learning standards at this level.

Effect sizes were determined among all groups. Since significance is strongly influenced by sample size, and the samples available for this study were small, effect sizes were determined. The effect size, or sigma, explains how much of a standard deviation the group moved. Results indicate that the effect sizes were large between GER students and both ILP and WRS students revealing the differences between groups. The effect sizes were small and medium between ILP students and WRS students except on grade 8 report card and 2005 results of individualized testing on the WIAT-II subtest in reading, which indicates a large effect size between ILP students mean scores and WRS students mean scores.

Implications

The findings in this study indicate that both the ILP and WRS students made progress toward improving their reading skills. The subtest scores on the WIAT-II for the students in ILP and WRS significantly improved over time, though the mean scores remained below the fiftieth percentile which is average. The means scores of ILP and WRS students also are fairly close, though still significantly lower in achievement than GER students, on the fourth and eighth grade measures used in this study. Research indicates that early intervention is critical in helping students to learn to read for meaning and that students who are not reading well by the end of grade 3 may never “catch up” (Francis et al., 1996; McCardle et al., 2001; Slavin et al., 1994). The findings here support the concept that small-group reading intervention improves reading skill, but even after 1 year of successful intervention, students had not yet achieved at grade level, suggesting that earlier intervention and prevention may be far more beneficial than remediation at this level.

The leadership of the school district was concerned with the influence that the ILP and WRS reading programs had for students with disabilities. The findings here reveal that students benefit from both programs. The students in WRS seem to make more rapid progress than the students in ILP. This may be due to the specificity of their disability being addressed by a program like WRS which is designed to improve decoding and reading comprehension skills (Wilson Reading System, 2003). The WRS students started at a significantly lower mean score than did ILP students on subtests and when retested had reduced the gap. This implies that more time in the program may reduce or eliminate the gap. Re-evaluation in 2006 would assist in evaluating this hypothesis.

The New York State testing program continues to be a requirement for district compliance. Therefore, students will continue to be tested using the program and district progress toward meeting NCLB “mandates” will continue to be measured. The students assessed on the grade 8 NYSELAA scored very close to or just below the minimum standard required on this assessment, yet the eighth grade report card grades reveal at or above mastery level grades in all groups. This discrepancy needs to be investigated.

Recommendations

It is recommended that the district consider its early intervention programs and make a concerted effort to have all students reading proficiently before entering middle school as prevention is more important than remediation. Research on Class Size Reduction (CSR), time on task, small-group intervention, etc. indicate that intervention prior to grade 3 enhances student success in the long term. It appears that without prevention students lose valuable learning time. For example, the students in ILP and WRS spent as much time in remediation as the GER students spent in learning new material in the general education reading program. The current dilemma in this study reveals that despite some early intervention efforts and some class size reduction (classes range from 18-22, still larger than 13-17 found most effective), small-group reading instruction at the elementary level, etc., students still enter middle school as poor or non-readers. Additionally, they do not “catch up” despite effective intervention. The district should strongly consider maintaining middle school intervention while reducing class sizes further. This may be started in Kindergarten and as this group moves forward continue to provide significantly smaller classes so that at the end of 4 years all classes

Kindergarten through third grade will be less than 18 students. Given the limited resources available in the district, consideration could be given to eliminating the reading teachers in grades Kindergarten through third grade who provide very small group (1 to 4 students) instruction, and making them classroom teachers. There will be a lag in the short-term if this change were to occur. This would require greater resources to maintain the current programs while revising class sizes and studying the outcomes, since each reading teacher serves one school and serves 3 grades.

It is also recommended that the district continue to monitor the progress of students in ILP and WRS to determine if the programs continue to help students make gains in reading which results in grade-level reading ability. It is also critical that the district investigate the eighth grade ELA curriculum and grading system as the eighth grade report card grades appear to be at or above the mastery level, while the NYSELAA is at or below the standard.

Breaking News

A recent article produced by the Carnegie Corporation, *America's Literacy Challenge* (Grosso de Leon, 2005), begins with "All the reading experts agree. America is having an awful time teaching its middle school and high school students how to read with comprehension" (p. 1). The seemingly obvious answer is to teach them to read earlier, not in middle school or high school. It seems that students at the grade 4 level meet or exceed the standard and then fall behind as they progress toward a high school diploma. Is this the result of poor assessment or are the students truly weak? Attempts to meet NCLB mandates are forcing districts across the country to assess students and

report results. These results are quickly publicized and schools are criticized for not “making the grade”. Do the assessments truly measure what they purport to measure?

A recent article by Borman and colleagues (2005) reveals that, despite the promotion of Success for All (Slavin et al., 1994) as a Scientifically Based Researched (SBR) program that will have children reading by the end of grade three, the results of a recent SBR study using a randomized sample are weak. As educators, we tend to jump for the latest panacea designed to “fix” the problem. Then research is completed which may or may not support the program chosen.

Children need for educators to provide instruction that will make them successful readers which contributes to life-long learning. It is the obligation of professionals involved to investigate and research the programs and services intended to enhance the educational program and allow students to learn and be successful.

Future research on this topic of addressing poor or non-readers at the middle school level is important. More importantly the elimination of the need for intervention at this level is required. Early intervention strategies like CSR are known to not only improve student performance but these improvements are sustained over the long-term (Finn et al., 2001). Educators must work to provide effective, SBR programs that will result in better performing American schools. Based upon the testing program in place, will we know if they are better performing schools? This is another important area requiring further research.

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APPENDIX A

Request for Approval to Use District Database

TO: Michael J. Johnson
FROM: Jo Moccia
DATE: March 28, 2005
RE: Data

As you know I am a doctoral candidate at Seton Hall University. I am in the process of completing my dissertation on the effect of multi sensory multi component reading intervention with middle school poor readers.

In order to complete this process I am requesting access to the student database. All information provided to me will not contain any personally identifiable data. I will keep this information completely confidential.

Thank you for your support in my program evaluation. I will share my findings at the conclusion of this process.

APPENDIX B

Approval to Use District Database

Averill Park Central School District


8439 Miller Hill Road, ST 1
Averill Park, New York 12018
(518) 674-7050
Fax: (518) 674-3802

JOSEPHINE P. MOCCIA
DEPUTY SUPERINTENDENT OF SCHOOLS

MICHAEL J. JOHNSON
SUPERINTENDENT OF SCHOOLS

PAMELA A. HATFIELD
ASSISTANT SUPERINTENDENT
OF BUSINESS

TO: Jo Moccia
FROM: Michael J. Johnson
DATE: March 28, 2005
RE: Dissertation Request



Your request to access Averill Park Central School District data pursuant to your doctoral dissertation is hereby approved.

APPENDIX C

Summary of Effect Size Calculations

The measures of effect size for purposes of this study were done using the following guidelines: Small effect = $.25\sigma$, medium = $.50\sigma$, and large = 1.0σ or greater.

The calculation used in this study was:

$$\text{Effect size} = \frac{\text{mean of group A} - \text{mean of group B}}{\text{Standard deviation of control group}}$$

Subtest	Calculation group A=ILP group B=WRS SD of control group is norm from WIAT-II (see p. 62)	Effect Size (sigma)	Result
PWD 2004	41.91-21.68÷13.16	1.53σ	L
PWD 2005	46.53-31.41÷13.16	1.15σ	L
RDG 2004	32.70-41.68÷12.40	.72σ	M
RDG 2005	41.87-52.84÷12.40	.88σ	M
FL 2004	33.32-39.19÷13.56	.43σ	S
FL 2005	40.32-47.51÷13.56	.53σ	M
ILP MD in PWD 04-05	41.91-46.53÷13.16	.35σ	S
WRS MD in PWD 04-05	21.68-31.41÷13.16	.74σ	M
ILP MD in RDG 04-05	32.70-41.87÷12.40	.74σ	M
WRS MD in RDG 04-05	41.68-52.84÷12.40	.90σ	M-L
ILP MD in FL 04-05	33.32-40.32÷13.56	.52σ	M
WRS MD in FL 04-05	39.19-47.51÷13.56	.61σ	M

PWD= Pseudoword Decoding Subtest, RDG= Reading Comprehension Subtest, FL= Fluency

Assessment	Calculation group A=ILP group B=WRS control group=GER	Effect Size (sigma)	Result
Fourth grade report card	$78.74-79.05 \div 6.30$	.05 σ	S
Fourth grade NYSELAA	$2.34-2.45 \div .60$	.18 σ	S
Eighth grade report card	$85.79-89.75 \div 5.05$	.78 σ	M
Eighth grade NYSELAA	$2.04-2.25 \div .60$	.35 σ	S

Assessment	Calculation group A=GER group B=ILP control group=GER	Effect Size (sigma)	Result
Fourth grade report card	$87.34-78.74 \div 6.30$	1.36 σ	L
Fourth grade NYSELAA	$3.34-2.34 \div .60$	1.66 σ	L
Eighth grade report card	$88.57-85.79 \div 5.05$	.55 σ	M
Eighth grade NYSELAA	$3.07-2.04 \div .60$	1.71 σ	L

Assessment	Calculation group A=GER group B=WRS control group=GER	Effect Size (sigma)	Result
Fourth grade report card	$85.81-79.05 \div 7.70$	.88 σ	M
Fourth grade NYSELAA	$3.19-2.46 \div .65$	.18 σ	S
Eighth grade report card	$85.79-89.75 \div 5.05$	1.12 σ	L
Eighth grade NYSELAA	$2.92-2.25 \div .29$	2.31 σ	L