THE KINDERGARTEN BUDDY PROGRAM AND ITS EFFECT ON

READING ACHIEVEMENT FOR AT-RISK KINDERGARTEN STUDENTS

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ABSTRACT

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Research states that more time and attention is needed for some students to
acquire the necessary skills which allow them to become successful learners. Full-day
kindergarten programs are desirable to ensure that all students have the necessary time to
be successful. Due to lack of funds many school districts are unable to offer full-day
kindergarten programs. The Kindergarten Buddy Program is a viable alternative for
school systems seeking ways to provide opportunities for students who require extra
support. The effectiveness of providing additional instruction in phonological awareness
for at-risk learners needs to be explored to determine its impact on reading achievement.
This information will be beneficial to school districts as they struggle to meet the needs
of at-risk students in a fiscally responsible manner.

The purpose of this study was to determine if additional instruction in phonological
awareness, the Kindergarten Buddy Program, had an effect on reading achievement for at-
risk kindergarten students. Students' reading achievement was analyzed to see if participation
in the Kindergarten Buddy Program enabled them to reach grade level expectations. Using a
convenience sample (N = 92), scores on the Gates MacGinitie Reading Test and the
Kindergarten Inventory of Skills in the half-day extended Kindergarten Buddy Program were
compared to students scores in half-day kindergarten without an extended program and in a

full-day kindergarten without an extended program. An ANOVA was conducted to determine if there were differences in the post-test scores of the different groups. Differences over time were also analyzed using a repeated measures ANOVA to determine if there was a significant difference in the means of the scores of the three groups as measured by the Inventory of Skills.

The study revealed that half-day Buddy students scored significantly higher than half-day kindergarten students on the letter and letter/sound subscores on the Gates MacGinitie. Scores comparing the Buddy Program to a full-day program were similar as were the half-day kindergarten and full-day programs. This suggested the Kindergarten Buddy Program made significant strides in improving letter and letter/sound abilities of the at-risk students and therefore, it was as effective as the full-day program in assisting at-risk students in reaching grade level expectations.

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Reading Achievement for At-Risk Kindergarten Students

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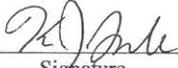
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DEDICATION

This research project is devoted to the following friends and family who have supported me during this long process: My loving and supportive Mom, Emma, my wonderful sisters, Barbara, Jane and Kathleen, my fantastic nephews, PJ, Jeremy, Zak, James, Tyler, and Justin, my one and only, spectacular niece, Emily, and my great friends Lois, Susie, Randy, Paula, Dolores, Mary and Rosie. Lastly, of course my amazing son Vincent, my greatest love and accomplishment, who I hope learns that hard work pays off and always remembers that as long as you remain dedicated and committed to your goals, anything is possible!

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CHAPTER ONE

Introduction and Identification of the Topic

The National Reading Panel (2000) states that phonemic awareness and letter

knowledge are the best indicators of how students will fare during their first two years of

school. A child's level of phonological awareness upon entering school is considered to be

the strongest single determinant of success that a child will experience in learning to read or

conversely the likelihood that the child will fail (Adams, 1990). There seems to be agreement

in the literature that a quality kindergarten experience is valuable for children (Blades, 2002).

The pressure of the No Child Left Behind (NCLB) federal legislation (2001), the increased

emphasis on standards and accountability, coupled with the desire to ensure that all students

are achieving academically, have made it extremely important that students are in an

academically rigorous program to be successful. "The place to start early intervention

programs is kindergarten" (Pikulski, 1998, p. 1).

Connecticut State Commissioner of Education, Mark McQuillan (2007) stated:

We are very concerned with the state of our students' comprehension skills

particularly in their ability to read by third grade. It is clear we need to do much more

to address our students' ability to read. The achievement gaps are growing larger, not

smaller. Our focus must be on reading instruction in the early grades if we are to

make progress on closing the achievement gaps. There needs to an emphasis on

language and pre-reading strategies in pre-k and kindergarten. (p. 1)

Kindergarten students enter our school with diverse skills and abilities (National

Reading Panel, 2000). Many students do not have the necessary pre-reading skills to be

successful in kindergarten. Learning to read is, without question, the top priority for students

in elementary education (Boyer, 1995). Research states that phoneme awareness is one of the best predictors of reading success (Adams, 1994). Perhaps additional time and resources for students are needed to help them acquire the skills to reach grade level. The Kindergarten Buddy Program is one such program that offers at-risk students additional instruction in phonological awareness. This program provides an additional 50-minutes of instruction to at-risk kindergarten students everyday. This study investigates the effectiveness of the Kindergarten Buddy Program and the impact of additional phonological awareness instruction on at-risk kindergarten students.

Rationale for Selecting the Topic

The purpose of this study is to examine the effectiveness of providing additional phonological awareness instruction to at-risk kindergarten students and its effect on reading achievement. Faced with the educational issue of finding ways to support the at-risk kindergarten student, it was important to find out if additional time and extra support in phonological awareness was beneficial in helping students reach grade level expectations by the end of kindergarten. Would the extra support assist students as they learned the prereading skills needed to become successful first grades? Does the extra work in letter-sound relationships, initial sounds, blending, rhyming allow at-risk students to be on par with their classmates? The study was conducted to investigate the effectiveness of the Kindergarten Buddy Program. Does the program meet the goal of getting kindergarten students to grade level by the end of kindergarten? School districts need to find out if a direct, explicit instructional program which provides additional time and support for students who begin kindergarten below grade level is effective in improving reading achievement.

Early childhood educators need to know if a kindergarten intervention such as the Kindergarten Buddy Program is effective and if it should be continued or expanded.

Statement of the Problem

Educators must meet the needs of all students while struggling to be fiscally responsible. Hutson (2006) reported that a local school board weighed the benefits of an all-day kindergarten program against the cost to the school district. Members believed the all-day program would better prepare children for success, but the costs would be too exorbitant for the school district. This dilemma is faced by school districts across the country as they struggle to provide programs for needy students and work within budgetary restrictions. The Kindergarten Buddy Program offers the opportunity to provide additional instructional time at little cost for those school districts that do not have full-day programs due to financial constraints, but struggle with ways to provide additional support for their at-risk students. Is the program effective in providing direct, consistent instruction in phonological awareness to those students who need assistance in order to help them to meet the standards by the end of kindergarten? It is in the best interest for students and educators to explore the effectiveness of this treatment, providing additional instruction in phonological awareness to help at-risk students improve reading achievement and reach grade level benchmarks.

Potential Benefits of the Research

There are many potential benefits to conducting this study. It is important to find out the impact of phonological awareness instruction on at-risk students. It is imperative to find ways in which schools can meet the needs of at-risk kindergarten students so that all children are successful in meeting the end-of-the-year standards. It is also advantageous to encourage educators to begin to think outside of the box as they tackle educational problems and

concerns without an increase in personnel and school budgets. The study provides school districts with a fiscally responsible alternative program so that they can direct additional instruction to at-risk students at a low cost. The study is important because it provides useful information to educators who struggle to meet the diverse needs of kindergarten students as they prepare them for first grade. The Kindergarten Buddy Program offers school districts a fiscally sound alternative for those that cannot afford or are not able to schedule full-day kindergarten programs.

The benefits of the Kindergarten Buddy Program extend to teachers, administrators and students. The program benefits teachers by giving additional assistance to their students so that they do not have to spend valuable class time reviewing phonics skills and can introduce advanced skills and acquisitions. When students are at grade level and are successful in kindergarten it allows teachers to teach the full curriculum, including enrichment activities. First grade teachers can begin the year secure in the fact that students have mastered phonemic awareness skills and are ready to undertake the challenges of the grade one curriculum. When a student does not have the basic skills, e.g., letter recognition, teachers must remediate and teach basic skills and are therefore unable to maximize instructional time. Other resources need to be used for remediation and attainment of basic skills instead of differentiating instruction or enriching the classroom. Administrators and school officials benefit when students are on grade level (Fielding, Kerr, & Rosier, 2004). Funds can be spent on more enrichment programs rather than remediation. When students leave kindergarten with the necessary skills prepared for grade one and higher, funds can be used in a more creative manner. Enrichment programs and alternative staffing configurations can be considered when remediation is not needed. Of course, when students have strong

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basic reading skills, they will be more confident learners and they will be successful in other academic areas. Solid readers will be more successful in school which is always a positive benefit for all stakeholders. Students become more confident learners with fewer behavior problems. Therefore, it is imperative that schools provide strong academic foundations in the lower grades so that as students get older, they become confident, assured, skilled learners. In order to educate youngsters to be proficient learners, early literacy development and the attainment of prerequisite skills are paramount for schools and must be a focus.

Definition of Terms

The following terms are relevant to the proposed study:

1. *Full-day kindergarten programs/all-day kindergarten programs* are instructional configurations where children attend for a school day: 6-6 1/2 hours per day (Alber-Kelsay, 1998).

2. *Half-day kindergarten programs* are instructional configurations where children attend for half of a school day: 2 ½- 3 hours per day (Alber-Kelsay, 1998).

3. *Kindergarten Buddy Program* is a 50-minute extended day program for at-risk half-day kindergarten students added to a half-day program. The program focuses on the teaching of phonological awareness.

4. *Phonemic Awareness* refers to the ability to focus on and manipulate phonemes in spoken words (National Reading Panel, 2000).

5. *Phonological Awareness* refers to children's ability to notice and work with sounds in language. Research shows that the pace at which children learn to read often depends on how much phonological awareness they have when they begin kindergarten (http://www.ed.gov/nclb/index/az/glossary.html?src=az).

6. *Reading Achievement* is a measure of a student's reading vocabulary and his or her ability to read and understand different types of passages (MacGinitie, MacGinitie, Maria & Dreyer, 2002).

Related Literature

The review of the literature is divided into four sections. The first section focuses on the Russian psychologist Lev Vygotsky and his child development theory. The second part of the literature review concentrates on the importance of kindergarten and the benefits of full-day kindergarten programs. The third section focuses on the importance of early intervention including additional time for at-risk students. The final section summarizes the importance of phonological awareness instruction.

Lev Vygotsky's Child Development Theory. Educational psychologist Lev Vygotsky (1978) provides a framework for understanding children's cognitive development. Vygotsky stated that education develops a child. His theory suggested that social interaction leads to continuous changes in the thoughts and behavior of children. He put great emphasis on the interaction between children, adults, and the social environment. He believed that the social environment had an impact on a child's cognitive development and that language and social interaction promoted learning. Many educators have taken Vygotsky's theory into consideration when making decisions about educating students. Students must be supported to internalize higher levels of thought processes that are activated through language and social interaction with peers. This is the foundation of a healthy educational program. A full-day program provides more time for social learning and student interaction with teachers and peers and is supported by Vygotsky's theory. In contrast, can other alternative programs assist at-risk students when full-day kindergarten is not an option?

The importance of kindergarten and the benefits of full-day kindergarten.

Kindergarten is a beneficial year in initiating the educational success of young children (Vecchiotti, 2001). In the past, the focus of kindergarten was to enhance a child's social, developmental, and cognitive levels. Today, kindergarten programs have adjusted the curriculum by shifting from a social and developmental approach to a stronger cognitive and academic approach to meet the ongoing demands for higher standardized scores on state assessments (Vecchiotti, 2001). Teachers and administrators struggle to find the best methods to reach all students.

Trehearne (2003) states that one of the most important goals for kindergarten is to have students understand the structural elements and organization of print. Students must have some basic phonemic awareness and understand that spoken words can be broken into smaller chunks. Kindergarten must promote a love of learning and develop students who are confident learners by helping them feel successful.

There has been ongoing debate among educators, parents and researchers about the length of the kindergarten day. Most research supports the fact that full-day programs are more effective for students when they focus on the variables that are instructionally effective (Plucker & Zapf, 2005). Plucker and Zapf (2005) comment on the importance of quality verses quantity of the kindergarten experience and found that the added time in a full-day program changes the nature of activities that occur in that program. Teachers in full-day programs use more of the instructional strategies that researchers recommend to promote student learning. They have more time to meet the individual needs of students. More time can be devoted to working with students who are at-risk in a full-day program.

A number of significant benefits are associated with full-day kindergarten programs. Elicker and Mathur (1997) stated that all children benefit from a full-day program, especially at-risk students. Full-day programs offered additional time; children experienced less frustration while learning, and were able to develop interests through these learning experiences. Cryan, Sheehan, Wiechel, and Bandy-Hedden (1992) found that children who attended full-day kindergarten exhibited more independent learning, classroom involvement, and productivity in work with peers, as compared to children attending half-day programs. Elicker and Mathur (1997) and Cryan et al. (1992) found that there were social benefits for students who attended full-day programs.

The importance of early intervention including additional time. Students who fall behind rarely catch up (Fielding, Kerr, & Rosier, 2004). Early intervention in reading has been related to the successes students experienced later in their academic years (Nielsen & Cooper-Martin, 2002). Allington (1998) found there is an 88% probability that a student who is a poor reader at the end of grade one will remain a poor reader at the end of grade four. McGill-Franzen (1992) found that a child who is eight years old and cannot read is a student at-risk.

Engaged learning time has an impact on student learning. Researchers (Black, 2002; Callison, 1998; Millot & Lane, 2002; Smith, 2000; Zimmerman, 2001) support the importance of providing enough time for students to be successful learners. Black (2002) encourages educators to use time in better ways to support student learning.

Instruction in phonological awareness. Enhancing children's letter knowledge and phonological awareness should be a priority goal in the kindergarten classroom (Snow, Burns, & Griffin, 1998). Adams (1994) states that "pre-readers ability to recognize and name

letters is the single best predictor of first-year reading achievement with student ability to discriminate phonemes auditorally, ranking a close second" (p. 44). Letter recognition must become automatic. Adams found that the second best predictor of reading success is the student's ability to discriminate between phonemes or individual letter sounds. It is important for these skills to be automatic, so attention can be focused on comprehension. For these reasons, it is important to find out the effect of providing additional direct, explicit instruction in phonological awareness to at–risk kindergarten students.

Research Questions and Hypotheses

By using a systematic approach, this research addressed the following questions:

Research question 1: Is there a significant difference in reading achievement for at-risk students participating in a half-day extended Kindergarten Buddy Program as compared to students attending half-day kindergarten without an extended program and those attending full-day kindergarten without an extended program? (As measured by The Gates MacGinitie Reading Test)

Hypothesis 1: Reading achievement of students who attend the Kindergarten Buddy Program will be significantly higher than for those students enrolled in the half-day program and at least as high as those participating in a full-day program.

Research question 2: Is there a significant difference between students' scores for those attending a half-day extended Kindergarten Buddy Program, half-day kindergarten without an extended program, and full-day kindergarten without an extended program on the Inventory of Skills from winter 2007 to spring 2007? (As measured by the Kindergarten Inventory of Skills) (Appendix A).

Hypothesis 2: There will be a significant increase in the scores on the Inventory of Skills of the students enrolled in the half-day extended Kindergarten Buddy Program from the winter 2007 to spring 2007. There will be at least no difference between students' scores between the half-day extended Kindergarten Buddy Program and the other groups.

Overview of Methodology

This quantitative study examined the impact of additional instruction in phonological awareness and its effect on reading achievement for at-risk kindergarten students. A post-test only design in which one group received a treatment was conducted to answer research question 1. There was one dependent variable: reading achievement, and three levels of the independent variable: full-day kindergarten without an extended program, half-day kindergarten with additional phonological awareness instruction (Kindergarten Buddy Program) and half-day kindergarten without an extended program. An ANOVA was utilized to determine if there were significant differences in reading achievement scores as measured by the Gates-MacGinitie Reading Test between half-day Kindergarten Buddy students' scores and students' scores in the half-day kindergarten without an extended program and full-day kindergarten without an extended program.

A quasi-experimental design was conducted to answer research question 2. There was one dependent variable: the Kindergarten Inventory of Skills scores for kindergarten learners and three levels of the independent variable: full-day kindergarten without an extended program, half-day kindergarten with additional phonological awareness instruction (Kindergarten Buddy Program), and half-day kindergarten without an extended program. Differences over time were analyzed using a repeated measures ANOVA to determine if

there is a significant difference on the means of the scores, as measured by the Inventory of

Skills.

CHAPTER TWO: REVIEW OF THE LITERATURE

The review of the literature is divided into four sections. The first section focuses on the Russian developmental psychologist Lev Vygotsky. His child development theory is the underlying theory for this research project. The second section summarizes the importance of kindergarten and the benefits of a full-day kindergarten program. The third section concentrates on the importance of early intervention including additional time for at-risk students. The final section focuses on the importance of phonemic awareness instruction.

Lev Vygotsky's Child Development Theory

Educational psychologist Lev Vygotsky (1978) believed a child's world is shaped by family, community, socioeconomic status, education, and culture. This understanding of the world forms from the values and beliefs of adults and other children. Adults, such as teachers and parents, and peers, help a child create and understand unfamiliar concepts by providing supportive information and helping a child participate in new learning skills (Berk & Winsler, 1995). Vygotsky established core principles of a social development theory of learning which include: social interaction and its dramatic impact on cognitive development, biological and social development that are not learned in isolation. Learning is, therefore, a combination of social interactions among students, teachers, parents, coaches, peers, and educational experts (Mooney, 2000).

Vygotsky theorized that children are strong independent learners but require educational guidance. His theoretical framework is highly interesting and complex. He stated that biological and cultural development does not occur in isolation; one must consider social and cultural factors as he or she contemplates the development of human

intellectual capabilities. Vygotsky stated that good learning is one step ahead of development (Mooney, 2000).

Vygotsky's framework for understanding the cognitive development of children is a well-known theory. Social interaction shapes continuous and gradual changes in students. Social environment impacts children's development as they are pulled into the learning environment with adults and peers. Children are introduced everyday to formal and informal concepts which have an impact on their language and learning (Vygotsky, 1978).

Language is extremely important in the development of children, it provides the necessary tools to interpret, discuss, and learn. Vygotsky believed that language is the vehicle children use to become independent learners. He believed that children should have ample opportunities to talk and write about their learning with peers and adults. As children internalize language, they independently use it. Learning is accomplished through a cycle of exterior and interior prompts that are adapted by the child as they comprehend language (Mooney, 2000).

Vygotsky's work focused on social contexts which influence the attitudes, beliefs and thinking processes of young children. He believed that culture impacts the thinking process (Moll, 1990). Social contexts and their significant influence on young children are clearly outlined by Vygotsky. A social environment is beneficial in influencing children's attitudes and allows them to share their beliefs and thoughts (Mooney, 2000). A positive social environment is especially beneficial to a child's attitude, because it allows him or her to begin to share beliefs and thoughts. He explained that personal and social experiences cannot be separated because social and cognitive development are

parallel experiences that build upon one another. Careful evaluation of a child's social ability should be considered as valid as scores on a test of one's intelligence. Vygotsky believed that children learn from each other every day. They develop language skills and grasp new concepts as they speak and exchange language. Similar to Piaget, Vygotsky believed that language and social development build upon each other. A child's interaction with peers helps construct knowledge. Interactions with adults continues to advance a child's intellectual and social awareness (Berk & Winsler, 1995).

Vygotsky's theory stressed the belief that children co-construct knowledge as a reflective as well as social process. The new information is transferred by the learner as he or she creates personal representations of this new learning. Piaget believed children construct knowledge with predominately physical objects; however Vygotsky believed that children construct knowledge through social interaction (Mooney, 2000).

Zone of proximal development. Vygotsky's social development theory supports the belief that small group instruction is one way to improve student learning. A component of this theory known as the zone of proximal development (ZOPD) is the gap between what a child can accomplish independently, which is said to be contained within one's zone of current development (ZOCD) and that which a child can accomplish when he or she is under the guidance of a more knowledgeable other. This more knowledgeable other may be an adult, teacher or peer who has greater understanding or abilities in a certain area. Vygotsky believed that when a child was in this ZOPD, learning took place (Mace, 2005).

Children require guidance to extend learning activities which is provided in the ZOPD. According to him, ZOPD "is the distance between the actual development levels

as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). ZOPD is the distance between the most difficult task a child performs alone and the most difficult task a child performs with assistance (Mooney, 2000).

According to Vygotsky, new learning leads to development evidenced in the ZOPD. A child's undeveloped skills, concepts, and abilities emerge with appropriate support and guidance. In order for the new learning to be meaningful, Vygotsky believed that the process must include two features: subjectivity and scaffolding. Subjectivity occurs when two students have two different understandings of a task but eventually create a common understanding. Scaffolding occurs when social support is provided by the teacher as students work to exceed their current understanding and extend their learning. Successful subjectivity and scaffolding assures that a child's task performance will increase (Berk & Winsler, 1995).

Observation of each child's social and learning process is of the utmost importance according to Vygotsky and astute educators (Mooney, 2000). Teachers must accurately access what is within a child's ZOPD and these recorded notes should become a component of the curriculum planning. Due to the research of Vygotsky, curriculum construction has become more and more significant in each child's educational plan. A child's cognitive development is affected not only by his or her physical development, but by social surroundings as well. This theory encourages educators to plan curriculum that extends knowledge and scaffolds learning by establishing an educational environment where competence is stretched and challenged (Mooney, 2000).

The concept of ZOPD is applied to both instruction and diagnosis according to Vygotsky. He stated that good instruction marches ahead of development and leads it. Scaffolding should be incorporated in learning programs as interactional support in the form of adult to child dialogue and structured by the adult to maximize the growth of the child's functioning. In scaffolding activities the teacher interacts with unseen processes such as the strategies used by the child to produce overt responses to reading and writing (Berk & Winsler, 1995; Mooney, 2000).

Vygotsky believed that teachers and students should collaborate so that learning becomes a reciprocal experience. Therefore, material presented in the classroom should be based on what is deemed unfamiliar to the student. This unknown material is determined to be just beyond the student's current level of understanding. It is then presented by a peer or an adult through guided instruction known as scaffolding. Scaffolding is guidance. This guidance is gradually taken away as student's learning increases and independence in completing a particular task is achieved (Mace, 2005).

Informed educators consider Vygotsky's theory when making decisions directly connected to educating students. Teachers must support students as they internalize higher levels of thought processes that are activated through language and social interaction (Berk & Winsler, 1995).

The Importance of Kindergarten and the Benefits of Full-day Kindergarten

Improving student achievement is a major goal for all educators. Teaching students to read is the top priority for elementary schools and educators (Boyer, 1995). Students enter kindergarten with many skills but with different academic and social levels. Educators measure and test students entering kindergarten to predict reading success. The four most

accurate measures of successful reading are: alphabet letter recognition, alphabet letter sound recognition, phonemic awareness, and the ability to print his or her first name (Fielding, Kerr, & Rosier, 2004).

According to Trehearne (2003) a kindergartener must exit his or her first year of school understanding the structural elements and organization of the printed word. Students must acquire basic phonemic awareness and comprehend that spoken language can be separated into smaller chunks.

Effective developmentally appropriate kindergarten programs include literacy skills for students as they: develop both a rich vocabulary and a deep understanding of many concepts and language structures, develop reasoning, creative thinking, and inquiry skills, learn that written language is a system for representing oral language, learn the concepts about print, learn that speech can be segmented into small units of sound, learn to recognize letters and their corresponding sounds, recognize their names in print and a few other familiar and high frequency words, and begin to see themselves as readers and writers. (p 17)

The benefits of full-day programs. Since the 1970's the number of U.S. children in full-day kindergarten has more than tripled (Education Commission of States, 2003). There are a number of reasons, social and economic, as well as educational, why full-day kindergarten has experienced significant growth. The increase in single-parent and dual-wage-earner families has greatly expanded the need for all-day, out of the home care for young children (Rothenberg, 1995). The Education Commission of States (2003) stated that 60% of kindergarten students in the United States attend a full-day program.

There has been a movement from half-day to full-day programs in order to provide students with the necessary experiences in language development, learning development, and social interaction (Viadero, 2005). Most research supports the belief that full-day kindergarten is more beneficial than half-day kindergarten (Cryan, Sheehan, Wiechel and Bandy-Hedden, 1992; da Costa, et al., 2001; Elicker & Mathur, 1997; Hough & Bryde, 1996; Viadero, 2005; Zakaluk & Straw, 2002). Kindergarten is the first schooling experience for many students, especially for minority students and students who come from lower economic families. Researchers state that due to families' socioeconomic level, poor language acquisition and limited English many students are not entering kindergarten with the skills needed to be successful by the end of the year (da Costa, et al., 2001; Plucker & Zaft, 2005). The positive outcomes associated with full-day kindergarten appear to be larger for disadvantaged students (Plucker, Eaton, Rapp, et. al, 2004; Plucker & Zapf, 2005).

Blades (2002) stated that there seems to be agreement that a quality kindergarten experience is valuable for children. "Full-day kindergarten is not the answer to all of the problems in education, but the growth in full-day kindergarten does represent an expanding commitment to provide high-quality education and care for all young children in the United States" (Elicker, 2000, p. 10). Communities in the United States are increasing the time young children are in kindergarten. Creating and maintaining a high quality program must be seriously considered by school districts (Elicker, 2000).

Cryan, et. al., (1992) found the success of full-day kindergarten and a positive environment increased achievement in future years. A statewide study designed to investigate effects of full-day, half-day, and alternate-day kindergarten programs

compared the following data: achievement, grade retention, special education services, and classroom behavior. This study compared half-day students (2.5 hours per day), alternate-day students (5 days in 2 weeks), and full-day students (5 hours per day) and found that full-day students clearly performed higher on all assessments. Two studies were completed and the findings linked the full-time experience with positive growth not only in areas tested but this growth extended into first grade (Cryan, et. al., 1992). Full-day kindergarteners were better adjusted to first grade, and more likely to socialize in a positive way. Full-day kindergarteners had a significant difference in independent learning, involvement in classroom activities, productivity with peers, and approach to the teacher (Cryan, et al., 1992).

Results from the study showed that children who attend pre-school prior to kindergarten experience a greater success in school than those who do not. Participation in the full-day program was positively related to school performance up to the second grade. Cryan, et al. (1992) agreed with Plucker & Zaft (2005), da Costa, et al., (2001), that prior attendance in preschool for disadvantaged children was beneficial.

Hough and Bryde (1996) conducted a study which compared full-day kindergarten programs to half-day kindergarten programs. The study consisted of six full-day schools and six half-day schools. Data were collected through classroom observations, video and audio taped interviews, norm-referenced achievement tests and parent and teacher surveys. The study found that students who attended full-day kindergarten were more successful when compared to their half-day counterparts. The full-day students outperformed the half-day students on language arts assessments and norm-referenced achievement tests. Hough & Bryde (1996), like Elicker & Mathur

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(1997), both found that full-day programs provided more small group activities,

additional opportunities for social interaction and more success in first grade. In addition,

parents of full-day students stated they were more satisfied (Elicker & Mathur, 1997;

Hough & Bryde, 1996).

Elicker and Mathur (1997) conducted a study in a middle class Midwest

community. Four full-day and eight half-day classes were observed over a two-year

period. The results reflected 69 full-day students and 110 half-day students. Children

were randomly assigned to groups and data were collected over a two-year period.

Children were observed in one minute-random intervals which reflected teacher directed

activities, child initiated activities, and socialization or peer activities. Teachers and

parents were also interviewed for data collection.

Elicker and Mathur (1997) established two major goals in their research. The first

was to develop a comprehensive approach for documenting the findings of a full-day

kindergarten program and the second was to address any issues raised by supporters and

critics of a full-day kindergarten program. Five research questions were studied:

What do children accomplish in the full-day program? How are teachers affected

by a full-day kindergarten? How do parents perceive a full-day program? How are

the children's academic outcomes affected? Will full-time kindergarten reveal

academic growth in the second year? (p. 462)

The researchers found a variety of benefits of full-day programs as compared to

half-day programs. Observations revealed that full-day programs had more child initiated

learning activities and more teacher directed individual activities. The study found

children in the full-day classes were initiating more learning activities and received more

one-on-one instruction from teachers. Full-day students spent less time in teacher directed groups than the half-day students. Significant findings were found in documenting the program in the second year (Elicker & Mathur, 1997).

The full-day program provided teachers with the flexibility to design a variety of instructional activities, as well as meet individual needs. The researchers also found that teachers saw full-day children as better able to initiate and engage in flexible lessons. Additional time permitted students to explore ideas more deeply and respond to challenges which met their needs. Extended time helped teachers interact more closely with students and respond more quickly to parents. Teachers felt students in full-day classes had an easier transition into first grade. Teachers found that there was more time to get to know students and parents with fewer students to teach and they were in favor of increased contact time (Elicker & Mathur, 1997).

Alber-Kelsay (1998) conducted a study with two groups of first grade students in New Jersey. Group one consisted of 16 children who participated in a full-day kindergarten program and the second group had 61 children who were enrolled in a half-day kindergarten program. The findings showed that full-day kindergarten children had significantly higher scores than the half-day students in all areas of the portfolio assessment, but in particular, spelling and sight vocabulary.

The length of the kindergarten day is important in meeting the demands of kindergarten. More time can be devoted to working with students who are at-risk in a full-day program (Plucker & Zapf, 2005). Children receive a stronger educational experience when they are enrolled in a full-day kindergarten program (Viadero, 2005). Viadero (2005) conducted research based on federal data drawn from studies involving

8,000 public school kindergarteners. This study represented a sample drawn from the entire United States which differed from most studies that usually focused on smaller samples representing localized areas. Viadero (2005) reported that more than half of this nation's children attended full-day kindergarten and the majority were from low income neighborhoods in programs funded by the United States government through Title I funds. The expense of these programs is one reason every public school in America does not have a full-day program. It is reported that full-day kindergarten programs are more prevalent in the South and Midwest (Viadero, 2005).

da Costa and Bell (2001) found that a full-day kindergarten experience enabled students of low socioeconomic or educationally disadvantaged backgrounds to catch up and in most cases exceed the pre-requisite skills for reading. The study found that "children in the full-day program had significantly greater growth in the pre-requisite skills for reading than did the children in the half-day kindergarten program" (p 17).

Brewster and Railsback (2002) found that full-day kindergarten has increasingly become a popular scheduling option in school districts in the United States. These researchers noted it was difficult to draw conclusions from existing research partly because kindergarten practices and student populations varied greatly and students were not randomly assigned to groups. They found that multiple factors including student needs, availability of school space, teaching staff, funding, and wishes of the school community needed to be taken into consideration when choosing an appropriate kindergarten schedule.

Zakaluk and Straw (2002) found that attending full-day kindergarten was superior to attending three-quarters or half-day kindergarten. They also found that more time was not

enough: instructional programs must focus on developmentally appropriate literacy activities that engage, stimulate and challenge students. Full-day programs have become more popular in the United Sates over the past years. Many school districts must weigh the benefits of full-day verses half-day programs in their communities (Rothenberg, 1995).

The Center for Evaluation and Education Policy (2004) reported findings from a study on the effects of full-day kindergarten programs in seven elementary school districts conducted by superintendents in Indiana. The study collected data on full-day kindergarten and its effect on attendance, academic achievement, grade retention, social aspects, behaviors, special education referrals and disadvantaged students. The benefits of a full-day program were found in the areas of academic achievement, grade retention, social aspects, and special education referrals.

Teachers and parents. Elicker & Mathur's (1997) work showed that teachers of full-day classes had more opportunities to meet individual needs and assess student's social behaviors. Teachers presented more thematic units which fostered connections across the various curriculum areas. Teachers also increased their ability to communicate with parents due to the fact that they had fewer students. In addition, there was more flexible time for students to work cooperatively in a variety of group settings (Rothenberg, 1995). Consequently, teachers have found a full-day program to be a beneficial program (Elicker & Mathur, 1997).

Parents also felt there were benefits to the full-day program. Parents believed more attention was paid to their child and they appreciated the more relaxed pace of the full-time day. They liked the in-depth exploration of topics. Parents of full-day students reported a higher level of satisfaction than parents of students in half-day programs,

although both groups of parents perceived their students to be in a high quality program (Elicker & Mathur, 1997; Rothenberg, 1995). Full-day programs eradicated the cost of running buses twice a day, employing crossing guards, and full-time working parents had less stress for after school child care (Rothenberg, 1995). It also allowed siblings to be on the same schedule, which was beneficial to families. Elicker and Mathur (1997) concluded that participation in a full-day program provided enjoyable and developmentally appropriate experiences, with some academic and developmental advantages over the traditional half-day program. They found no detrimental effects of a full-day program.

Most people believe that full-day kindergarten is an optimal program available to school districts (Elicker & Mathur, 1997; Plucker & Zapf, 2005). Unfortunately, due to financial constraints including school budgets, busing, space and staffing limitations, full-day kindergarten programs are not always a feasible solution. There are many communities that cannot afford full-day programs and need to address the more stringent curriculum demands in another way (Rothenberg, 1995). Many students need additional time to acquire the skills to be successful learners. How do we level the playing field for those students who need extra support in districts that cannot afford a full-day kindergarten program? There must be ways to provide additional time and support to students who need additional support (Black, 2002).

The Importance of Early Intervention Including Additional Time

There is a growing concern that many students are not ready for kindergarten (Pianta, 2002). Readiness skills are linked to family income and the fact that lower-income children have fewer books, less early learning opportunities, and other literacy experiences as compared to students from middle and upper income families (American Federation of Teachers, 2002). Children from low-income families who are also English language learners are at risk.

Early intervention. Teachers and administrators struggle to find the best methods to educate all children. Students enter kindergarten with varied skills and at different academic and social levels. Kindergarten is the first schooling experience for many students, especially for minority students and students who come from lower economic families. Research tells us that due to families' socioeconomic level, poor language acquisition, and limited English many students are not entering kindergarten with the skills needed to be successful by the end of the year (da Costa & Bell, 2001; Viadero, 2005)**.**

Early intervention in reading has been related to success students experience later in their academic years (Nielsen & Cooper-Martin, 2002). Enhancing children's letter knowledge and phonological awareness should be a priority goal in the kindergarten classroom (Snow, 1998). Adams (1994) stated that the ability to recognize and name letters is the single best predictor of first-year reading achievement. A secondary predictor of reading success is the ability to discriminate between phonemes and individual letter sounds. Vowel and consonant recognition must become an immediate part of the child's learning foundation. Phonological awareness is critical in acquiring learning skills and manipulating phonemes (Griffith and Olson, 1992). It is important for

these skills to be automatic so that the teacher can move forward with comprehension strategies and skills (Nielsen & Cooper-Martin, 2002).

Entering kindergarten is the first formal learning experience for many children. It is especially imperative for economically deprived students to be provided with a positive environment which promotes language acquisition in both reading and writing (da Costa & Bell, 2001; Cryan, et al., 1992; Nielson & Cooper-Martin, 2002). Too often the economically deprived struggle so hard to "keep a roof over their heads," that there is little time devoted to reading or even speaking to the children (da Costa & Bell, 2001). Kindergarten teachers must devote extra time to students who have not been read to during the first five years of their lives. Providing a strong foundation in reading and writing helps individuals become independent learners who will not be dependent on others during their lifetime (Blades, 2002; Pianta, 2002). For these reasons it is important to find out the effect of providing additional direct, explicit instruction in phonological awareness to at–risk kindergarten students.

Issue of time. In the field of education, time, and the uses of time, have long been a concern. Lack of time in a half-day program can impede social, emotional, and academic achievement (Alber-Kelsay, 1998). In a half-day program, children's schedules are often disrupted during the day; many students attend another program for childcare services before or after kindergarten. Many times, half-day students do not attend school assemblies and field trips or don't have lunch or recess at school which limit social and enrichment opportunities (Rothenberg, 1995). Zimmerman (2001) believes in lengthening the school day and year. Black (2002), Carlson, Shagle-Shah & Ramirez (1999), Metzker (2001), Millot & Lane (2002), Smith (2000), and Zimmerman (2001) believe in

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restructuring existing time and using it better. Black (2002), Metzker (2001), and Callison (1998) found that more time in and of itself isn't necessarily the answer. The quality of teaching time is crucial. Millot & Lane (2002) and Smith (2000) found the known factors that subtract from teaching time including teacher and student absences, specialty days, and field trips need to be minimized.

"Student engagement and learning will tend to increase if teachers foster student motivation through a repertoire of interesting, innovative and thought-provoking instructional endeavors" (Metzker, 2001, p. 3). Metzker (2001) supported the position that it is the quality more than the quantity of instructional time that will impact student achievement.

Time and learning are strongly connected. Researchers (Black, 2002; Callison, 1998; Millot & Lane, 2002; Smith, 2000; Zimmerman, 2001) support the importance of providing enough time for students to process, practice, and express their understanding of new concepts. Black (2002) reported that the National Education Commission expressed concern that the educational system is a "prisoner of time." The Commission concluded: "Many schools operate on the faulty assumption that all students require the same amount of time to learn. They do not. Educators must use available time in better ways to help students" (Black, 2002, p. 59). Black discusses the importance of using time wisely and draws on past studies to advise teachers on how to improve learning time. "Not all engaged time is the same. Students are likely to have higher achievement when their time on-task involves interaction with their teacher rather than simply doing independent seat work" (Black, 2002, p. 60). The research encourages educational planning that places an emphasis on academic learning time, which is defined as "time

when students are attentive and on task, successfully learning and accomplishing

significant tasks" (Black, 2002, p. 60).

"Administrators are urged to view the allocation and management of time as one

of their most important and powerful functions" (Smith, 2000, p. 676). Smith revealed

the power and importance of time and encouraged administrators to become more

involved in this issue. There are huge blocks of classroom time that are ineffective. The

research found that factors such as school management, welfare programs, testing

policies, and organizational efficiency are disorganized and detract from strong

instructional time. This claim was supported by data collected through field notes, school

calendars and system documents (Smith, 2000).

Millot and Lane (2002) reported in their study that time is significantly correlated

to success in learning. The study suggested that time is actually the critical factor in the

educational process, and policymakers should consider establishing clearer guidelines to

extend time. Their report concluded:

> We find there is substantial room for improvement that could be achieved by
>
> manipulating the time within the year, the week, the day, and even the hour. There
>
> is considerable room to maneuver in the management of school life, without
>
> necessarily asking for additional resources" (p 24).

Similar to Smith (2000), Millot and Lane (2002) mentioned the potential that

teacher absence, physical plant issues, mischief and discipline issues, and tragedy all

have on actual teaching time. Smith also focused on calendar days such as parent

outreach time, science fairs, and field trips as intrusions of learning time. Smith was not

judgmental concerning these activities, but wanted each acknowledged as detractors of

direct instructional time. Administrators can impact and facilitate improved use of time and provide for real teaching and learning time from the existing school calendar (Smith, 2000).

National Education Commission. A report from the National Education Commission (NEC) on Time and Learning (2005), a reprinted edition of the 1994 report, advised school leaders to structure available time in better ways for the benefit of students. The NEC stated that time is a resource, not a barrier. They suggested that learning time be used in better ways. "Time must be unlocked to achieve the successes we need and should be adjusted to meet the individual needs of learners" (p. 31). "The flexible use of time can permit more individualized instruction. American students will have their best chance at success when they are no longer serving time, but when time is serving them" (p. 8).

According to the NEC, the most common approaches schools have implemented to create more time on task include redesigning available time, employing technology, extending the school day or year, providing time for professional development, and providing support services for children or families. In the original "Prisoners of Time" report, the Commission proposed eight recommendations to increase emphasis on better uses of time. These were:

1. Reinvent schools around learning, not time

2. Fix the flaw: use time in new and better ways

3. Establish an academic day

4. Keep schools open longer

5. Give teachers the time they need

6. Invest in technology

7. Develop local action plans to change schools

8. Share the responsibility (p. 29).

The NEC (2005) criticized myths directed at educational issues, specifically, that teachers, parents, and administrators, "expect world-class academic performance from our students within the time-bound system that is already failing them" (p. 13). This supplementary volume tells how selected schools experimented with uses of time. One suggestion from the elementary school studies stated the importance of promoting school-based interventions to increase attendance, achievement, a sense of self-worth, and overall student development. Many of the schools began programs to open schools throughout the year for purely educational reasons. In one, the following was reported: "In the first year of the program, extended year Kindergarten students clearly outperformed a matching group of traditional-year students in reading and general knowledge" (p.11). Another year-round school reported these advantages: enhanced options for enrichment and remediation throughout the year, more creative possibilities for student grouping, better use of buildings and the savings of millions of dollars in new school construction.

Use of time. Callison (1998) defined time on task as when a student is actively engaged in a learning activity. The author invokes Bloom's Taxonomy as the hierarchy of skills one must master in order to fully learn. This approach focused on the relationship between the amount of time spent, and when time is spent. Callison (1998) emphasized the importance of "timing the instruction to take place at the time of need" (p. 33).

Zimmerman (2001) stated that better use of available time is needed in our classrooms not just more time. An increase in engaged learning time, extended days, and years are likely to increase student achievement (Zimmerman, 2001). When time is not well utilized, increasing it is not likely to produce much student gain. School-level decisions and strategies for better time management (blocks, extended time) can expand the time available for student learning. Standards-based education increased the need to give students more academic learning time. Engaged time, or time-on-task, is usually only a small part of the allocated time students spend in class. There is even less academic learning time, defined as "the precise period when an instructional activity is perfectly aligned with a student's readiness and learning occurs" (p. 7). This is the kind of time that needs to be increased through the creative use of instructional time. Research suggests three notions about time: There is little relationship between allocated time and student achievement. There is some relationship between engaged time and student achievement. There is a greater relationship between academic learning time and student achievement. "School districts should start by making better use of existing time through three key factors: classroom management, appropriateness of instruction/curriculum, and student motivation" (p. 11). Educators must make every minute and every hour count (Zimmerman, 2001).

Instruction in Phonological Awareness

The importance of phonological awareness in the teaching of reading has been researched and debated over many decades (National Reading Panel, 2000). Today, this debate continues between arguments supporting both phonics-based approaches and whole-language approaches. The best way to teach reading has been politicized by many resulting

in what is known as the "reading wars". This heated debate continues to this day. The

National Education Association (NEA) stated that "a complete reading program is analogous

to a balanced diet" (NEA, 2007). They further stated that "reading is the gateway to learning

in all content areas and essential for achieving high standards" (p.6). Based on these views,

the importance of phonemic awareness instruction and a balanced approach for a complete

reading program is encouraged by the NEA (2007).

A significant study which won the International Reading Association Outstanding

Dissertation Award in 1989 examines the role of phonemic awareness in the

developmental reading process of kindergarteners and first grade students (Cunningham,

1990). Children were randomly assigned to one of three groups: skill and drill instruction,

metacognition instruction, and a control group. Cunningham (1990) conducted a study

that examined the role of phonemic awareness in the development of reading in

kindergarteners and first graders. For purposes of the study, forty-two kindergartens, who

were never provided with formal prereading instruction, and forty-two first grade

students, who had been receiving reading instruction from a basal reading series

containing phonics, word recognition, and reading comprehension, were selected from a

middle-class elementary school in the Midwest in order to determine what role phonemic

awareness holds in the development of reading skills and whether the method of

phonemic instruction impacts the development of those skills. They were given a reading

achievement test, three measures of phonemic awareness, and an aptitude measure.

Students were arranged in either a control condition or one of two experimental groups.

All three groups received instruction twice a week for ten weeks in the skill of how to

segment and blend sounds. The metacognition group received instruction that

emphasized application, value and utility of phonemic awareness in addition to the procedural knowledge of segmenting and blending. The control group received instruction in which students read stories and answered comprehension questions (Cunningham, 1990).

The first experimental group was taught phonemic awareness and decoding skills as a supplemental curriculum (not part of the regular reading curriculum) by an experienced teacher who implemented a skill and drill type of instruction. This instruction consisted of the teacher reading aloud a story which focused on one particular skill, the teacher then modeled the skill followed by students copying the modeled example, and closing with the students providing and independently modeling their own relative example of what had been taught. Because of the supplemental nature of this curriculum, students in this experimental group received more time to learn segmentation and blending but lacked the direct explicit instruction of how to apply the learned strategies in real world reading situations (Cunningham, 1990).

The second experimental group was taught the same concepts as the first experimental group; however, the teacher implemented a meta-level type of instruction. For purposes of this instruction, the experienced teacher directed the students to "reflect upon their own thinking regarding phonemic awareness and explicit discussion of the goals and purposes of learning phonemic awareness to improve overall reading ability" (Cunningham, 1990, p. 435). This instruction began as the teacher stated to the students the purpose of the day's lesson at the onset of each lesson, reviewed the previous day's material and linked it to the current day's focus, provided students with a model of the phonemic strategy as well as specific references on how and when to use the strategy in

reading situations, and had students practice the modeling of the strategies in real world reading opportunities (Cunningham, 1990).

The students in the control group did not focus on phonemic awareness. Instead, during their instructional time, the experienced teacher read aloud a story then had the students respond to several comprehension-type questions, listen to a summary of the story, and discuss what they liked and disliked about the story (Cunningham, 1990).

All students, regardless of the group in which they participated, received 10 weeks of training. The instruction was administered in small-group settings of 4 to 5 students twice a week for 15-20 minutes per session. After the pre-test and post-test results were examined, it was determined that "the type of instruction did not make a significant difference in children's subsequent level of phonemic awareness" (Cunningham, 1990, p. 438). Kindergarten students who received the meta-level approach to teaching did significantly better in the area of phoneme deletion tasks and the first graders who received this instruction did significantly better in their overall reading achievement (Cunningham, 1990).

Therefore, it was determined that whether the method of phonemic instruction is skill and drill or meta-level, both are effective ways to teach phonemic awareness. However, because the first graders' overall reading achievement improved, it was determined that "phonemic awareness is highly implicated in the beginning stages of reading development and is a necessary component of reading achievement" (Cunningham, 1990, p. 440).

The results of the study showed that phonemic awareness is related to reading achievement at the beginning stages of reading development. Both kindergarten and first

graders did better on the standardized measures than the control group. Although a

significant improvement in reading achievement was found in both beginning readers and

pre-readers, the readers in first grade performed significantly better than the beginning

readers in kindergarten due to the ongoing discussion of value and application of

phonemic awareness. Cunningham (1990) found for children who are involved in a

reading program, a meta-cognition approach is more effective than just presenting skills

independent of the application.

Ball and Blachman (1991) studied groups of kindergarteners to see if five-year

olds could be taught to segment words into phonemes and to explore the effects of

segmentation, letter-name, and letter-sound training on early reading and spelling ability.

In the study, participants were selected from six kindergarten classrooms. Children were

randomly assigned to one of three groups: phonemic awareness training, language

activities, or a control group.

There was no significant difference among the groups for age or gender at the

$p>.05$ level before the intervention. The researchers found that groups of kindergarten

students can be taught to segment words into phonemes. They also reported that the

phoneme group outperformed both the language and control groups. There was no

difference between the language and control group. Additional findings showed that the

phoneme group that received segmentation training made significant gains on all three

types of measurement. The gains were significantly higher than the other two groups.

This study also found there was no significant difference among the three groups in

letter-name knowledge. By the end of kindergarten, regardless of the group, most

students knew a high percentage of letter names. The phonemic awareness group had

significantly higher letter-sound knowledge than the other two groups. The study found

that the students in the phoneme groups did significantly better in their ability to read

words. The results indicated that letter-name and letter-sound training, when provided

without phoneme awareness training, is not sufficient to improve early reading skills

(Ball and Blachman,1991).

The spelling reading findings were similar. The group that received the

segmentation training and the letter-name and letter-sound instruction had significantly

higher scores than the language and control groups. The study found that students must

be aware that words can be broken into phonemes and each phoneme corresponds to a

symbol in order to be successful readers and spellers. This research was in agreement

with other studies (Ball & Blachman, 1991; Bredekamp & Copple, 1997; Cunningham,

1990; Griffith & Olsen, 1992; Trehearne, 2003) that indicated that phoneme

segmentation instruction is effective in teaching kindergarten children to segment words

into phonemes.

Ball and Blachman (1991) found "the children who received training in phoneme

segmentation and in letter-names and letter-sound were more able than children in the

language or control group to match the written symbols to the sound segments of the

word" (p. 63). They found that the significance of early phoneme awareness extended

beyond reading and spelling and stressed the importance of providing opportunities for

all children to develop automaticity and speed at the decoding level so they were able to

put energy into higher level processes such as comprehending what they read.

The International Reading Association (IRA) and the National Association for the

Education of Young Children (NAEYC) (1998) in a joint position statement reported that

students who do not achieve phonemic awareness by the middle of first grade have less chance of becoming successful readers. This report stressed the importance of phonics in comprehensive reading programs and suggested that reading instruction provide a print rich environment and ample opportunities for students to practice writing and listening to the spoken word. Explicit instruction in the alphabetic principle provides students with the confidence to independently read and write. The IRA stated that phonemic awareness predicts reading success. Its research revealed that children need different forms of phonemic awareness instruction and experiences based on their needs and abilities (IRA & NAEYC, 1998). Teachers must assess their students and provide phonemic support as children develop the ability to manipulate sounds of oral language. They must provide phonemic awareness instruction as needed. Phonemic awareness in children developed gradually over time and a student's ability to manipulate sounds of oral language progressed into more sophisticated levels of control (IRA & NAEYC, 1998; NRP, 2000).

In 1998, the National Reading Panel (NRP) (2000) gathered information at public hearings around the United States. Many key themes were revealed during these hearings and the following recommendations were made by the NRP:

1. It is imperative that at risk children be identified as early as possible

2. Phonemic awareness, phonics, and outstanding literature be introduced to all children as early as possible

3. Teaching young children to manipulate phonemes is highly effective across all literacy domains

4. Phonemic awareness instruction teaches children how to manipulate speech sounds

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5. Phonemic awareness assists young learners in preparation for reading and writing (NRP, 2000, p. 1-2).

Technical skills such as learning letters, phonics, and word recognition must be taught to individual children through small group activities as needed to accomplish the larger goals. "The sub-skills of phonics should not stress learning rules but rather develop an understanding of systematic relationships between letters and sounds" (Bredekamp & Copple, 1997, p. 70). This position was reinforced by the NAEYC and the IRA (1998); they noted that the goals of the language and literacy programs for young children are to expand their ability to communicate orally through reading and writing. Teachers must provide generous amounts of time and a variety of interesting activities to develop language, writing, spelling, and reading ability.

Children must be provided with many opportunities to see how reading and writing are useful. An abundance of activities to develop language and literacy through meaningful experiences, including listening and reading stories and observing print in use, are extremely beneficial to young children. "Participating in dramatic play, experimenting with writing by drawing, copying, and invented spelling all help in language development and literacy for four and five-year olds" (NAEYC, 1998, p. 55).

Carlson, Shagle-Shah, and Ramirez (1999) summarized the views of thirty-two successful urban Chicago principals regarding thirteen strategies for school improvement. Each principal demonstrated the ability to improve a failing school. The strategies include creating a consistent reading program, setting clear goals and standards, monitoring both students and teachers, investing in performance, instilling a love of learning through reading, and increasing time on task. The authors found that to create a

consistent reading program, schools must emphasize phonics and decoding in early grades. Clear goals and standards that focus on results must be established. Schools must place high value on early detection and remediation of student learning problems. Schools must begin assessment and monitoring in kindergarten (Carlson, Shagle-Shah, & Ramirez, 1999).

Like the Millot and Lane (2002) and Smith (2000) studies, Carlson, et al. (1999) discussed issues in student background, such as poverty, race and urban problems. The interpretation led them to believe that these factors need not be reasons for failure. "Students in urban schools can be very successful if the local conditions and school leadership are right" (Smith, 2000, p. 12). They concluded that it is important that policy makers and school leaders in Chicago and across the nation study and replicate these improvement strategies (Carlson, et al., 1999).

The National Reading Panel (2000) conducted a meta-analysis of the research related to phonological awareness. The results were formulated using statistics from fifty-two studies that satisfied the research criteria and ninety-six comparisons of treatment and control groups were found. For each comparison, three effect sizes were calculated to determine whether phonological awareness instruction improved students' phonemic awareness, reading, and spelling. The variables compared used effect sizes including type of test, time of test, type of phonological awareness training, uses of letters, size of groups, trainer, length of instruction, grade level, and socioeconomic status. The results of the study were positive. The overall effect size on phonological awareness outcomes was large at .86. The overall effect size on reading outcomes was moderate at .53 and the same for spelling at .59. The findings in this study showed that teaching children to

manipulate phonemes in words was highly effective across all literacy domains. In addition, it was determined that teaching children to manipulate phonemes in words was highly effective under a variety of teaching conditions with a variety of learners.

The NRP (2000) findings suggest that phonological awareness instruction was deemed to be most effective when children were taught to manipulate phonemes and especially when taught in small groups. Teaching phonemic awareness to children significantly improved their reading more than instruction that lacked any attention to phonemic awareness. The results led the panel to conclude that phonological awareness training was the cause of improvement in student's phonemic awareness, reading and spelling. The panel stated that some students needed more instruction in phonemic awareness than others with non-readers needing more instruction than readers. "The study found the effects of phonological awareness instruction on reading lasted well beyond the training and children of varying abilities improved their phonological awareness and their reading skills as a function of phonological awareness training" (NRP, 2000, p. 2-28).

Many studies have shown that performance on phonemic awareness tasks is predictive of success in early reading (Ball & Blackman, 1991; Bredekamp & Copple, 1997; Cunningham, 1990; Griffith & Olsen, 1992; Trehearne, 2003). Heightening phoneme awareness as soon as possible may help prevent some children from experiencing early reading and spelling failure. Researchers have consistently reported positive effects on reading that included a component with explicit instruction in sound-symbol association (NRP, 2000).

The National Education Association (NEA) (2007) and NRP (2000) stated that phonological awareness does not constitute a whole reading program. It is important to note that the NRP reminded teachers that phonemic awareness is a means to an end and the ultimate goal is to help students understand the alphabetic principle so they can learn to read and write. Phonemic awareness instruction was not a complete program, and much more is needed to be taught in order for students to acquire the skills needed to be competent readers and writers. It provided children with essential foundational knowledge in the alphabetic system, but a balanced approach was necessary. There are many ways to teach phonological awareness effectively, however the motivation of teachers and students was critical in their success. The NRP (2000) stated that it is extremely important to teach letters as well as phonological awareness to beginning readers. The NRP (2000) found students must be able to use letters to manipulate phonemes in order be able to transfer knowledge to reading and writing. The panel explained that learning letters is not an easy task for all students but it must become automatic so they can learn to read and spell. The NRP (2000) also found that small group instruction was the most beneficial way to deliver phonemic awareness instruction because students learn from each other and also want to do well in front of their peers.

Chapman (2007) explained the major finding about the research involved in phonemic awareness. Phonemic awareness is defined as the ability to detect each phoneme in words and phonological awareness is defined as the ability to hear alliterations, rhyming words, parts of words including beginning sounds, and phonemes. Children who have phonemic awareness are able to break apart words, into phonemes

and put them back together to blend and read words. Chapman (2007) stated that phonemic awareness is one of many abilities students need to be able to read and write.

The best way to assess students reading ability and phonemic awareness is through small group activities. Most kindergarten children develop phonemic awareness in a literacy rich kindergarten classroom. Concepts of print and language based activities must be stressed. Students must be able to apply phonemic awareness in real reading and writing situations (IRA & NAEYC, 1998). Language and literacy rich experiences are also extremely important for young children (Allington, 1998).

Chapman (2007) proposes that most children do not need direct explicit instruction in order to read, but all children benefit from engaging meaningful activities in phonological awareness. Direct instruction in phonemic awareness benefits many students but other methods particularly writing and invented spelling also can be beneficial to students (Adams, 1990; Allington, 1998).

Research supports the importance of teaching phonological instruction in the teaching of reading (Ball & Blackman, 1991; Bredekamp & Copple, 1997; Cunningham, 1990; Carlson, Shagle-Shah, Ramirez, 1999; Griffith & Olsen, 1992; Trehearne, 2003). In order for children to read and write they must have phonemic awareness. Direct instruction in this area can benefit at-risk students (Chapman, 2007).

Summary

Kindergarten teachers across the United States of America have serious concerns about children entering their classrooms. Areas of the most concern are a child's ability to follow directions, low pre-academic skills, inability to be independent workers, ability to work as a member of a group, and inability to communicate effectively (Pianta, 2002).

School districts must become more creative in providing support to the students who are not meeting grade level expectations. Half-day programs may not provide enough instructional time, especially for at risk students who require extra time and additional instruction. Therefore, it is imperative that school districts find alternate methods to extend the kindergarten day. Using time effectively and creatively must be a high priority in school districts. Administrators and teachers must find alternative ways to use the current allocated time effectively in order to provide students with the opportunities to work with peers and other adults to assist them in acquiring the skills needed to be successful. Research (da Costa, et al., 2001; Plucker & Zapf, 2005) shows that additional time found in full-day programs can be most beneficial for students but due to financial costs, is not always possible. For these reasons, this research project was conducted to investigate the effectiveness of providing additional instructional time in phonemic awareness, known as the Kindergarten Buddy Program, to at-risk students.

CHAPTER THREE: METHODOLOGY

In Chapter Three the research design is described as well as the methods and procedures used in this investigation including sampling procedures, description of instruments, data collection, and data analysis. Limitations pertaining to the study are discussed as well as internal and external threats to validity.

Description of the Setting, Subjects and Sampling Procedure

This research study was conducted in three elementary schools in two neighboring school districts located in Connecticut (see Table 1). The Strategic School Profiles (SSP) for the 2005-2006 school year were examined to gain specific information about the schools and the districts. Roxy (pseudonym), Connecticut is a small, suburban, middle socio-economic, culturally diverse town. Roxy has 18,067 residents with 3,221 students currently enrolled in five schools. There are three elementary schools, one middle school, and one high school in Roxy. The per capita income of Roxy is $28, 927. It has 5 public schools and 1 non-public school. The adult population without a high school diploma is 11.6%. The town of Shelly has a population of 74,848. The per capita income is $24,500. There are 17 public schools as well as 9 non-public schools in the district, 23.2% of the adult population do not have a high school diploma (Strategic School Profile (SSP), Connecticut State Department of Education (CSDE), 2005-2006).

Table 1

Types of Kindergarten Programs

School District (Pseudonym)	School Name (Pseudonym)	Type of Program	Number in sample	Hours of Instruction per day
Roxy	Bally and Rancher	Half-day Kindergarten Buddy Program	37	4 hours (3 hours 10 minutes plus 50 minutes for Buddy Program
Roxy	Bally and Rancher	Half-day kindergarten without an extended program	38	3 hours 10 minutes
Shelly	Hill	Full-day kindergarten without an extended program	17	5 ½ hours (Total program time 6 ½ hours including lunch and recess)

Bally and Rancher Schools (pseudonyms) are located in the Roxy School District in the same educational complex. Students were assigned to Bally and Rancher Schools based on the first letter of their last name. Both schools taught the same curriculum and used similar instructional practices. The kindergarten teachers in both schools met at least twice a month and shared plans and instructional strategies. Bally School is a traditional/regular school with grades ranging from PreK-3. In the 2005-2006 school year the total student enrollment was 505 students. Of that number, 3.8% of its students were eligible for free or reduced lunch, 10.3% came from a non-English speaking home, 94.2% of the kindergarten students had some type of preschool, nursery school or Headstart experience. Rancher School also is a traditional/regular school with grades K-3. Unlike Bally and Hill, it does not have a pre-kindergarten program. The enrollment in 2005-2006 was 424 students, 7.5% of students were eligible for free or reduced lunch. Students from a non-English speaking home comprised 9.7% of the population and 90.5% of kindergarten students had some type of preschool experience before entering kindergarten. Both Bally and Rancher house six half-day kindergarten classes, six first grades, six second grades and five third grades (SSP/CSDE, 2005-2006).

The full-time students in the study attended Hill School, located in Shelly School District. It neighbors the Roxy School District and is located in District Reference Group (DRG) H whereas the Roxy District Schools are in DRG D. "DRG is a classification of districts whose students' families are similar in education, income, occupation, and need that have roughly similar enrollment" (SSP/CSDE, 2005-2006, p. 1). Hill is a PK-2 traditional/regular school with 340 students. The percentage of students who qualified for free or reduced lunch was 29.1% and 21.5% of the students came from non-English

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speaking homes. Students who attended preschool, nursery or Headstart before kindergarten was reported as 69.1%. The average class size in the Hill kindergarten was 19.6 whereas in the Roxy District it is 18. Students' daily attendance in the Roxy district is 94.3% and in Hill was 95.3% (SSP/CSDE, 2005-2006).

All three schools had similar educational philosophies and provided a positive environment where students can be successful. After lengthy discussions with the principals and teachers of all the schools, they supported the importance of making a concerted effort to provide early interventions for their students. Bally's mission statement was a mnemonic using the title "Celebration." The mission of Bally included "celebrating diversity in a safe and caring community, excelling in all academic areas, learning to work together, enjoying a love of learning, being your best, recognizing and rewarding success, achieving goals, teaching students to become environmentally sensitive citizens, integrating technology, offering opportunities to become problem solvers and critical thinkers, and nurturing the whole child" (Bally Principal's report, school website #1, 2007, p. 2).

Rancher School "strives to provide a happy, secure and motivating environment where children can develop those skills essential for lifelong learning. To encourage each child to reach their full potential while developing pride, respect and acceptance of self and others" (Rancher Principal's report, school website #2, 2007).

The mission at Hill School is to provide an environment that produces independent, productive, and caring citizens. Hill School is proud to provide a sense of stability, an extended family atmosphere, trusting and honest relationships, a strong sense of community among teachers, students, and

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families, an individualized and customized instruction and assessment, improved

learning and achievement, a curriculum that builds on previous experiences and

prior knowledge, the opportunity to practice and solidify reading and writing

skills, and an interactive community of independent learners (Hill Principal's

report, school website #3, 2007).

Hill School was a circular, pod-like structure containing three special education

preschool classes, a full-day Kindergarten class, four half-day kindergarten sessions, four

grade one, and five grade two classes. Hill School was a culturally diverse learning

community that provided a strong literacy program which reflected the district's

commitment to early development of the key language basics of reading, writing,

listening and speaking. Like the Bally and Rancher Schools, regular classroom

instruction was supported with personnel through English as a Second Language (ESL),

speech, language arts, math and special area classes including physical education, art,

music, and media. All the kindergarten classes in the study used computers in the

classroom and in a lab to enhance the curriculum. All three schools had a social worker,

psychologist, and a full-time nurse. All three schools utilized a Child Study Team to

assist parents and teachers in providing strategies to help students be successful in all

aspects of learning. Hill School was a Title I school. (Hill Principal's report, school

website #3, 2007).

There are striking differences in the two districts. In Bally School the minority

population was 17.6%, Rancher School was 15.8% and Hill School was 44.4%. The Hill

School had 16.5% of students received ESL services whereas the Roxy Schools had 8.4

% receiving ESL services. The town where Hill School was located had a population of

74,848 which is 4 times the size of Roxy. In 2000, Shelly School District per capita income was $24,500 and the Roxy School District was $28,927 (SSP/CSDE, 2005-2006).

Bally School was a PreK-3 school which housed the district pre-school program for regular and special education children. Rancher School housed K-3 students. Both schools employed three full-time kindergarten teachers who taught three AM and three PM kindergarten classes. Students attended each day for three-hours and ten-minutes. The morning groups attended school from 9:00 A.M. to 12:10 P.M. The afternoon children attended from 12:20 P.M. to 3:30 P.M. Kindergarten students did not eat lunch or have recess in the half-day programs in the Roxy School District. Students were selected for the morning and afternoon classes based on the location of their homes in town. Buses picked up students from different areas of the town during the midday routes. Roxy School District was home to six private preschools. In Roxy, CT, 92.3% of incoming kindergarten students attended some type of preschool, nursery, or Headstart program. The average class size for the 2005-2006 school year was 18 students (SSP/CSDE, 2005-2006).

In the Roxy School District, parents registered their child for kindergarten and signed up for a screening session at one of the two elementary schools during February. Students were administered a readiness screening in May. Any child who received a low score was invited to participate in a summer program. In the summer program students attended classes for 90-minutes a day for eighteen days in July. They were taught pre-reading skills by reading paraprofessionals. The lessons were interactive and engaging. The students were introduced to letters and sounds. They sang alphabet and rhyming songs. Students did art projects that focused on the alphabet, tracing, and painting letters. They were exposed to

books about the alphabet, e.g., *Chicka Chicka Boom Boom* (Martin & Archambault, 1989). Students were immersed in pre-reading skills and oral language development in a fun, structured environment. Students were screened again after the summer session and those who still had low scores were invited to participate in the Roxy Kindergarten Buddy Program.

In Hill School students were chosen to be in the full-day program based on a lottery system. Twenty-one students were enrolled in the program. The students who registered at Hill School for kindergarten were divided into three categories, those with no pre-school experience, those with little pre-school experience and those with Headstart experience. Once divided into the three groups, the principal organized the groups by sex and ethnicity. At that time a random sample was chosen from each group making sure that the full-day class was balanced. The students who did not get into the full-day class were registered for the half-day programs.

Half-day extended Kindergarten Buddy Program. The Roxy Kindergarten Buddy Program began in 2004 after it was noted that some students needed more time to attain the literacy skills to meet the standards by the end of kindergarten. At the conclusion of the morning kindergarten program, when students were getting ready for dismissal, the Buddy students were escorted to the Buddy classroom for additional 50-minutes of instruction each day. At the end of the session, they were transported home by buses at 1:00 P.M., which were paid for in the Roxy school bus contract.

The Kindergarten Buddy Program in both Bally and Rancher Schools was taught by teachers and paraprofessionals who had extensive training in the teaching of reading and language development. The staff spent time each day planning lessons that met the needs of

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the individual Buddy students. The adult to student ratio was 3:18. The Kindergarten Buddy Program curriculum focused on phonological awareness lessons including: word awareness, rhyme awareness, syllable awareness, initial consonants, onset and rimes, alliteration, and phonemic awareness. Activities included: choosing books to read aloud that focused on sounds, rhyming and alliteration, inviting children to make up new versions of familiar words or songs by changing the beginning sounds of words and playing games where children isolated the beginning sound in familiar words and generated rhyming words. For example, students would play alphabet Bingo or sing songs including London Bridges as they discriminated beginning sounds. A daily Buddy lesson consisted of a 15-minute mini-lesson which transitioned into three small group literacy activities. Students rotated through these activities, and at the end of the lesson participated in a five-minute closure to review what had been learned. In both Bally and Rancher Schools, reading staff members and a kindergarten paraprofessional incorporated the Buddy Program into their current schedules.

  Half-day kindergarten program without an extended program. The half-day kindergarten program ran for three-hours and ten-minutes per day. The students in the study in this program attended school in the Roxy School District. They were in the same classrooms as the Kindergarten Buddy Program students but did not stay for additional instructional support. A typical day in the half-day kindergarten class included daily reading and writing activities, phonics instruction, a math lesson, monthly science units and a special class of art, music, media or physical education. Students had opportunities to work in large and small groups. Teachers directed whole class phonics lessons, center literacy activities, and guided reading. During two half-hour periods a day either a paraprofessional or a reading teacher assisted in the classroom and worked with small groups of children.

Full-day kindergarten program without an extended program. The full-day

kindergarten students analyzed in this study were located in a Pre-K-2 school in Shelly

School District, a neighboring district to the Roxy School District. These students attended

kindergarten for six and a half hours per day. This included lunch and recess, leaving five

and a half hours for instruction. A typical day in the full-day kindergarten class included

daily reading and writing lessons, phonics instruction, math activities, science, and a special

class of art, computer, music, media, or physical education. The school day was similar to the

half-day instructional program but there was more time to work in small groups and with

individual students. The full-day program provided more time for socialization activities for

the students. The full-day program had a paraprofessional that worked with the class all day.

Instructional programs. Although the schools differed in their ethnic composition,

the instruction throughout the day in all three schools was similar. The half-day

kindergarten programs at both Bally and Rancher Schools in the Roxy School District ran

for three-hours and ten-minutes. The students in Hill School in the Shelly School District

attended for six and a half hours, which included an hour for recess and lunch. All

schools used a balanced literacy approach with an emphasis on Readers and Writers

Workshop and a phonics component. Students in these kindergarten classes were

provided with a stringent curriculum that was packed full of academic challenges. A

sample half-day schedule at the schools included a morning meeting where The Pledge of

Allegiance was recited; the calendar, weather and number grid were completed. The class

then moved to a 20-minute phonics lesson, a 30-40 minute reading block and then a

writing block. A 10-minute working snack occurred then, depending on the day, a

handwriting lesson or a science lesson was taught. Each day was supplemented with a 30-

minute class of music, art, media, or physical education. In the full-day classes the same schedule was followed but activities and lessons increased in time. There was play time in the full-day class. Center and work time increased to give students more time to complete tasks and learn skills.

Readers and Writers Workshop was followed in the three schools participating in the study. The classrooms were "reading communities". Reading occurred throughout the whole day, with a special block of the day focused on teaching students comprehension strategies used by proficient readers. In all of the classrooms in the study, children read often and for extended periods of time. Students read aloud, individually, in pairs, and in small response groups. In the reading classrooms children were exposed to many genres including fiction, nonfiction, and poetry. Children read in "just right" books at their instructional level and eventually chose their own reading books with the assistance of the teacher. In these classrooms, the teachers and students shared strategies they used in reading. Students wrote and drew responses to the literature. The students talked about books in whole-class situations, pairs, and small groups. The students worked in guided reading groups with the teachers and were taught specific skills based on teacher's assessment of student's needs.

In these classrooms the reading lessons included mini-lessons which introduced a reading strategy to the students, small guided reading groups, and work with individual students. During this reading workshop time, students practiced their skills, listened to books on tape, conferred with classmates, and responded to books. At the end of the lesson there was a closing or share time in which the group met as a whole to refer back

to the learning objective of the day and reflect on the learning. At the conclusion of the lesson students would reflect on their learning (Principal's report, school website, 2007).

The schools in the Roxy district, Bally and Rancher, utilized the Wright Group Skills Assessment Guide (Cheney & Cohen, 1999). The skills taught in kindergarten included using phonemes to form new words, blending syllables, identifying and blending onset and rimes, isolating phonemes: recognizing initial and final sounds, recognizing and producing rhymes, segmenting words into phonemes, segmenting words into syllables, blending phonemes into words, applying letter and sound relations in reading and writing, knowing sounds for long and short vowels, learning letter shapes and names, and recognizing that letters in printed words represent sounds in spoken words. For example, letter identification was taught by constant reinforcement. Alphabet games were played to help students recognize letters and sounds and flashcards were also used. Students would be asked to identify a picture, give the letter and say the sound, e.g., if the picture was a doll the students would say, "doll, d, /d/". The Wright Group Program (Cheney & Cohen, 1999) focused on word awareness, rhyme awareness, compound words, syllable awareness, alliteration, onset and rimes, phonemic awareness, book concepts, and then it moved into letter identification in the alphabet. This work was incorporated in the pre-phonics portion of the program which was covered in kindergarten. Level A introduced the consonants and short vowels, and then word families. The program was incorporated in the Roxy Public Schools Language Arts Curriculum Grades K-3 (2004).

The Hill School included the teaching of phonics in the Readers and Writers Workshop. The teachers taught phonics skills as part of the Readers Workshop. The

teacher also used the Rigby Literacy Word Works Phonemic Awareness Program (Harcourt, 1999) to supplement the lessons. The phonics portion provides explicit and direct instruction in alphabetic principle, phonemic awareness, and word work.

Writers Workshop was also used by all three schools. The classrooms were writing communities. In kindergarten a block of time was dedicated to Writers Workshop. The same processes were observed in all of the classrooms. The children wrote often and for extended periods of time. Of course, in kindergarten drawing counted. Children wrote poetry, list books, and how to books. The teachers introduced mentor texts and the students studied authors' craft to improve their writing, e.g., Eric Carle. The teachers conferred with students to help them edit and make revisions in their pieces. Students published their work and celebrated their writing accomplishments on a regular basis.

The Kindergarten Buddy Program. The Kindergarten Buddy Program, the treatment program in the study, was a 50-minute per day instructional period in which phonemic awareness was stressed. The goal of the Kindergarten Buddy Program was to introduce the kindergarten students to the lessons in the Wright Group Skills Phonics Program (Cheney & Cohen, 1999) one week ahead of the regular kindergarten classes in order to get students familiar with the lesson. This was beneficial so that when the students were exposed to the lesson again in the regular class they would already have prior knowledge of the skills to be learned and they would be more successful in the regular class. The Kindergarten Buddy Program's instruction was focused on literacy skills including: oral language, phonological awareness, and concepts of print. There was an emphasis on letter recognition, letter sound relationships, phonemic awareness,

rhyming, literacy knowledge, patterning, and language concepts. A daily Kindergarten Buddy lesson consisted of a 15-minute mini-lesson which transitioned into three small group activities. Students rotated through these activities and at the end of the lesson there was a five-minute closure to review what had been learned. The instructional stations were monitored by the teacher and reading paraprofessionals. The team met each week to plan the lessons that addressed the needs of the students. Depending on the needs of the children, the instructional stations may have all contained the same activity or they may have been differentiated based on student needs. The teacher planned activities that were fun and reinforced the skills of the lessons, e.g., concentration and memory games, name games to learn beginning sounds, silly songs, movement activities, etc. This instructional program allowed students to be taught the phonics skills and activities ahead of the rest of the class. When the lesson was presented in the regular kindergarten class, the Buddies were more confident and more successful because they had already been exposed to the information (Cosentino, 2006).

The Kindergarten Buddy Program provided extra support for the at-risk students. The Buddy Program provided a stable, known environment where expectations, routines, and procedures were clearly defined for the children. It fostered independence in the students. The Buddy Program used a multi-sensory approach to learning. The teacher planned varied activities and lessons that kept the students interested and engaged. It provided encouragement and opportunities to help students become successful learners.

Sample. The sample in this study was purposeful and convenient. The students attended school in Connecticut. The three groups were full-day kindergarten without an extended program, half-day kindergarten without an extended program and half-day kindergarten with the Kindergarten Buddy Program. All participants were enrolled in one of these kindergarten classes. Teachers disseminated letters to all students in the three programs and only the students who returned the signed permission letters were used in the study (Appendices B, C, D).

This study included 92 students from a total of three elementary schools. The students ranged in age from five to six-years old. All of the students turned five by December 31st, 2006. Thirty-seven students were enrolled in the Kindergarten Buddy Program and were part of the study. A convenience sample of 38 at-risk students in a half-day program, but not participating in the Kindergarten Buddy Program, were included and a sample of 17 at-risk students enrolled in a full-day program in the neighboring Shelly School District were selected. Table 2 shows the academic levels of the students in the three groups when they entered kindergarten in the fall of 2006 as reported by their classroom teachers. It should be noted that in the fall of 2006, the kindergarten buddy students were far below the other two groups in the study.

Table 2: Academic Level of Students Entering Kindergarten

Type of Program	Number in sample	Number of students entering kindergarten far below school wide expectations	Number of students entering kindergarten below school wide expectations	Number of students entering kindergarten at school wide expectations
Half-day Kindergarten Buddy Program	37	23	14	0
Half-day kindergarten without an extended program	38	6	17	15
Full-day kindergarten without an extended program	17	6	8	3

Research Questions and Hypotheses

By using a systematic approach, this research addressed the following questions:

Research question 1- Is there a significant difference in reading achievement for at-risk students participating in a half-day extended Kindergarten Buddy Program as compared to students attending half-day kindergarten without an extended program and those attending full-day kindergarten without an extended program? (As measured by The Gates MacGinitie Reading Test)

Hypothesis 1- Reading achievement of students who attend the Kindergarten Buddy Program will be significantly higher than for those students enrolled in the half-day program and at least as high as those participating in a full-day program.

Research question 2- Is there a significant difference between students' scores for those attending a half-day extended Kindergarten Buddy Program, half-day kindergarten without an extended program, and full-day kindergarten without an extended program on the Inventory of Skills from winter 2007 to spring 2007? (As measured by the Inventory of Skills)

Hypothesis 2- There will be a significant increase in the scores on the Inventory of Skills of the students enrolled in the half-day extended Kindergarten Buddy Program from the winter 2007 to spring 2007. There will be at least no difference between students' scores between the half-day extended Kindergarten Buddy Program and the other groups.

Data Collection Procedures and Timeline

Bally and Rancher Schools each employed three kindergarten teachers who taught two half-day kindergarten classes for three hours each day. One paraprofessional divided her time equally throughout the day in all the classes. A reading teacher also spent some time

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each day assisting at-risk students. In the beginning of the school year, the staff assessed all incoming kindergarten students and those who were weak in pre-reading skills were invited in the fall of 2006 to participate in the Kindergarten Buddy Program. Some students who were invited into the program needed to be moved to the AM classes because the Kindergarten Buddy Program only serviced students in the morning session. Three children switched to the AM class from the PM class. Parents signed a consent form for students to take part in the Roxy Kindergarten Buddy Program.

The Kindergarten Buddy Program took place from September, 2006 to June, 2007. The research study was conducted from January, 2007 to May, 2007. In December of 2006, the researcher requested permission from the superintendents and school principals in both Roxy and Shelly School Districts to conduct the study. In January 2007, a convenient sample from the half-day kindergarten without an extended program and full-day kindergarten without an extended program was selected by the school staff in conjunction with the principals and the researcher. This sample was chosen based on teacher judgment through informal assessments, class observations, and student work. Students chosen were those students who were lacking in skills including letter and sound recognition, rhyming, initial sounds, etc., who were identified by the teachers as at-risk learners. A consent form was sent to the parents of those at-risk students asking permission for their child to be included in the study. This letter was available in English, Spanish and Portuguese (Appendices B, C, D). All 21 parents of students in the full-day program were given letters asking them to grant permission for their child to participate in the study. In the full-day program, 17 out of 21 students returned the signed form giving permission to participate in the study. In the Buddy Program, all parents of students in the half-day Kindergarten Buddy Program were given

letters asking them to participate. Of the 52 students, 38 students participated in the study and 32 of their scores were used in the data analysis due to the fact that six students had irregular scores on the Gates MacGinitie Reading Test. Teachers in the half-day programs gave out 58 letters to students who were at-risk in the half-day only program. Parents of 37 children gave permission for their child to participate in the study. There were a total of 92 students who had permission to participate in the study. Of the 92, 86 students were used for this study. The sample was finalized in the winter of 2007; six students were not used in the statistical analysis due to irregularities reported on the Gates MacGinitie Reading Test.

In winter of 2007, the Roxy School staff administered the Kindergarten Inventory of Skills to students in the half-day Kindergarten Buddy Program and the half-day kindergarten without extended program students. These data were collected by the reading teachers in the Roxy School District. The Kindergarten Inventory of Skills was administered to the full-day kindergarten without an extended program student by the researcher and an assistant. All pretest data was collected in the winter 2007 and recorded by the researcher. All staff members who collected the data were trained in the proper administration of the assessments. In the Roxy School District, the Supervisor of Language Arts trained the staff and in Hill School the researcher trained the staff. The training included the proper way to record the data, the questioning techniques to be used when working with a student, the proper pronunciation of the short and long vowels and acceptable answers for each question. The testers were given a word-by-word script so that they all used the same directions when administering the assessments. In May, 2007, the Kindergarten Inventory of Skills was administered again to all students in the study. This post-test data was collected by the reading teachers and the researcher.

In May, 2007, the reading teachers administered the Gates MacGinitie Reading Test-4 (GMRT-4) to the 75 half-day kindergarten students in the Roxy School District. In May, 2007, the GMRT-4 was administered to 17 full-day kindergarteners without an extended program students in the study by the researcher and an assistant. The May 2007, Kindergarten Inventory of Skills data was collected by the staff of both schools in the Roxy School District under the supervision of the Director of Language Arts. The Kindergarten Inventory of Skills data collection in the Shelly District was collected by the researcher and a trained assistant. The researcher entered the Kindergarten Inventory of Skills data into a spreadsheet and then used The Statistical Package for the Social Science (SPSS) (2001) to analyze the data. These data were used to assess student's achievement and growth over time, to evaluate the effectiveness of the Kindergarten Buddy Program and the effectiveness of providing extra time and support for at-risk students. The GMRT-4 was sent to Riverside Publishers for machine scoring.

Instrumentation

The Gates MacGinitie Reading Test. The Gates MacGinitie Reading Test (GMRT-4) (2002) was the instrument used in the study. The Gates MacGinitie was chosen because it is a well respected assessment used by many school districts throughout the country. The Gates MacGinitie assesses the skills needed by kindergarteners that allows them to become skilled readers. It was administered to students in May 2007. The GMRT-4 Form S, Level PR was used to assess students' level of reading achievement. This test was designed for students at the end of kindergarten/beginning of grade one. Answer choices were primarily pictures. The GMRT-4 evaluated student's knowledge of basic reading concepts. It was normed based on spring, 2007 results. GMRT-4 was found to have strong reliability and validity. The

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reliability estimates indicate strong total test and subtest internal consistency levels with coefficient values at or above .90. Content validity was documented through a process of test development used to identify the scope of the subtests and identify effective items within subtests. Construct validity was supported by strong intercorrelations between subtests and total test scores. Students were given scores in four areas including literacy concepts, oral language concepts, letter and letter/sound correlation, and listening comprehension. Students' raw scores were converted into national stanines, and national percentile ranks (MacGinitie, et al., 2002).

The Kindergarten Inventory of Skills. Another instrument used to assess the kindergarten students was The Kindergarten Inventory of Skills. The Kindergarten Inventory of Skills assessed students in the following content areas: upper and lower case letter recognition, rhyme recognition and rhyme production, initial sound production, oral blending and oral segmentation. Content validity was originally found through the design of the test when literacy experts from the Roxy School District designed the test. Connecticut State Frameworks were reviewed, alternate tests were examined, and important concepts were included in the inventory. Additional content validity was found by a jury of 10 experts, including kindergarten and first grade teachers and early childhood administrators, from New York State. They reviewed the document and validated the content of the assessment as it compares to the New York and Connecticut State Frameworks. The instrument was used in a pilot study in the spring of 2006 in which it was found to have construct validity. The 26 at-risk kindergarten students who were deemed to be below grade level and who were struggling in kindergarten performed poorly on the assessment whereas the students who performed on grade level in class scored on grade level on the assessment (Cosentino, 2006).

Description of Research Design and Analysis

This investigation utilized a post-test only design with three comparison groups. The dependent variables for this investigation were student performance on the Gates MacGinitie, a criterion/norm referenced measure of student learning in reading, and the Kindergarten Inventory of Skills. This study compared the performance of three discrete groups of participants, where there were three levels of the independent variable: full-day kindergarten without an extended program, half-day kindergarten without an extended program and half-day kindergarten program with the Kindergarten Buddy Program (treatment group).

The Statistical Package for the Social Science (SPSS) for Windows 11.0 (SPSS, Inc., 2001) was used for statistical analysis. A post-test only design in which one group received a treatment was conducted to answer research question 1. There was one dependent variable: reading achievement, and three levels of the independent variable: full-day kindergarten without an extended program, half-day kindergarten with additional phonological awareness instruction (Kindergarten Buddy Program) and half-day kindergarten without an extended program. An ANOVA was utilized to determine if there were significant differences in reading achievement scores as measured by the Gates MacGinitie Reading Test between half-day Kindergarten Buddy students' scores and students' scores in the half-day kindergarten without an extended program and full-day kindergarten without an extended program.

A quasi-experimental design was conducted to answer research question 2. There was one dependent variable, the Kindergarten Inventory of Skills scores for the kindergarteners, and three levels of the independent variable: full-day kindergarten without an extended program, half-day kindergarten with additional phonological awareness instruction

(Kindergarten Buddy Program), and half-day kindergarten without an extended program. Differences over time were analyzed using a repeated measures ANOVA to determine if there was a significant difference on the means of the scores, as measured by the Kindergarten Inventory of Skills.

Limitations

This study was limited to a sample of 92 kindergarten students in two school districts. The sample was one of convenience and random assignment to groups was not possible. Given the cycle of the school year, the reading achievement data could only be collected in the spring. The research study began in the winter of 2007, after the treatment (Kindergarten Buddy Program) had begun in September 2006. This may have eliminated the treatment effect boost that could have occurred at the start of a new treatment. Due to this, if the study showed there was a significant difference between the groups, the treatment would have been found to be successful in making a significant difference for at-risk students.

Many factors including the classroom teacher, students' maturation and parental support could have impacted student achievement; therefore the students' success cannot be isolated to the Kindergarten Buddy Program. The researcher is the former principal of Bally Elementary School and continues to work in the district. The researcher currently has no involvement in the school program.

It is important to control any extraneous variables that might have an impact on the data in the study. The researcher took into consideration both internal and external threats of validity and made all the reasonable attempts to control these major threats.

Threats to internal validity. Fraenkel and Wallen (2003) state that there are primary threats to internal validity of a research study. The subject characteristic threat is

defined as "the possibility that characteristics of the subjects in a study may account for observed relationships, thereby producing a threat to internal validity" (p. G-8). In this research study this can affect internal validity because all of the kindergarteners have different ability levels. This is an uncontrolled circumstance. Due to the fact that there were many students who had various reading levels, it is clear that this would have an impact on test scores since both tests require the ability to read at grade level. This threat was addressed by administering the pre and post-tests in the Kindergarten Inventory of Skills.

"The possibility that results are due to characteristics of the setting or location in which a study is conducted can produce a threat to internal validity" (Fraenkel & Wallen, 2003, p. G-4). The location of the study could have been a threat to the study due to the fact that this research study took place in three separate schools. Although the classrooms and instruction were similar, the researcher could not be certain everything was exactly the same in all three locations.

Instrumentation could also have been a threat to internal validity. It is defined as "the possibility that results are due to variations in the way data are collected, thereby affecting internal validity" (Fraenkel & Wallen, 2003, p. G-4). This was also perceived as being a threat due to the fact that the Kindergarten Inventory of Skills was administered and corrected by different staff members. The researcher reviewed all of the assessments to ensure that assessments were corrected accurately. The Gates MacGinitie was sent to the Riverside Publishing for machine scoring so the internal validity threat for this assessment was low.

The data collector bias could have been a threat to the internal validity. It is defined as the "unintentional bias on the part of the data collectors that may create a threat to the internal validity of a study" (Fraenkel & Wallen, 2003, p. G-2). This was a threat due to the fact that there was flexibility on the Kindergarten Inventory of Skills in interpretation when assessing sounds of letters and vowels. This was partially overcome by providing strict instructions for the assessors. The use of the GMRT-4, an objectively administered and scored standardized achievement assessment, eliminated data collector bias.

The testing threat is defined as "a threat to internal validity that refers to improved scores on a post-test that are a result of subjects having taken a pre-test" (Fraenkel & Wallen, 2003, p. G-8). This was perceived as a threat due to the fact that the students took the pre-test in the winter and again in the spring. This could have had an impact on a child's overall achievement.

The maturation threat is defined as "the possibility that results are due to changes that occur in subjects as a direct result of the passage of time and that may affect their performance on the dependent variable, thereby affecting internal validity" (Fraenkel & Wallen, 2003, p. G-5). This is perceived as a medium level threat because students were exposed to five months of instruction in between the pre and post-tests. Also, it is expected that they would make improvements between the two assessments. The Kindergarten Inventory of Skills assesses student's growth over time so maturation is expected.

Threats to external validity. External validity is defined as "the degree to which results are generalizeable, or applicable, to groups and environments outside the research

setting" (Fraenkel & Wallen, 2003, p. G-3). These data were collected in a naturalistic setting, therefore, it is free of threats to external validity described by Campbell and Stanley (1963) with respect to experimental research design. In addition, the sample of this study is geographically limited; therefore results will not be generalized beyond school districts within the New England area. The greatest threat to the external validity of this study is to perpetuate the idea that the any program or test alone should be used to evaluate student achievement.

Project Approval

In January, 2007, the proposal for the research project was approved by the researcher's advisors and then by the Institutional Review Board (IRB). The researcher has a valid Human Subjects certificate (Appendix E). Letters of permission were attained from all three elementary school principals, as well as permission from the Superintendent of Roxy School District and Assistant Superintendent of the Shelly School District.

Ethics Statement

According to the procedures required by the Western Connecticut State University (WCSU) IRB, strict ethical procedures are primary when considering the implementation of this study. Prior to any study discussion or data collection, the approval of the WCSU IRB for the initial proposal was obtained. Once approval was achieved, the initial process of gaining informed consent began.

To assure that appropriate protocol was followed, the researcher met with the principals and the teachers in all three schools to fully explain the purpose of the study. To assure confidentiality, students' names were not used. All data was kept locked at the

researcher's home and school office. The data was given to school principals who had the

option to share it with staff and parents.

CHAPTER FOUR: ANALYSIS OF THE DATA AND THE FINDINGS

This chapter includes a review of the research questions, hypotheses, and a description of the analyses and the finding of the study. The purpose of this study is to examine the effectiveness of providing additional phonological awareness instruction, known as the Kindergarten Buddy Program, to at-risk kindergarten students and its effect on reading achievement.

Research Questions and Hypotheses

Research question 1: Is there a significant difference in reading achievement for at-risk students participating in a half-day extended Kindergarten Buddy Program as compared to students attending half-day kindergarten without an extended program and those attending full-day kindergarten without an extended program? (As measured by The Gates MacGinitie Reading Test)

Hypothesis 1: Reading achievement of students who attend the Kindergarten Buddy Program will be significantly higher than for those students enrolled in the half-day program and at least as high as those participating in a full-day program.

Research question 2: Is there a significant difference between students' scores for those attending a half-day extended Kindergarten Buddy Program, half-day kindergarten without an extended program, and full-day kindergarten without an extended program on the Inventory of Skills from winter 2007 to spring 2007? (As measured by the Inventory of Skills)

Hypothesis 2: There will be a significant increase in the scores on the Inventory of Skills of the students enrolled in the half-day extended Kindergarten Buddy Program from

the winter 2007 to spring 2007. There will be at least no difference between students' scores between the half-day extended Kindergarten Buddy Program and the other groups.

Description of the Analyses for Research Question 1

A post-test only design in which one group received a treatment was conducted to answer research question 1. There was one dependent variable: reading achievement, and three levels of the independent variable: full-day kindergarten without an extended program, half-day kindergarten with additional phonological awareness instruction (Kindergarten Buddy Program) and half-day kindergarten without an extended program. An ANOVA was utilized to determine if there were significant differences in reading achievement scores as measured by the Gates MacGinitie Reading Test between half-day Kindergarten Buddy students' scores and students' scores in the half-day kindergarten without an extended program and full-day kindergarten without an extended program.

Descriptive statistics. Descriptive statistics display the mean averages for the

Gates MacGinitie Test.

Mean averages for Gates MacGinitie Test
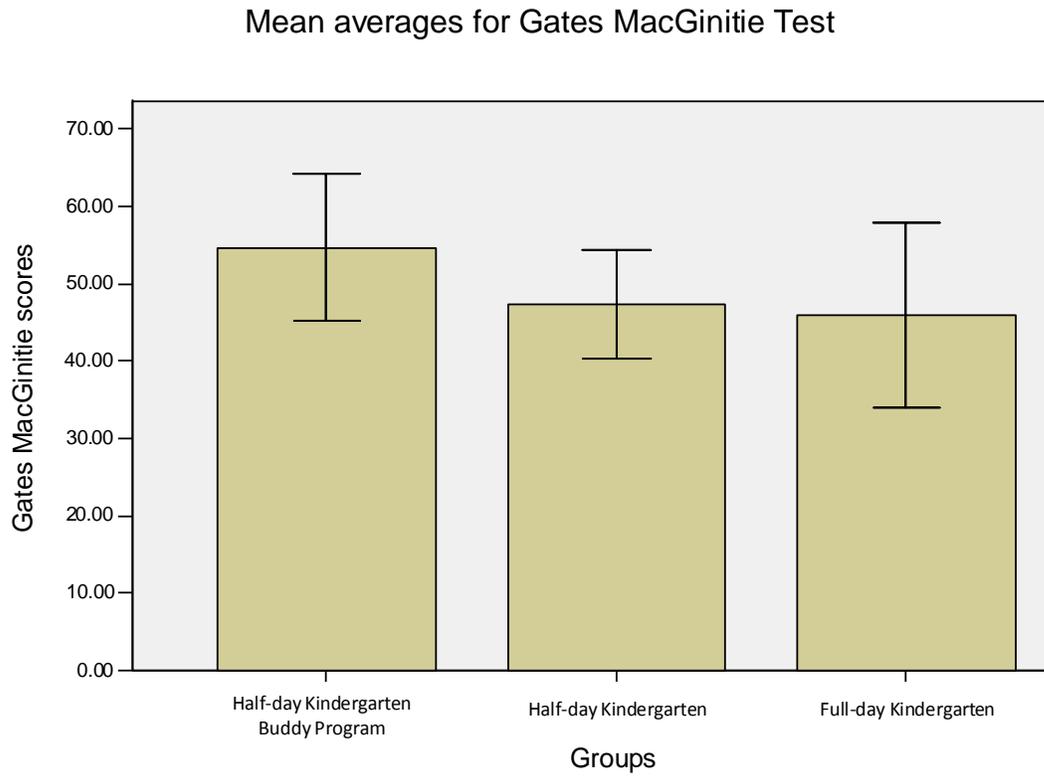
Figure 1. Mean averages for Gates MacGinitie Reading scores.

Table 3

Descriptive Statistics of the Gates MacGinitie Test

		Half-Day Kindergarten Buddy	Half-day Kindergarten	Full-day Kindergarten
N	Valid	33.0	37.0	16.0
Mean		54.7	47.4	46.0
Median		56.0	52.0	56.0
Std Deviation		26.7	21.0	22.4

Sample information. Twenty-one parents of students in the full-day program were given letters asking them to grant permission for their child to participate in the study. In the full-day program, 17 out of 21 students returned the signed form giving permission to participate in the study; 16 of their scores were used in the data analysis due to the fact that one student had irregular scores on the Gates MacGinitie as determined by Riverside Publishing. In the Kindergarten Buddy Program, all parents of students in the half-day Kindergarten Buddy Program were given letters asking them to participate; 38 students out of 52 students participated in the study and 33 of their scores were used in the data analysis due to the fact that five students had irregular scores on the Gates MacGinitie as determined by Riverside Publishing. Teachers in the half-day programs gave out 58 letters to students who were at-risk in the half-day only program. Parents of 37 children gave permission for their child to participate in the study. There were a total of 92 students who had permission to partake in the study; 86 students were used in the statistical analysis for this study. The sample was finalized in the winter of 2007.

Students in the half-day kindergarten program could have been candidates for the Kindergarten Buddy Program but were not enrolled in the program for a variety of reasons. In order to be in the Kindergarten Buddy Program students must have been in the morning AM kindergarten classes. Some parents did not want to switch their child to the morning class due to work schedules or childcare issues, whereas other parents preferred a less stressful morning opting to have their child remain in the PM class. Students may have moved into the school district after September and the program could not accommodate additional children. A couple of students started off the school year with adequate skills and then started to struggle in the middle of the school year.

Figure 2. Gates MacGinitie Test scores distribution for different groups.

A total of 86 students participated in the study. The scores of six students were removed from the study due to score irregularities that were identified by Riverside Publishing.

Equality of groups prior to treatment. Levene's Homogeneity of Variance tests (see Table 3) that the error variance of the dependent variable (Gates MacGinitie Test scores) was equal across all groups (half-day Kindergarten Buddy, half-day kindergarten, and full-day kindergarten). When $p>0.5$, the data is homogeneous suggesting that an ANOVA is an appropriate test to conduct. In this case, $p=.114$ or $p>.05$.

Table 4

Test of Homogeneity of Variances: Gates MacGinitie

Levene Statistic	df1	df2	Sig.
2.227	2	83	.114

One-way ANOVA. A one-way ANOVA was conducted to look for differences between groups (half-day Kindergarten Buddy, half-day kindergarten, and full-day kindergarten) on the Gates MacGinitie instrument (see Table 4). If $p<.05$ then statistical differences exist. However, in this case $p>.05$, demonstrating that there was statistical similarity between the half-day Kindergarten Buddy group, half-day kindergarten group,

and full-day kindergarten group. This post-test-only analysis demonstrated that all groups

of students were performing at similar levels according to Gates MacGinitie.

Table 5

One-way ANOVA for Gates MacGinitie scores

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1233.490	2	616.745	1.107	.335
Within Groups	46221.766	83	556.889		
Total	47455.256	85			

Analysis of subscores. All subscores on the Gates MacGinitie were analyzed for

significant differences between groups (see Table 5). One-way ANOVA was conducted

on all subscores. A summary of the results is below:

Table 6

One-way ANOVA on Subscores

Subscale	Lit concepts	Oral language concepts	Letter & letter sound corr.	Listening (story) comp.	Total
F statistic	1.531	.242	*3.208*	.931	1.107
significance	.222	.786	*.046*	.398	.335

76

Since only the letter and letter sound correlation was significant, it will be explained in further detail.

   Letter and letter sound subscores. The letter and letter sound subscore was analyzed to examine potential differences in change over time of different kindergarten groups.
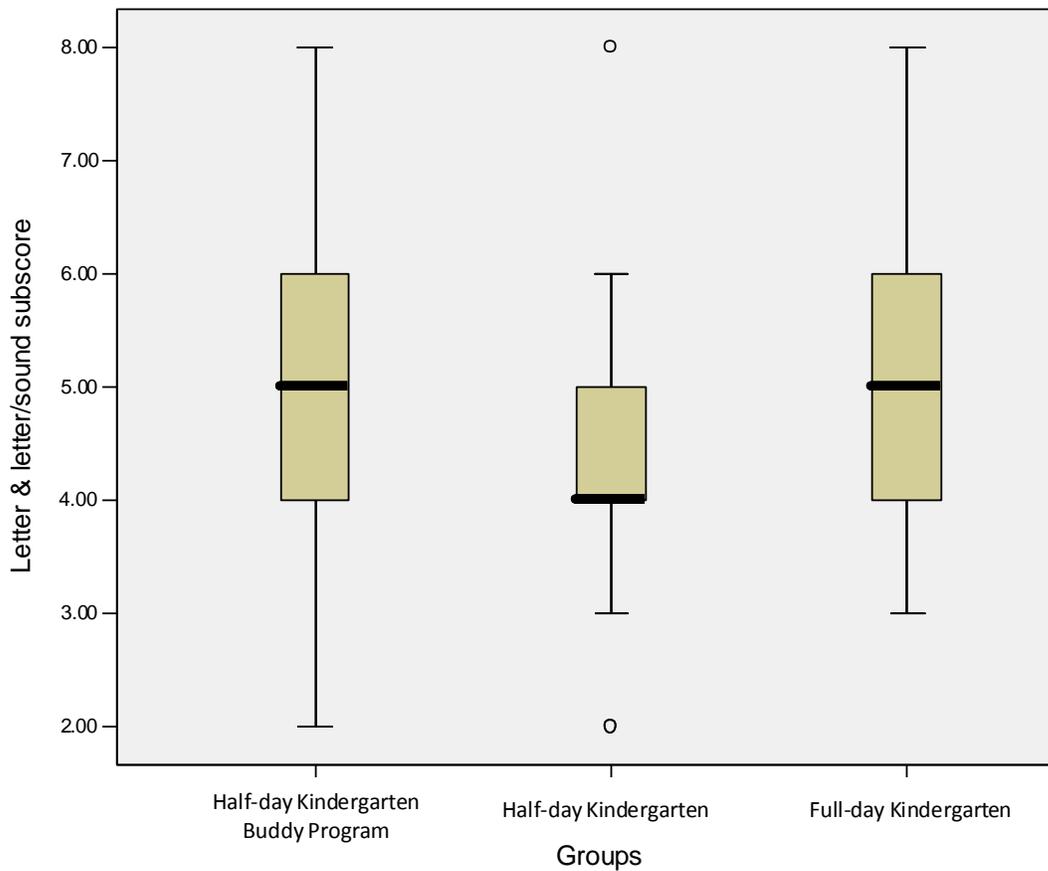
Figure 3. Gates MacGinitie Letter and Letter/Sound subscore distribution. Box and whisker plot of Gates MacGinitie letter and letter/sound subscores based on group.

Table 7

Descriptive Statistics of Letter and Letter/Sound subscores

	Half-day Kindergarten Buddy	Half-day Kindergarten	Full-day Kindergarten
N	33.0	37.0	16.0
Mean	5.0	4.4	5.1
Median	5.0	4.0	5.0
Std Deviation	1.7	1.2	1.5

A total of 86 students participated in the study. The scores of six students were removed from the study due to score irregularities that were identified by Riverside Publishing.

One-way ANOVA for Gates MacGinitie letter and letter/sound subscore.

Levine's Homogeneity of Variance tests (see Table 7) that the error variance of the

dependent variable (Gates MacGinitie Letter and Letter/Sound subscore) is equal across

all groups (half-day Kindergarten Buddy, half-day kindergarten, and full-day

kindergarten). When p>0.5, as this case is, the data is homogeneous suggesting that an

ANOVA is an appropriate test to conduct.

Table 8

Test of Homogeneity of Variances: Letter and Letter/Sound Subscore

Levene Statistic	df1	df2	Sig.
1.242	2	71	.295

A one-way ANOVA was conducted to look for differences between groups (half-

day Kindergarten Buddy, half-day kindergarten, and full-day kindergarten) on the Gates

MacGinitie Letter and Letter/Sound subscore (see Table 8). p<.05, thus statistical

differences exist.

Table 9

ANOVA: Letter & Letter/Sound Subscore

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.244	2	4.122	3.208	.046
Within Groups	91.216	71	1.285		
Total	99.459	73			

A Tukey HSD post hoc analysis was conducted because there were multiple comparisons to be made as well as range of values (see Table 9). The significant ANOVA result suggests rejecting the null hypothesis $H_0 = $ "means are the same." Multiple comparison/range test procedures, such as the Tukey HSD are then used to determine which means are different from which.

Table 10

Post Hoc Analysis

Dependent Variable: Gates MacGinitie Letter & Letter/Sound Subscore

	(I) Group	(J) Group	MeanDiff	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Half-day Kindergarten Buddy	Half-day Kindergarten	0.7012(*)	0.2885	.0460	0.0105	1.3918
		Full-day Kindergarten	0.1178	0.3891	.9510	-0.8135	1.0491
	Half-day Kindergarten	Half-day Kindergarten Buddy	-0.7012(*)	0.2885	.0460	-1.3918	-0.0105
		Full-day Kindergarten	-0.5833	0.3821	.2850	-1.4980	0.3313
	Full-day Kindergarten	Half-day Kindergarten Buddy	-0.1178	0.3891	.9510	-1.0491	0.8135
		Half-day Kindergarten	0.5833	0.3821	.2850	-0.3313	1.4980

The mean difference is significant at the .05 level.

Findings: research question 1. A one-way ANOVA was conducted to determine if there were differences in the post-test scores of the different groups (Kindergarten Buddy Program, half-day kindergarten program, full-day kindergarten program). The Tukey HSD post hoc analysis demonstrates that the half-day Kindergarten Buddy students scored significantly higher than those in the half-day kindergarten program. Scores comparing half-day Kindergarten Buddy participants to full-day participants were similar, as were those of the students in the half-day kindergarten and full-day programs. This suggests that the Kindergarten Buddy Program made significant strides to improve letter and letter/sound abilities of the students.

Description of Analyses for Research Question 2

A quasi-experimental design was conducted to answer research question 2. There was one dependent variable: the scores on the Kindergarten Inventory of Skills for kindergarten learners and three levels of the independent variable: full-day kindergarten without an extended program, half-day kindergarten with additional phonological awareness instruction (Kindergarten Buddy Program), and half-day kindergarten without an extended program. Differences over time were analyzed using a repeated measures ANOVA to determine if there was a significant difference on the means of the scores, as measured by the Kindergarten Inventory of Skills.

Descriptive statistics. Descriptive statistics in Table 10 display the mean averages for the Kindergarten Inventory of Skills Test.

Table 11

Kindergarten Inventory post-test score

	Half-day Kindergarten Buddy	Half-day Kindergarten	Full-day Kindergarten
N	33.0	37.0	16.0
Mean	113.1	115.4	121.2
Median	120.0	119.0	122.5
Std Deviation	20.8	15.1	4.79

Kindergarten Inventory post test scores across groups
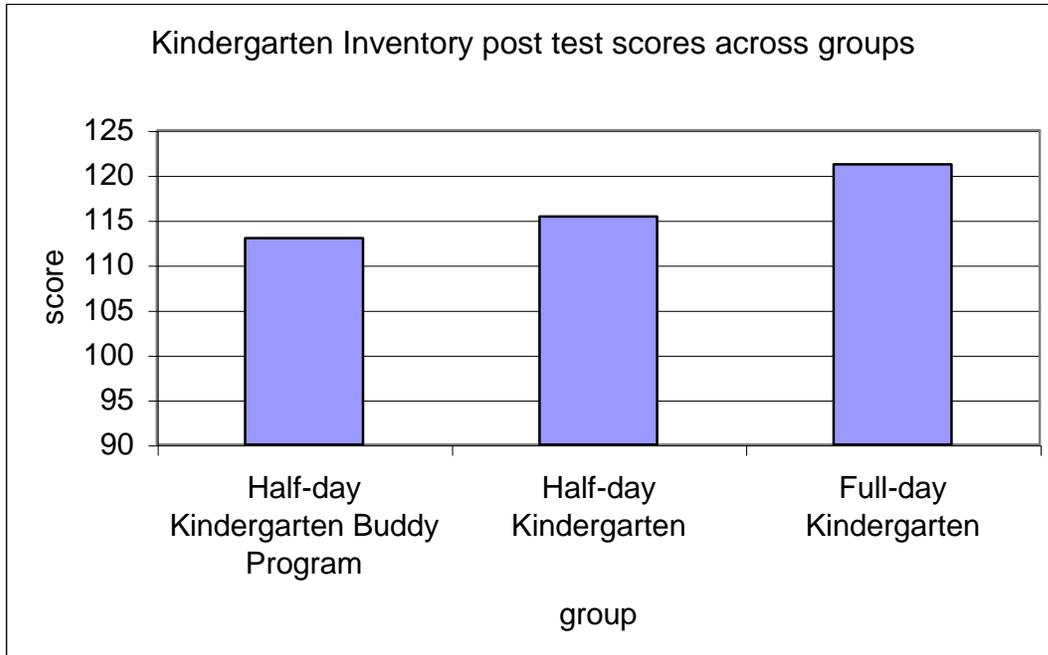
Figure 4. Kindergarten Inventory of Skills post-test scores across groups.

Equality of groups prior to treatment. The data effectively passed the Levene's Homogeneity of Variance test (p>.05) thus demonstrating that the error variance was equal across all groups (see Table 11). This makes conclusions drawn from a one-way ANOVA appropriate, because the data was homogenous across groups.

Table 12

Tests the null hypothesis to show that the error variance of the dependent variable is

equal across groups.

Levene's Test of Equality of Error Variances(a)

Dependent Variable: Kindergarten Inventory post-test score

F	df1	df2	Sig.
2.845	2	83	.064

a Design: Intercept+Class

Table 13

ANOVA test of Between-Subjects Effects

Dependent Variable: Kindergarten Inventory post-test scores

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	708.312	2	354.156	1.312	.275
Within Groups	22402.246	83	269.907		
Total	23110.558	85			

The one-way ANOVA demonstrates that although the mean of the kindergarten inventory scores was high for the Kindergarten Buddy Program, there was no significant difference ($p > .05$) between the groups for post-test scores (see Table 12).
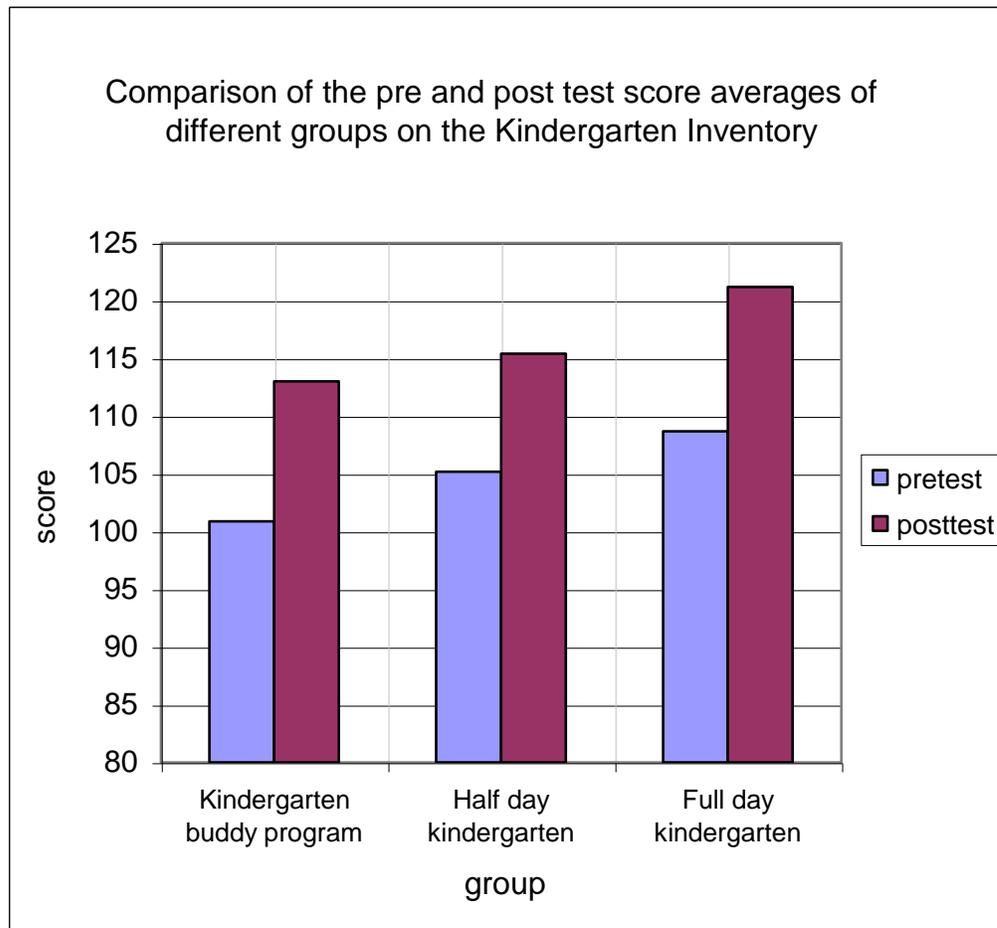
Figure 5. Comparison of the pre and post-test score averages of different groups on the Kindergarten Inventory.

Descriptive data for Kindergarten Inventory Test. The descriptive data indicated there was an increase in scores on the Kindergarten Inventory for all groups. The Kindergarten Buddy Program students' scores change over time appeared to show the greatest improvement (see Table 13). Therefore, a repeated measures analysis of variance

was used to analyze the differences in scores of the Kindergarten Inventory both pre and post-testing and across groups.

Table 14

Average scores on the Kindergarten Inventory pre and post-test between groups

Group	Pre-test Mean	Post-test Mean	Percent Increase
Kindergarten Buddy Program	100.9	113.1	10.7
Half-day Kindergarten	105.2	115.4	8.8
Full-day kindergarten	108.8	121.2	10.2

Equality of groups prior to treatment. The data effectively passed the Levene's Homogeneity of Variance test (p>.05) thus demonstrating that the error variance was equal across all groups both for the pre-test and post-test scores (see Table 14). This makes conclusions drawn from a repeated measures ANOVA appropriate, because the data were homogenous across groups.

Table 15

Tests the null hypothesis to show that the error variance of the dependent variable is equal across groups.

Levene's Test of Equality of Error Variances(a)

	F	df1	df2	Sig.
Pre-test Score	1.043	2	83	.357
Post-test Score	2.845	2	83	.064

a Design: Intercept+Group

    Within Subjects Design: prepost

    Repeated measures ANOVA. A repeated measures ANOVA was constructed loading the within-subject factor with two levels: the pre-test Kindergarten Inventory scores and the post-test Kindergarten Inventory scores (see Table 15). The between-subject factor was identified as the groups (Kindergarten Buddy Program, half-day kindergarten program, full-day kindergarten program).

Table 16

Repeated Measures ANOVA Tests of Within-Subjects contrasts of group and test time

Source	Pre/Post	Type III Sum of Squares	df	Mean Square	F	Sig.
Pre Post	Linear	1843586.025	1	1843586.025	2804.342	.000
Pre Post * Group	Linear	1395.624	2	697.812	1.061	.351
Error(pre/post)	Linear	54564.539	83	657.404		

Findings: research question 2. The data indicated that all groups showed a statistically significant (p<.05) increase in scores over time, demonstrating that skills tested on the Kindergarten Inventory were significantly improving for all students. The data did not indicate that score changes were different between groups (p>.05), thus no post hoc tests were necessary to determine differences between groups.

Conclusions

Research question 1. A one-way analysis of variance was conducted to determine if there were differences in the post-test scores of the different groups (Kindergarten Buddy Program, half-day kindergarten program, full-day kindergarten program). The Tukey HSD post hoc analysis demonstrated that the half-day Kindergarten Buddy students scored significantly higher than the half-day kindergarten program. Scores comparing the half-day Kindergarten Buddy participants to the full-day participants were similar as were the half-day kindergarten and full-day programs. This suggested that the Kindergarten Buddy Program made significant strides improving letter and letter/sound abilities of the students.

Research question 2. The data indicated that all groups showed a statistically significant (p<.05) increase in scores over time, revealing that all the students' skills were improving over time which was expected. No post hoc tests were necessary to determine differences between groups due to the fact that the data did not indicate that score changes were different between groups (p>.05).

CHAPTER FIVE: SUMMARY AND CONCLUSIONS

Chapter Five will include a review of the findings related to the research questions and hypotheses including a comparison of the findings related to the literature review in Chapter Two. The limitations of the study will be revisited along with implications of the study and suggestions for additional research.

Review of Findings Related to the Research Questions and Hypotheses

The purpose of this study was to examine the effectiveness of providing additional phonological awareness instruction to at-risk kindergarten students and its effect on reading achievement. In regard to research question one: there was no significant difference in reading achievement for at-risk students participating in a half-day extended Kindergarten Buddy Program as compared to students attending half-day kindergarten without an extended program and those attending full-day kindergarten without an extended program. A one-way ANOVA was conducted to determine if there were differences in the post-test scores of the different groups as measured by the Gates MacGinitie Reading Test. The analysis found that although the mean of the Kindergarten Inventory of Skills scores were high for the Kindergarten Buddy Program, there was no significant difference (p>.05) between the groups' post-test scores for the entire assessment. The reading achievement of students who attended the Kindergarten Buddy Program was not significantly higher for those students enrolled in the half-day program but it was as high as those participating in a full-day program. Students' scores comparing the half-day Kindergarten Buddy Program to the full-day program were similar to the half-day kindergarten without extended program and the full-day program. The Tukey HSD post hoc analysis data demonstrated that there was a significant

difference between the students in the Kindergarten Buddy Program and the half-day

only kindergarten group without extended program on the Gates MacGinitie letter and

letter/sound subtest. This suggests that the Kindergarten Buddy Program made significant

strides to improve letter and letter/sound abilities of the students supporting the belief that

the extra exposure to letter identification and letter/sound relationships had a significant

impact on at-risk kindergarten students. These findings indicate that letter/sound

instruction was effective in improving reading achievement for the half-day Kindergarten

Buddy students.

In response to research question two: there was no significant difference between

students' scores for at-risk students participating in a half-day extended Kindergarten Buddy

Program as compared to students attending half-day kindergarten without an extended

program and those attending full-day kindergarten without an extended program on the

Kindergarten Inventory of Skills from winter 2007 to spring 2007. There was no significant

difference between students' scores in the half-day extended Kindergarten Buddy Program

and the other groups. The data indicated that there was a statistically significant ($p<.05$)

increase on the Kindergarten Inventory of Skills scores for all groups, which is important to

note. After an analysis of the data, the Kindergarten Buddy Program students' scores change

over time appeared to show the greatest improvement although it was not significantly

different than the other groups. This supports the fact that the Kindergarten Buddy Program

was effective for the students. It is unclear whether those Kindergarten Buddy students would

have had the same level of achievement without the program.

The study found that all groups made progress as they proceeded through

kindergarten, which would be expected. One of the reasons that the research did not have

more significant results may be the fact that students were identified for the Kindergarten Buddy Program at the beginning of the school year and remediation of kindergarten skills began early in the school year with the study beginning in the winter. Table 2 showed that the buddy students were far below the other students in the fall of 2006 which highlights the positive aspect of the Buddy Program which allowed the students to achieve the same academic levels as the two other groups. This study's initial data was collected mid-year due to time constraints. Due to this, the majority of growth for the Kindergarten Buddy students may have taken place during the first half of the school year, prior to this study. Continuing in the program during the second half of the year appeared to maintain the Kindergarten Buddy students' ability to stay on grade level with other students.

Comparison and Contrast of Findings Related to the Literature Review

Lev Vygotsky: Developmental Psychologist. Vygotsky's theory of development supports the general beliefs behind this research paper. Vygotsky recognized that the material presented in the classroom should be determined by the needs of the students (Berk & Winsler, 1995; Mooney, 2000). The Kindergarten Buddy Program does that, phonological awareness instruction focused on the areas in which students needed support based on the pre-test assessment and teacher's formal assessments and observations. By determining the areas of weakness as indicated by assessment data, the teachers grouped students by need, taught specific skills and gradually built new learning.

Vygotsky's theory supported the Kindergarten Buddy Program which emphasized a structured program grounded in students' needs and that encouraged social interaction (Mooney, 2000). The Kindergarten Buddy Program promoted this type of environment. Teachers needed to observe students carefully and plan curriculum that

encouraged their emerging abilities. Teachers paired students who could learn from one another. They used careful observations and good judgment about how to support student learning. Curriculum decisions in the Kindergarten Buddy Program were driven by the instructional needs of the students. The teacher scaffolded the learning for the students which was supported by Vygotsky's theory of ZOPD. Learning was scaffolded, and as students mastered pre-requisite skills, additional skills were introduced. Students were encouraged to perform similar tasks independently and more successfully, thus increasing reading achievement.

The Kindergarten Buddy Program provided a time for social learning. Students interacted with peers and teachers to master concepts; an important part of Vygotsky's theory. For example, teachers helped students break words into smaller chunks adding on additional concepts while slowly guiding students through this process. Teachers assessed what the students knew, what they were able to do, and then extended the learning. The Kindergarten Buddy Program sessions contained many scaffolded learning opportunities for students as teachers guided them, e.g., the teachers helped students with unknown words by stretching out the words so students could hear the phonemes and make connections to letters. Vygotsky believed that children on the verge of learning a new concept benefited from the interaction with a peer or an adult, a pillar of the Kindergarten Buddy Program (Mooney, 2000).

Vygotsky stated that teachers and students must collaborate with one another so that learning becomes a reciprocal experience. He viewed learning as coming through social contexts and interactions. Vygotsky believed that collaboration is highly social and interactive. The Kindergarten Buddy Program is grounded in Vygotsky's theory; it is

social, interactive and a cooperative learning experience. Vygotsky's theory supported kindergarten programs that emphasized social learning, student interaction and scaffolded learning, a clear goal of all of the kindergarten programs in the study (Berk & Winsler, 1995; Mooney, 2000).

The importance of kindergarten and full-day kindergarten. The importance of kindergarten and the belief that youngsters must leave their first year of school understanding the structural elements and organization of the printed word, cannot be overstated (Trehearne, 2003). Students must acquire basic phonemic awareness and understand that spoken language can be separated into smaller chunks. Reading instruction in the early grades must emphasize language and pre-reading strategies (McQuillan, 2007). This was a main goal of the Kindergarten Buddy Program.

This study supports the importance of kindergarten as the first formal learning experience for all children. Research states that it is imperative for economically deprived students to be provided with a positive environment which promotes language acquisition in both reading and writing (Cryan, et al., 1992; da Costa & Bell, 2001; Nielson & Cooper-Martin, 2002). Kindergarten teachers must devote extra time to students who have not been read to or who lack prerequisite reading skills; the Kindergarten Buddy Program does just that.

Many studies (Cryan, et al., 1992; da Costa, et al., 2001; Elicker & Mathur, 1997; Hough & Bryde, 1996; Viadero, 2005; Zakaluk & Straw, 2002) showed that participation in a full-day kindergarten program had a positive effect on academic and social achievement. Alber-Kasey (1998) found that full-day students performed higher than the half-day students especially in the areas of spelling and sight vocabulary. da Costa and Bell (2001) confirmed

that children in a full-day kindergarten program experienced significantly greater growth in the pre-requisite skills of reading than those children in the half-day kindergarten program. Hough and Bryde (1996) found that students attending full-day kindergarten experienced a wider range of benefits when compared to their half-day counterparts. Full-day programs provided greater small group activities, additional opportunities for social interaction, and more success in first grade. The Center for Evaluation and Education Policy (2004) reports that full-day kindergarten supported academic achievement and social aspects. Plucker, Eaton, Rapp, et al. (2004) concluded that there was no negative effects associated with full-day kindergarten.

Although this study did not substantiate the claim that full-day programs are more beneficial than half-day programs, the Kindergarten Buddy students' reading achievement was similar to the full-day students. The data shows that the students participating in a half-day extended Kindergarten Buddy Program, as compared to students attending half-day kindergarten without an extended program, scored significantly higher than the half-day kindergarten program on the letter/sounds sub-test. The Kindergarten Buddy Program was effective in improving letter and letter/sound abilities of the at-risk students in the program. Understanding the relationship between letters and sounds was critical for students to be successful and may not have been achieved if the students did not receive the additional instruction. This program seemed to be an effective substitute for a full-day kindergarten program for at-risk students in the area of phonemic awareness.

The importance of early intervention including additional time. Researchers (Black, 2002; Callison, 1998; Millot & Lane, 2002; Smith, 2000; Zimmerman, 2001) found that time and learning are strongly connected and support the importance of providing enough time for

students to process, practice, and express their understanding of new concepts. The National Education Commission (1994) stated that many students have varied needs and require different amounts of time to learn. Black (2002) discussed the importance of using time wisely and that students must have consistent time that involves meaningful interaction with the teacher. The Kindergarten Buddy Program used time in better ways to assist students and thus improved academic achievement. In the Kindergarten Buddy Program time was used effectively, transitions were smooth, and time was maximized. This research supported Black's (2002) findings that student achievement increased when the instruction involves interaction with their teacher; which was a mainstay of the Kindergarten Buddy Program and the results were similar to the full-day program.

The results of this study appeared to support the findings summarized in the research on early intervention and additional time for at-risk students. Research by Nielsen and Cooper-Martin (2002) found that early intervention in reading was related to the success students experienced later in their academic years; certainly the extra time in the Kindergarten Buddy Program benefited at-risk students in letter/sound relationships. This study agreed with the research that more time isn't necessarily the answer but that the quality of teaching was important (Metzker, 2001; Black, 2002; Callison, 1998). The quality and quantity of instructional time, an additional 50-minutes per day in the Kindergarten Buddy Program, influenced student achievement.

The Kindergarten Buddy Program was supported by the findings of Zimmerman (2001) who believed that the school day needs to be lengthened. The premise of the Kindergarten Buddy Program was supported by many authors (Black, 2002; Callison, 1998; Metzker, 2001; Millot & Lane, 2002; Smith, 2000; Zimmerman, 2001) who

believed in restructuring existing time and using it better. Millot and Lane (2002) and

Smith (2000) found that the known factors that subtract from teaching time including

teacher and student absences, calendar days, and field trips, need to be minimized. The

study's findings do not agree with Alber-Kelsay (1998) that the lack of time in a half-day

program can hinder social and academic achievement.

  Instruction in phonological awareness. The IRA and NAEYC (1998) recommend

continuous support and resources for children who are at-risk of developing difficulties

learning to read and write. Phonemic awareness instruction, letter recognition,

segmenting words into sounds, and decoding print text are all effective ways to support

young readers.

  Many studies showed that explicit teaching of phonological awareness in early

grades had an impact on early readers and increased a student's ability to read and spell

(Ball & Blachman, 1991; Bredekamp & Copple, 1997; Trehearne, 2003). Adams (1994)

stated that phonological awareness skills were important and must become automatic so

that students could focus on higher order processes of comprehension during reading and

writing.

  Research showed that instruction in phonological awareness had improved

reading achievement in young children (Ball & Blackman, 1991; Bredekamp & Copple,

1997; Cunningham, 1990; Griffith & Olsen, 1992; NRP, 2000). The degree of intensity

of phonemic awareness instruction needed to be varied based on students needs (IRA &

NAEYC, 1998). Students must be given direct instruction in phonological awareness to

ensure that they have the language skills to be successful readers. Phonological

awareness had a direct relationship to success in reading and is significantly related to

success in the early stages of reading and spelling. Studies showed that performance on phonological awareness tasks predicted early reading success (Ball & Blachman, 1991; Bredekamp & Copple, 1997; Cunningham, 1990; Griffith & Olson, 1992; NRP, 2000).

Research shows that good instruction in the early childhood years can prevent many types of adolescent and adult reading problems (Snow, Burns & Griffin, 1998). The Kindergarten Buddy Program is supported by the belief that activities must be taught in the context of authentic reading and writing. Phonological awareness instruction involved several skills from simple tasks, such as rhyming words, to the most difficult tasks of asking children to segment and blend sounds. Children must be able to manipulate phonemes to be successful readers (Adams, 1994; Allington, 1998; Griffin & Olson, 1992; Trehearne, 2003). To be able to read and spell, beginning readers must use the alphabetic principle of realizing that words can be broken into syllables and phonemes (Ball & Blachman, 1991). Phonological awareness, combined with explicit instruction in the alphabetic principle, helped children become successful readers (NRP, 2000). Phonological awareness skills enabled children to use letter-sound correspondences, which improved reading and writing skills. It was important for these skills to be automatic, so attention could be focused on comprehension. Phonemic awareness, while an important factor, is only one of the many abilities that children need in order to learn to read or write (Adams, 1994; Allington, 1998; Trehearne, 2003).

In all three groups in the study, students participating in a half-day extended Kindergarten Buddy Program, students attending half-day kindergarten without an extended program and students attending full-day kindergarten without an extended program were taught phonological awareness as part of their everyday learning. The

educators in all three schools understood the importance of phonological awareness instruction. Phonological awareness instruction had a great impact on a student's ability to read and write effectively. This was supported by the data that showed enhancing children's letter knowledge and phonological awareness should be a priority goal in the kindergarten classroom (Snow, et al., 1998). The study supported Adams (1994) who stated that the ability to recognize and name letters, as well as the ability to discriminate between phonemes and individual letter sounds, were predictors of early reading success. The phonological instruction included lessons on syllables, onset and rimes, and sounds. Students were taught to segment, blend, and manipulate sounds which concurred with Snow, et al. (1998) and Trehearne (2003). It is imperative that at-risk students receive additional phonological instruction so they can improve their reading achievement and reach grade level benchmarks.

The results of the study indicate that at-risk students benefit from a kindergarten program that stresses the acquisition of pre-reading skills including letter and sound recognition. The researcher believes that the at-risk students probably would have continued to struggle if it were not for the extra instruction given to them in the Kindergarten Buddy Program. This study demonstrated, as have other studies, (Ball & Blackman, 1991; Bredekamp & Copple, 1997; Carlson, et al., 1999; Cunningham, 1990; Griffith & Olson, 1992; Trehearne, 2003) that young children benefit from direct instruction in phonological awareness. Students who are at-risk can catch-up and make great strides on reaching end of year standards by having additional instruction in phonological awareness (Fielding, Kerr, & Rosier, 2004).

The research summarized in Chapter Two states that to create a consistent reading program, schools must emphasize phonics and decoding in early grades. Clear goals and standards that focus on results must be established. Schools must place high value on early detection and remediation of student learning problems. Schools must begin assessment and monitoring in kindergarten (Carlson, et al., 1999). The study supports the recommendations made by the NRP (2000) that "it is imperative that at risk children be identified as early as possible, teaching young children to manipulate phonemes is highly effective across all literacy domains, phonemic awareness instruction teaches children how to manipulate speech sounds and it assists young learners in preparation for reading and writing" (p. 1). The Kindergarten Buddy Program does this on a regular basis.

The research concurred with the IRA and the NAEYC (1998) that teachers must provide generous amounts of time and a variety of interesting activities to develop language, writing, spelling, and reading ability. The Kindergarten Buddy Program is supported by the NRP (2000) that stated phonological awareness instruction is effective when children were taught to manipulate phonemes and that teaching phonemic awareness to children significantly improved their reading. The research agrees with the NRP (2000) which stated that some students needed more instruction in phonemic awareness than others, with non-readers needing more instruction than readers, again a premise of the Kindergarten Buddy Program. Phonemic awareness is a means to an end and the ultimate goal is to help students understand the alphabetic principle so they can learn to read and write (NEA, 2007; NRP, 2000). The researcher agrees that phonemic awareness instruction was not a complete program.

This study is in agreement with the findings of Chapman (2007) who explained that the best way to assess a student's reading ability and phonemic awareness is through small group activities. Kindergarteners develop phonemic awareness in a literacy rich kindergarten classroom. Concepts of print and language based activities must be stressed. Students must be able to apply phonemic awareness in the authentic reading and writing situations (IRA & NAEYC, 1998).

The findings in the study showed there was no significant difference in reading achievement for at-risk students participating in a half-day extended Kindergarten Buddy Program as compared to students attending half-day kindergarten without an extended program and those attending full-day kindergarten without an extended program except in the area of letter/sound relationship. Although the findings of the research do not agree with the studies, which claim that full-day programs are more effective than half-day programs (Cryan, et al., 1992; da Costa, et al., 2001; Elicker & Mathur, 1997; Hough & Bryde, 1996; Viadero, 2005; Zakaluk & Straw, 2002) this study does support the fact that more time and additional support for at-risk students must be a priority in our schools (Black, 2002; Callison, 1998; Millot & Lane, 2002; Smith, 2000; Zimmerman, 2001) and that phonological awareness instruction is beneficial for all students, especially at-risk students (Ball & Blachman, 1991; Bredekamp & Copple, 1997; NRP, 2000; Trehearne, 2003).

Limitations to the Study

In Chapter Three, several limitations were discussed. The sample included 92 students in two school districts. This sample was purposeful and convenient; there was no random assignment to groups. The study was limited to the students who returned the letter of permission signed by their parent. The research study started after the treatment

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(Kindergarten Buddy Program) which began in September 2006. This may have eliminated the treatment effect boost that may have occurred at the start of a new treatment. If the study showed there was a significant difference between the groups, the treatment would have been found to be successful in making a significant difference for at-risk students. It did not, but there is still evidence to support the continuation of the Kindergarten Buddy Program.

Another limitation of the study is that the students' success could not just be isolated to the Kindergarten Buddy Program; the classroom teacher, students' maturation, parental support, and many other factors could have impacted student achievement.

Due to the fact that the three groups attended kindergarten in three different schools, it is hard to ensure that the curriculum and instructional programs were identical, this difference could have impacted the findings.

It should be noted that the researcher was the former principal of Bally School and continued to work in the district. The researcher had no involvement in the Kindergarten Buddy Program in the study.

Implications of the Study

The study was conducted by the researcher with the expectation of finding a significant relationship between reading achievement and additional instruction in phonological awareness for at-risk students. The findings represented by the data suggested that instruction in letter/sound relationships was significant for at-risk students. Instruction in letter identification and letter sounds needs to be a continuous focus of instruction for kindergarten students. Students must master letter/sound relationships to be successful readers. Learning sounds is an important pre-requisite skill for students as they learn to begin

to read. The importance of the letter/sound correspondence cannot be overstated. This skill is needed as students learn to understand the letter/sound relationships of initial consonants, final consonants, blends, digraphs, onset and rimes, prefixes, and suffixes, and segmented and blended sounds. Students need this foundation as they learn to make one-to-one correspondence with the spoken and printed word and begin to read text (Adams, 1994; Trehearne, 2003).

Although all the groups made improvements, and a significant difference was not found between the groups in other areas, the study does have some interesting implications. The study does show that the Kindergarten Buddy Program was successful at providing extra support and small group instruction for at-risk half-day students so that they were as successful as the full-day kindergarten students. The additional 50-minutes a day appears to provide enough extra time for at-risk students to reach end of the year benchmarks when they are not enrolled in a full-day program.

Schools should select a screening assessment that can be used for incoming kindergarteners so that they are aware of students' strengths and weaknesses and can begin to provide programs or services for students as soon as they begin kindergarten. This will reduce the amount of time spent at the beginning of the year getting to know students. Instructional time will not be wasted and teachers can begin immediately teaching the curriculum. After the initial screening, school systems must provide early intervention programs for at-risk students. This is imperative if we want our students to be successful readers by the third grade. Programs that take place during the summer before a student enters kindergarten or any front loading instruction/programs at the beginning of the school year would be beneficial to at-risk students. Programs that focus on phonemic awareness

instruction with a strong letter/sound component will benefit all students especially at-risk kindergarten students. Providing education for parents on the importance of reading and exposing their children to letters and sounds through games, songs, and books would also be beneficial for the at-risk students. Any exposure that parents and families can provide for their children would be helpful.

The cost of full-day kindergarten is a major issue for many school districts and may not be necessary for all children. To provide all of the half-day students in the study with a full-day program three additional teachers in each school would need to be hired and three additional classrooms would be necessary in each school. These costs would also be escalated by transportation, furniture, equipment and supplies. Educators need to be creative as they find ways to increase instructional time for at-risk students while addressing rising costs and financial concerns.

Time and learning must be explored by educators. It is a fact that some students need more time to acquire the skills necessary to be successful readers. With fiscal conservatism and tight budgetary restraints among other issues, educators must become creative at using time wisely. The Kindergarten Buddy Program provided additional time for students without a huge price tag. Educators need to begin to look at time more closely in their schools. Class disruptions must be kept to a minimum. This can only happen when attention is paid to the interruptions and they are either eliminated or scheduled on a limited basis. Instruction must be uninterrupted and focused. School administrators must focus on the quality not quantity of the instructional programs when time is a factor. Students need to be actively engaged, with minds-on learning, with teachers and peers. Teachers must be coached to conduct cooperative, social, and interactive classrooms as supported by Vygotsky's theory.

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Phonological awareness instruction must be a focus of instruction for at-risk students. The study's findings show that instruction in phonemic awareness with an emphasis on letter/sound relationships supported early reading skills. Educators must emphasize the importance of phonemic awareness instruction in the development of reading skills for at-risk kindergarten students. From the data, it is evident that those at-risk students who had the additional 50-minutes of instruction in phonemic awareness were able to make as much progress as students in a full-day kindergarten program. The importance of concentrating on early reading skills, including letter/sound relationships, rhyming, initial sounds, etc. was beneficial for helping at-risk students achieve the necessary skills to be successful readers. The extra time for at-risk students is imperative for school districts that cannot provide a full-day program for their kindergarten students. The Kindergarten Buddy Program is an effective program that provides students with the opportunity of more instructional time, including small group instruction, to reach grade level expectations.

Conclusions

This study was conducted and although it did not find significant relationships for at-risk students participating in a half-day extended Kindergarten Buddy Program as compared to students attending half-day kindergarten without an extended program and those attending full-day kindergarten without an extended program, there were some significant findings.

This data supports the continuation of the Kindergarten Buddy Program. It demonstrated that the Kindergarten Buddy Program was successful. At-risk students in the Kindergarten Buddy Program were able to achieve at the same academic levels as full-day kindergarten students. The data supports the research that states more time and attention is needed for some students to acquire the necessary skills which allowed them

to become successful learners. Due to the lack of funds to sustain a full-day kindergarten program, the Kindergarten Buddy Program can be a viable alternative for school systems that need to provide opportunities for students who needed extra support.

During informal discussions with the Kindergarten Buddy Program staff, they stated that this model was very successful. The kindergarten teachers appreciated the program and believed it was beneficial for their students. It provided their at-risk children with additional support that was needed and helpful. According to the classroom teachers, the Kindergarten Buddy students participated more in the regular classroom. Students became risk takers, raised their hands to give answers and participated more in class. The teachers received a lot of positive feedback from parents and other staff members. Parents commented on many occasions how much their children enjoyed the Kindergarten Buddy Program and on their children's progress. District administrators visited the program on many occasions and were impressed with the academic rigor and student learning.

The Kindergarten Buddy Program is a program that offers students additional academic engaged learning time in a way that enabled educators to work within the allotted time and resources already established in the school day. It gave at-risk students more time to learn as they interacted with students and teachers on a daily basis. It was an immediate intervention that took place at the time of need. The Kindergarten Buddy Program is a viable program that assists educators in providing additional time for youngsters who need support. The researcher believes it is an effective program that should be continued so that it can benefit many kindergarteners for years to come.

Suggestions for Additional Research

Due to time constraints the researcher was unable to conduct a year long analysis of the Kindergarten Buddy Program. For future research, it is suggested that pre-test data be collected at the beginning of kindergarten as opposed to the middle of the school year. This would give a more comprehensive picture with regard to student achievement across a full school year. The researcher believes that statistical significance in more areas could have been found if this was done. A larger number of students in the sample would also benefit future research.

Tracking students throughout their elementary school years would be advantageous. Do the gains attained by the at-risk students remain into grades three or four, or do these at-risk students need continuous support? Is there a difference between boys and girls as students move through the elementary years?

Further investigations could be conducted on the impact of full-day programs on ESL students and students from low income families. How long should phonics programs continue in our schools and should they be used with English Language Learners or Special Education students? What are the long-term benefits? What is the impact of direct explicit instruction in literacy concepts, oral language, and listening skills on at-risk kindergarteners?

Additional research could be conducted outlining the impact of the different phonics programs on at-risk students. A historical study evaluating current at-risk students in upper grades can be conducted; reviewing the reading programs or phonics programs they were exposed to in kindergarten and grade one.

A cost analysis should be conducted to determine the overall expense of the Kindergarten Buddy Program so that interested school districts could have a comprehensive budget in case they wanted to implement the program in their district.

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APPENDIX A: KINDERGARTEN INVENTORY OF SKILLS

Kindergarten Inventory of Skills

1. ***Letter Recognition:*** using letter cards, ask the student to identify the upper case and lower case letters correctly. Present letters in random order. Circle correct responses.

   A B C D E F G H I J K L M

   N O P Q R S T U V W X Y Z   _____/26

   a b c d e f g h i j k l m

   n o p q r s t u v w x y z   _____/26

2. ***Letter Sounds Identification:***

   Consonants: point to each letter card, say, *"tell me the sound it makes."* (For letters g and c, ask the child if they know another sound the letter makes). Circle correct responses.

   b c c d f g g h j k l m

   n p q r s t v w x y z   _____/23

   Long & Short Vowels – point to each letter card, say, *"tell me the sound it makes."* Then ask if the student knows another sound the letter makes. Check off correct responses in the box.

	Long	Short
A		
E		
I		
O		
U		
Score	*/5*	*/5*

3. ***Rhyming Recognition:*** tell the child that rhyming words have the same ending sounds. Say *"boat"* and *"coat"*, ask the child if these two words rhyme. Then say *"sun"* and *"red"*, ask the child if these two words rhyme. Then say, *"I will say two words. Tell me yes if they rhyme and no if they don't."* Circle correct responses.

    lip / sip   tell /sell

    boy / duck   sick / desk

    can / van   bed / dog   _____/6

4. ***Rhyming Production:*** say: "*I'm going to say a word and I want you to give me another word that rhymes with it.*" Say *"live"* wait for child to give a word that rhymes with it. (five, dive or any nonsense word that rhymes.) If the child is not able to produce a rhyme, give them an answer and try another example before beginning this part of the assessment. Circle the correct responses.

    cat   run   fill   let   mop   _____/5

5. ***Beginning Sounds:*** place sample of 3 picture cards in front of child. Say the picture names and ask child to repeat them *(pig, leaf, ladder)*. Ask child to find 2 pictures whose names **begin** with the same sound (child points to two pictures). Place test sets in front of child one at a time. Say picture names and ask child to repeat them. Then ask child to find 2 pictures whose names begin with the same sound.

1. <u>s</u>oap <u>s</u>ock fish   4. dog <u>t</u>owel <u>t</u>en
2. <u>m</u>an sun <u>m</u>ouse   5. <u>f</u>an wave <u>f</u>ive
3. <u>p</u>ear <u>p</u>an dinosaur

_____/5

6. ***Ending Sounds:*** place sample of 3 picture cards in front of child. Say picture names and ask child to repeat them   (*cup, top, van*). Ask child to find 2 pictures whose names **end** with the same sound (child points to 2 pictures). Place test sets in front of child one at a time. Say picture names and ask child to repeat them. Then ask child to find 2 pictures whose names end with the same sound.
1. ba<u>t</u> desk ga<u>t</u>e   4. lo<u>ck</u> jeep for<u>k</u>
2. te<u>n</u>   cor<u>n</u> cab   5. do<u>g</u> le<u>g</u> leaf
3. pur<u>s</u>e bu<u>s</u> rocket

_____/5

7. ***Oral Blending:***
A. Say: "*I will say the 1ˢᵗ sound of a word and then the rest of the word and you will put the word together.*"
   Examples:
   /m/-en is _____men (let child try to guess)
   /f/-an is _____ fan

1. /s/…at   <u>sat</u>   4. /l/…ock   <u>lock</u>
2. /m/…op   <u>mop</u>   5. /t/…ape   <u>tape</u>
3. /f/…ish   <u>fish</u>

_____/5

B. ***Sound to Whole:***
   Say: "*I will say each word sound by sound and you are to say the whole word.*" Example: /b/ /ō/ /t/ boat: /r/ /ă/ /t/   rat.

1. /m/ /ē/   <u>me</u>   4. /s/ /ŭ/ /n/   <u>sun</u>
2. /s/ /ā/   <u>say</u>   5. /m/ /ā/ /k/   <u>make</u>
3. /f/ /ē/ /t/   <u>feet</u>

                                           _____/5

8. ***Oral Segmentation:***
   Say: "*I will say a word. I want you to clap the number of syllables (parts) you hear in each word.*" Demonstrate clapping with child.
   Example: doc-tor = 2 claps   cap= 1 clap

1. pencil   <u>2</u>   4. football   <u>2</u>
2. map   <u>1</u>   5. elephant   <u>3</u>
3. tomato   <u>3</u>   6. lock   <u>1</u>

                                             _____/6

9. ***Initial Consonant Sound:***
   Say: "*I will say a word. Tell me the first sound you hear in each word.*" Example banana /b/, nose /n/

1. sun <u>/s/</u>   4. top   <u>/t/</u>
2. mop <u>/m/</u>   5. candle <u>/k/</u>
3. leaf <u>/l/</u>   6. yellow <u>/y/</u>

                                             _____/6

    Total score   _____/128

APPENDIX B: PARENT/GUARDIAN CONSENT FORM – ENGLISH

January 17, 2007

Dear Parent or Guardian,

My name is _____and I am currently a Principal in _____. I am also a doctoral student at Western Connecticut State University and I am beginning my dissertation research project. The purpose of my study is to determine if additional instruction in phonological awareness, known as the Kindergarten Buddy Program, has an effect on reading achievement for at-risk kindergarten students. My study will compare students in a half-day kindergarten, full-day kindergarten and an extended-day kindergarten program to see if there is a difference in students' reading achievement.

Your child will be assessed in January and May on a Kindergarten Inventory of Skills that will assess letter and sound identification, beginning and ending sounds in words and other reading skills. In May, your child will be given the Gates-MacGinitie Reading Test to assess their reading comprehension. All of the data collected on your child will be shared with their teacher and will help them to work with your child.

Your child's principal had given permission for me to conduct the study and I hope you too will give permission. Please be assured that all information will be held in strictest confidence. At no time will your child's name be used. All data will be reported in group form only. At the conclusion of the study, upon request, you will receive a report of the results.

Please feel free to contact your child's principal or me at _____ if you have any questions. Please accept my sincere gratitude for allowing your child to participate in my study.

Sincerely,

_____

_____
Please return the tear off to your child's teacher.

_____ I give permission for my child to participate in the study.

Parent or Guardian's Name (please print): _____

Child's Name: _____

Signature of Parent or Guardian:_____

Date _____

APPENDIX C: PARENT/GUARDIAN CONSENT FORM – SPANISH

17 de enero del 2007

Estimado/a Padre, Madre o Guardián.,

Mi nombre es _____actualmente soy una Directora de Escuelas en _____
También soy estudiante en un programa doctoral en la Universidad Occidental del
Estado de Connecticut (Western Connecticut State University) y estoy empezando
mi proyecto de investigación tesina. El propósito de mi investigación es para
determinar si la instrucción en el conocimiento fonológico, reconocido como el
Programa de Compañeros en el Jardín de Infancia (Kindergarten Buddy Program),
hace efecto en el éxito de la lectura para estudiantes al riesgo en el Jardín de
Infancia. Mi investigación comparará a estudiantes en el Jardín de Infancia que
asisten por mitad del día, estudiantes en el Jardín de Infancia que asisten por todo
el día, y estudiantes en el Jardín de Infancia que asisten en un programa de día-
prolongado, para descubrir si hay diferencia en el éxito de lectura.

Su niño/a será examinado/a en Enero y en Mayo en un Inventario de Destrezas
para estudiantes en el Jardín de Infancia que le dará valor a la identificación de
letra y sonido, en sonidos de empiezo y terminación en palabras y otras destrezas
de lectura. En Mayo, su niño/a recibirá el examen de lectura "Gates-MacGinitie"
para darle valor a su comprehensión de lectura. Toda la información colectada en
su niño/a será compartida con el/la maestro/a para ayudarle a su niño/a.

El/la Director/a de su niño/a me ha dado permiso para conducir esta investigación,
y espero que Usted también me dé permiso. Quiero asegurarle que toda la
información será guardada en una manera muy confidencial. El nombre de su
niño/a nunca será usado. Toda la información será reportada solamente en forma
de grupo. Al concluir esta investigación, Usted recibirá un reporte de los
resultados, si usted lo solicita.

Favor de sentirse cómodo en contactar el/la Director/a de su niño/a, o a mí, al
número   si Usted tiene preguntas. Favor de aceptar mi gratitud sincera en
permitir a su niño/a el participar en mi investigación.

Sinceramente,

Favor de romper esta forma y regresar a el/la maestro/a de su niño/a.
_____ Doy permiso para que mi niño/a participa en esta investigación.

Nombre del Padre, Madre, o Guardián (favor de escribir en letra de molde):
_____
Nombre del Niño/a:
_____
Firma del Padre, Madre o Guardián:
_____Fecha: _____
17 Janeiro de 2007

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APPENDIX D: PARENT/GUARDIAN CONSENT FORM – PORTUGUESE

Estimados pais e guardianos,

O meu nome é _____e sou actualmente directora daescola segundaria de _____ Eu sou também estudante no programa doctoral de Western Connecticut State University e estou a começar a minha dissertação en un projecto de perquisa. A finalidade do meu estudo é determinar se a instrução da consciência phonological, também conhecido por Kindergarten Buddy Program, têm efeito na realização academica de leitura para estudantes en risco do programa do Kindergarten. O meu estudo campará estudantes dos programs de Kindergarten de meio dia, dia inteiro, e dia prolongado para determinar se há alguma diferença de realização academica de leitura nos estudantes.

A sua criança terá dois testes, um em Janeiro e otro em Maio em um inventario do Kindergarten para determinar e avaliar a suas habilidades de indentificação de letras e sons, sons do principio e fim das palavras, e outras habilidades de leitura. Em maio será dado à sua criança o teste de leitura Gates-MacGinitie Reading Test para avaliar a sua compreensão de leitura. Todos os dados coletados da sua criança serão compartidos com o seu profesor para lhes ajudar a trabajar mejor com a sua criança.

O director da escola da sua criança deu-me a permissão para que eu conduza o estudo e eu espero que voçê também me dê a sua permissão. Eu lhe asseguro que toda a informação estará prendida na mais estrita confiança e o nome da sua criança nunca será usado. Todos os dados serão relatados em formulário de groupo somente. Na conclusão do estudo, se voçê desejar, pode receber um relatório dos resultados.

Por favor, sintase a vontade de poder contatar o director da escola da sua criança o a mim en _____se tiver alguma pregunta. Por favor, aceite a minha gratidão sincera por permitir que a sua criança participar no meu estudo.

Os meus agradecimentos,

_____

_____

Por favor, devolva a parte do fundo ao professor da sua criança

_____ Eu dou a minha permissão para que a minha criança participe no estudo.

Nome do pai/mãe o guardiano (nome escrito) _____

Nome da criança _____

Asinatura do pai/mãe o guardiano _____

Data _____

APPENDIX E: NATIONAL INSTITUTES OF HEALTH (NIH) CERTIFICATION, HUMAN SUBJECTS REVIEW FORM AND INFORMED CONSENT FORM

WESTERN CONNECTICUT STATE UNIVERSITY

Human Subjects Research Review Form

Principal Investigator __*Patricia E. Cosentino*_____

Department ____Instructional Leadership_____

E-mail cosentinop@bethel.k12.ct.us

New research project __X__   Continuation ____   Modification ____   Teaching ____

_____ Exempt Review (attach a completed copy of the "Application for Exemption")

__X_ Expedited/Full Review

To complete this form, please follow the instructions in sections A and B.
===
=======

Checklist for attachments:
__X_ Completed Application for Exemption (if claiming exemption)
__X_ Answers to A1 through A 6
__X_ Survey or questionnaire
__X_ Informed consent form
__X_ Student's current NIH training certificate
____ Instructor's current NIH training certificate
____ Chair's current NIH training certificate
==
The **department chair** and the **principal investigator (PI) must** sign this form. If the PI is a student, his/her faculty supervisor must also sign.

Assurance of continued compliance with regulations regarding the use of human subjects. I certify that the information provided for this project is accurate. If procedures for obtaining consent of subjects change, or if the risk of physical, psychological, or social injury increases, or if there should arise unanticipated problems involving risk to subjects or others, I shall promptly report such changes to the Institutional Review Board. I shall report promptly unanticipated injury of a subject to my department chair and to the Institutional Review Board.

_____   _____

       Principal Investigator's Signature   Date

_____   _____

      Faculty Supervisor's Signature (if PI is a student)   Date

_____   _____

             Department Chair's signature   Date

==

Committee Action:

_____Approved through exempt review   _____ Approved by full
                                                        committee review

_____Approved through expedited review   _____ Not approved; clarification or
                                                        modification required

_____   _____
          IRB Chair's Signature   Date

A. Instructions for completing the HUM-1 Form (attach answers):

For further information on questions 1-6 see the attached dissertation proposal.

1. Describe the characteristics of the subject population (anticipated number, age ranges,
    gender, ethnic background, and health status.

The sample in this study will include approximately 75 kindergarten students from a total of three
elementary schools. The students range in age from 5 to 6 years old. The sample will consist of
males and females and it will be a diverse population including: Whites, Blacks, Asian
Americans, and Hispanics.

2. Explain the rationale for use of special classes of subjects (children, mentally disabled,
    elderly, prisoners, or others).

There will be no use of special classes of subjects.

3. Identify the records or data to be obtained for individually identifiable living human subjects.

Permanent school records will not be used in this study. The Gates-MacGinitie Reading Test
(GMRT-4) (2002) is an instrument that will be used in the study; it will be administered to
students in May 2007. The GMRT-4 will be used to assess students' level of reading
achievement. The Kindergarten Inventory of Skills, a school district assessment will assess
students in the following content areas: upper and lower case letter recognition, rhyme
recognition and rhyme production, initial sound production, oral blending and oral segmentation.
The Kindergarten Inventory of Skills Form A will be administered in the winter of 2007 and
Form B will be administered in May 2007.

4. Describe plans for recruitment of subjects and the consent procedures to be followed, or
    explain why consent is not needed.

Principals and District Administrators have given permission for the study to take place in their
schools. At-risk students were invited to participate in the Kindergarten Buddy Program by the
school staff. Additional at-risk students will be selected by the school staff to participate in the

study. All parents will be given a description of the study and will be asked to give written consent for their child to participate in the study.

5. Describe safeguards to assure anonymity and voluntary participation of subjects. In the case of student subjects, indicate that failure to participate in or withdrawal from the project will not affect class grade.

Information regarding the subjects will remain confidential. All names will be numerically coded to increase the confidentiality. The teachers and school districts will us the students' scores on the assessments to inform instruction and plan accordingly, as they do with all literacy assessments given to kindergarten students. Failure to participate or withdraw from the study will not have an affect on student's grades.

6. "Subject at risk" means any individual who may be exposed to the possibility of injury, including physical, psychological, or social injury, as a consequence of participation as a subject in any research, development, or related activity that departs from the application of those established and accepted methods.   [45CFR 46.3(b)]

The study will not expose any subject to an environment of physical, psychological, or social risk or injury. Results will remain confidential. All personal information will be destroyed. All data will be coded numerically.

B. Answer the following (if you answer yes to either question, the protocol requires full review):

- Does your project involve **risk of physical injury** to subjects?
               ____ Yes   _X___ No
(If yes, describe the nature of the risk, the justification for undertaking the risk, and the procedures used to   obtain the subject's informed consent to take the risk.)

- Does your project involve **risk of psychological or social injury** to human subjects?
               ____ Yes   _X___ No
(If yes, describe the nature of the risk, the justification for undertaking the risk, and the procedures used to obtain the subject's informed consent to take the risk.)

NOTE**: If participation in the research involves physical, psychological, and/or social risk to the subject, the informed consent form** must say so in bold type**.**

==

Please send the completed form (if the protocol requires full review, send 12 copies) to: Director of Grant Programs, 321 Warner Hall. If you have questions, call 7-8281.

WESTERN CONNECTICUT STATE UNIVERSITY
INFORMED CONSENT FOR MINORS AND/OR PERSON WITH LEGAL GUARDIANS

1. Purpose of the Experiment

The purpose of this study is to determine if additional instruction in phonological awareness known as the Kindergarten Buddy Program, has an effect on reading achievement for at-risk kindergarten students. Students' reading achievement will be analyzed to see if participation in the Kindergarten Buddy Program enables students to reach grade level literacy expectations.

Due to the lack of funds and scheduling difficulties, many school districts are unable to offer a full-day kindergarten program. The Kindergarten Buddy Program is a viable alternative for school systems that are seeking ways to provide opportunities for students who require extra support. The effectiveness of providing additional instruction in phonological awareness for at-risk learners needs to be explored to determine if it has a positive impact on reading achievement. This information will be beneficial to school districts as they struggle to meet the needs of students in a fiscally responsible manner. The project has been reviewed by the University's Institutional Review Board.

2. Description of the Experiment; Outline of hypothesis procedure and precautions:

Students' in the half-day extended Kindergarten Buddy Program will be compared to students in a half-day kindergarten program without an extended program and in a full-day kindergarten without an extended program. The Kindergarten Inventory of Skills will be administered in January 2007 and May 2007 and the Gates-MacGinitie Reading Test will be administered in May 2007. The assessment data will be shared with your child's teacher to note his or her progress.

3. Confidentiality of Data; Voluntary Participation:

Please be assured that any data regarding your child will be held in strict confidence by the researcher. At no time will your child's name be used. All data will be reported in group form only. At the conclusion of the study, upon request, you will receive a report of the results.

Please understand that your child's participation in this research is totally voluntary, and that you are free to withdraw at any time during this study without penalty.

I acknowledge that the signer of this consent form has been informed of and understands the nature and purpose of this study and freely consents to participate.

Parent or Guardian (please print): _____

Relationship to Minor: _____

Signature of Parent or Guardian: _____

Project Director: <u>Patricia E. Cosentino</u>   Date: <u>January 9, 2007</u>

Title of Project: <u>The Kindergarten Buddy Program and its Effect on Reading Achievement for At-risk Kindergarten Students</u>