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EXPLORING THE EFFECTIVENESS OF USING INSTRUCTIONAL AIDES FOR
SUPPLEMENTAL INSTRUCTION

by
Cheryl A. Fairchild

A Thesis

Submitted in partial fulfillment of the requirements of the
Master of Arts Degree
of
The Graduate School
at
Rowan University
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Approved by

Professor.

Date Approved April 12, 04

ABSTRACT

Cheryl A. Fairchild
EXPLORING THE EFFECTIVENESS OF USING INSTRUCTIONAL AIDES FOR
SUPPLEMENTAL INSTRUCTION

2003/04

Dr. Ted Johnson
Master of Arts in School Administration

The purpose of this study was to explore the effectiveness of using instructional aides to deliver supplemental instruction in reading and math to at-risk first grade students. The students were identified as at-risk academically and the instructional aides received training in explicit phonics instruction and the use of math games for remediation. Supplemental instruction took place three times a week for thirty minutes sessions during the students' first grade year. Student progress was assessed using miscue analysis, a phonics test and District developed math assessments. At the end of five months of supplemental instruction using explicit phonics, leveled readers and math games to reinforce concepts, all students in the study exhibited growth in their reading and math skills.

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Table of Contents

Acknowledgements.....	page iii
Chapter 1 Introduction.....	page 1
Focus of the Study.....	page 1
Purpose of the Study.....	page 1
Definitions.....	page 1
Limitation of the Study.....	page 2
Setting of the Study.....	page 2
Significance of the Study.....	page 6
Organization of the Study.....	page 6
Chapter 2 Review of the Literature.....	page 7
Chapter 3 Design of the Study.....	page 13
General Description of the Research Design.....	page 13
Development and Design of the Research Instrumentation.....	page 14
Sampling and Sampling Techniques.....	page 16
Description of the Data Collection Approach.....	page 16
Description of the Data Analysis Plan.....	page 17
Chapter 4 Presentation of Research Findings.....	page 19
Introduction.....	page 19
Grand Tour Question.....	page 19

Conclusion.....	page 27
Chapter 5 Conclusions, Implications and Further Study.....	page 28
Introduction.....	page 28
Grand Tour Question Conclusions and Implications.....	page 28
Implications of Study on Leadership Skills.....	page 30
Implications of Study on Organizational Change.....	page 30
Further Study.....	page 31
References.....	page 33
Appendix A.....	page 34
Appendix B.....	page 36
Appendix C.....	page 38
Appendix D.....	page 41
Biographical Data.....	page 43

List of Tables

Table 1 - Results of the Word Awareness Writing Activity.....	page 22
Table 2 - Results of the Leveled Reading Passages	page 23
Table 3 - Results of the Math Concept/Skills Assessment	page 25

Chapter 1

Introduction

Focus of the Study

Our school district has seen an increase in the number of students having difficulty learning to read and write. Allington and Cunningham (2002) attributed the increase in academically at-risk students to the rising number of students living in poverty and/or single family homes in the United States. Fountas and Pinnell (2000) stressed the importance of direct teaching of skills to enable students to become effective readers and writers. In this study, at-risk first grade students received supplemental instruction from trained instructional aides. The instructional aides used explicit phonics instruction and math games to teach and reinforce reading and math skills.

Purpose of the Study

The purpose of this study was to evaluate the effectiveness of using instructional aides to provide supplemental instruction in reading and math to at-risk first grade students using a classroom-based case study design. The study resulted in showing the effectiveness of explicit phonics instruction and math games on the skills of at-risk first grade students. Also, the effectiveness of using instructional aides to provide the supplemental instruction was validated.

Definitions

At-risk – students who are academically 6 months behind in grade level expectations

Explicit phonics – teaching phonics by first teaching separate letter-sound relationships and then teaching how to blend sounds to decode word

Instructional Aide – a classroom aide who works with children and has a minimum of 60 college credits

Supplemental – instruction delivered in addition to the students' daily instruction

Limitation of the Study

Participants in this study were limited to students, instructional aides and teachers of five first grade classes at the Green-Fields Elementary School. An at-risk program aimed at students in other grade levels or in other districts would require appropriate adaptations. The findings of this study could not be used for any other groups because it is grade specific and focused on curricular programs and district specific benchmarks. Because this project was subject to time constraints relative to the completion of the Master's degree program, a long-term, comprehensive analysis of the effectiveness of the use of instructional aides to enable academically at-risk students to catch up with their grade level peers was not possible.

Setting of the Study

West Deptford Township comprises 18 square miles in Gloucester County, New Jersey. It is a geographically diverse township made up of historic small towns, modern housing developments, and rural areas. Families live in apartment complexes, condominiums, single-family detached homes and mobile homes. There are many retail businesses as well as industrial complexes and small oil refineries. Because of the rates in the township, residents enjoy relatively lower taxes as compared with other municipalities in Gloucester County.

West Deptford Township is a predominately white, middle-class community. According to the U.S. Census Bureau, in the year 2000, there were 19,368 residents.

Make up of the population by race and origin is as follows: 92% white, 5% black, 1% Asian, and 1.7% Hispanic. Seventy-six percent of the residents are 18 years or older. The median household income was reported at \$50,583 according to income data provided by the U.S. Census Bureau in 2002. The unemployment rate in West Deptford Township during the first quarter of 2003 was 3%. The township is considered predominately a blue-collar community, with some professional residents.

Township police and fire departments work closely with the schools in programs like DARE and National Fire Prevention Week. The police department has assigned one patrolman to the middle and high schools to act as the School Resource Officer. The township boasts an exceptional athletics program and offers year-round recreational activities for its residents. In 2002, West Deptford opened the RiverWinds Community Center. RiverWinds is an 111,000 square foot facility located on the Delaware River. The community center has an indoor pool, basketball courts, gym and exercise equipment, senior citizens center, and meeting rooms to benefit the residents of West Deptford Township. The township library is linked to the county library system and is also the site of the South Jersey Environmental Information Center.

A township committee made up of five elected members governs the township, with each member serving a three-year staggered term. The committee members elect the Mayor. The township committee and the school district enjoy a healthy working relationship. Numerous examples of the spirit of good relations could be cited. The mayor provided funding for t-shirts for the fifth grade students to wear on their Mt. Misery trip and came to personally present them to the students when the school budget

could no longer provide funding. The mayor and her staff also visit each elementary school, providing Halloween bags, lights, and safety tips.

The community supports the schools through active parent-teacher organizations and attendance at sporting and other school events. However, their support of the school district budget is lacking. Only twice in the past eight years has a school budget passed. Even in years of zero or one-cent tax increases the budget has been defeated. The township committee works with the school board during the appeal process to ensure that valuable programs are maintained.

The West Deptford Township School District is a K-12 district, including five schools: three elementary schools, one middle school, and a high school. The district operates a \$32,000,000 budget. According to the 2002-03 budget, the total cost per pupil was \$10,050. There are 236 faculty members with a median income of \$57,676. The average years experience for district staff is 16.

The elementary schools contain grades K-4 and one principal runs each school. An elementary supervisor oversees the curriculum and instruction in the three schools. There are 300-550 students at each school. Each school houses self-contained and resource room special education classes. Average class size is 20. About one-third of the elementary teachers hold Master's degrees. Guided reading and Writers' Workshop are the foundation for the literacy program at the elementary level. Another curricular initiative is using real-life science materials to teach science. Everyday Math is a third curricular focus at this level.

The high school has 931 students, led by one principal and three assistants. Average class size is 21. Forty-six percent of administrators and faculty hold Master's

degrees, 1% hold Doctoral degrees. The high school continues to upgrade its curriculum with new course offerings, including 14 AP courses. Instructional and administrative programs in technology are central to the curriculum. Eighty-seven percent of eleventh grade students passed the Language Arts section of the HSPA and 71% passed the math section.

The middle school has 1046 students in grades five through eight. One principal is in charge, with two assistants. There are two guidance counselors, one SAC (student assistance counselor), 80 teachers, and numerous instructional aides. Forty percent of administrators and faculty hold Master's degrees. Average class size is 26. Fifth grade classes are self-contained. Sixth and seventh grade students are divided into units called teams. There are three, three-teacher teams in sixth and seventh grades with about 80 students on each team. Eighth grade students are taught in a departmentalized fashion. There are self-contained and resource room special education classes at each grade level. Seventeen percent of the total school population is enrolled in special education.

Math, literacy, science, and social studies are emphasized in all the schools in order to address the Core Curriculum Content Standards and prepare the students for State mandated standardized tests. Spanish instruction begins in first grade and continues through the high school. West Deptford offers an excellent fine and practical arts exploratory and elective program at all grade levels. There is a choir in each elementary school, the middle school and the high school. The middle school and high school have instrumental music programs.

Significance of the Study

The focus of this study was to determine whether using instructional aides to provide supplemental instruction to at-risk first graders was an effective way to raise the students' skill level by the completion of first grade.

Organization of the Study

The remainder of this study is organized this way; Chapter 2: Review of the Literature, Chapter 3: Data Collection, Chapter 4: Data Analysis, and Chapter 5: Conclusions, Implications and Further Study.

Chapter 2

Review of the Literature

The purpose of this study was to evaluate the effectiveness of using instructional aides to provide supplemental instruction in reading and math to at-risk first grade students. In order to realize this goal, an investigation of the effectiveness and use of instructional aides in the classroom was conducted and is included in the following review of literature.

The term at-risk was used to describe students who are in danger of failing to meet their potential academically. These students experience failure in the classroom which often repeats itself year after year. The task of catching up or achieving at the expected level is difficult. Often, at-risk students are retained and then experience failure and frustration in succeeding grades. The tendency to fall further behind academically increases with each additional grade (Manning & Baruth, 1995). These students suffer from low self-esteem and are likely to drop out of school when they reach high school. According to Manning and Baruth the number of students falling behind by one or more grade levels in school provides convincing evidence that educators should identify at-risk students at the earliest time possible.

Longitudinal studies reveal that there is a near 90 percent chance that a student who is a poor reader at the end of first grade will remain a poor reader at the end of fourth grade (Strickland, Ganske, and Monroe, 2002). These at-risk students experience continued failure and defeat throughout school. According to Strickland et al. (2002),

recent research has focused heavily on intervention programs at the first grade level. Some early intervention programs have been successful for students who are at-risk for failure in reading. Early intervention programs focus on the need for direct instruction of skills and the need for many opportunities for independent applications of those skills. Allington and Cunningham (2002) claim that there is good research which demonstrates that most children's reading and writing development can be accelerated if schools use their resources to create programs that provide children with access to instruction of sufficient quantity and quality.

Successful at-risk programs require educators to take several steps in order to gain support and to provide the best possible programs for students at-risk (Manning & Baruth, 1995). These include: assessing the district's programs to determine conditions that improve or cause problems for the at-risk students, identification of potential resources and options to assist at-risk students, and assessment to evaluate the effectiveness of at-risk programs. There are five principal delivery models (Manning & Baruth, 1995) that are often used for at-risk programs: pullout, in-class, add-on, replacement, and school wide projects. The at-risk delivery model that was researched for this study was in-class support using an instructional aide to work with at-risk students within the regular classroom setting.

Many titles are used to describe employees who work under the supervision of a teacher and who assist with the delivery of instruction. Paraeducator, paraprofessional, instructional aide, teacher aide, and teacher assistant are some of the titles assigned to support personnel who work in school districts. These support personnel have become an integral part of the workforce as districts have sought ways to meet the needs of learners

created by changes in society (Pickett & Gerlach, 2003). There are more than 600,000 paraprofessionals in classrooms throughout the country and about 75% of paraprofessionals are employed in the elementary grades (Gerber, Finn, and Achilles, 2001). According to Allington and Cunningham (2002), most schools make use of instructional aides but there is little evidence that suggests that using instructional aides to instruct students, even under a teacher's supervision, benefits the children served. Pickett and Gerlach (2003) report that there are various benefits derived from the use of instructional aides in the classroom. The addition of instructional aides allow more time for one to one and small group instruction, more assessment, and more attention to students' needs.

Originally, instructional aides were used for clerical work, attendance, recess, etc. in order to allow teachers to spent more time on instruction which made it possible to meet the students' individual needs better. However, many schools now rely on instructional aides to replace the teacher and function as tutors with some minimal supervision (Allington & Cunningham, 2002). According to Pickett and Gerlach (2003) since instructional aides were first introduced into classrooms fifty years ago, their roles have changed dramatically. Instructional aides currently assist in all phases of the instructional process and work at increasingly higher levels of independence. Instructional aides work with individual and small groups of students, conduct assessment activities, carry out behavior programs instituted by teachers, and document student behavior and performance. Wadsworth and Knight (1996) found that the instructional aide's role is increasingly that of a facilitator of instructional/behavioral support rather than that of a clerical or lunchroom assistant. Ediger (2003) reports that it

has become difficult for the classroom teacher to determine reading levels of students when he/she is teaching an entire classroom of students and that one student at a time needs to be assessed to determine a personal reading level. To address this problem, Ediger recommends that the teacher should evaluate the students to determine their reading levels while the instructional aide has assigned tasks to have the rest of the class perform.

Despite the reliance on instructional aides and the increased emphasis on the instructional nature of their jobs, many states do not have legislative requirements, regulatory procedures, or written policies that set standards for the supervision and preparation of instructional aides (Pickett & Gerlach, 2003). Also, instructional aides lack the training they need to be successful in the classroom. Wadsworth and Knight (1996) found that there exists a shortage of qualified instructional aides and that there was also a lack of adequate training for those available. A few studies have shown that training in specific instructional roles and routines can enhance the instruction provided by aides and improve the outcomes for the students working with instructional aides but such training is rare (Allington & Cunningham, 2002).

An article in the *American Teacher* (1999) called for school districts to follow the guidelines Title 1 set out for using instructional aides which includes providing aides with adequate training. The No Child Left Behind Act of 2001 (NCLB) established employment criteria for instructional aides who work in staff positions or on school wide programs funded by Title 1 (Likins, 2003). According to NCLB, any instructional aide whose position is funded by Title 1 will have to meet certain requirements. The instructional aide must be highly qualified which means that they must have a associate's

degree or higher, have completed two years of study at a college, or have taken a state or local academic assessment which assessed their knowledge in the instruction of reading, writing, and math. The instructional aide must also work under the supervision of a teacher and the instructional aides need to have adequate training to maximize their effectiveness on students.

A study conducted by John Hopkins showed that instructional aides can have a significant and positive effect on school success (*American Teacher* 1999). The study discovered that the instructional aides required adequate training, clearly defined roles within their classrooms and good working relations with the teachers to be successful. Wadsworth and Knight (1996) found that there is a lack of training for instructional aides and that role expectation for teachers as instructional managers and instructional aides as classroom assistants also require training. Pickett and Gerlach (2003) believe that training programs for instructional aides should be long range, comprehensive and systematic. Training needs to be based on the systematic development of an identified set of skills and knowledge. Districts should identify competencies and instructional needs for aides based on the skills they need to carry out the curriculum.

Research addressing the effect of having instructional aides in the classroom and work in establishing education and training programs for instructional aides are needed (Gerber, Finn, and Achilles, 2001). Research on the effect of instructional aides on student achievement is not abundant. Gerber et al. found that the results of the studies conducted provided neither consistent support for nor consistent repudiation of the use of instructional aides in the classroom. They conducted a study which revealed that student

achievement in instructional aide classes was not much better than that in classes without instructional aides.

Instructional aides play an important role in many classrooms. Their contributions are directly related to the amount of training and supervision they receive. The effect of having instructional aides in the classroom on student achievement is not well documented. This study was conducted to research the effectiveness of using instructional aides in the classroom.

Chapter 3

Design of the Study

General Description of the Research Design

The specific site of this study was an elementary school in West Deptford Township. The study focused on at-risk students in first grade. The at-risk students were in five heterogeneously grouped classrooms. The eighteen students were identified at the end of kindergarten as academically at-risk. Three instructional aides participated in this study as tutors to the students. First grade teachers and the intern were involved as support persons. The building principal was consulted throughout the project.

After a review of the literature, the intern chose materials for remediation of the at-risk students and planned staff development for the instructional aides. Materials were age-appropriate and included lessons that were easily adaptable to the needs of the students of this study. The intern met with the five teachers and the three instructional aides before designing the program to discuss goals and objectives. As a result of this meeting, one goal and three objectives were identified. The goal of the program was to determine the effectiveness of supplemental instruction on the skills of the at-risk students in reading and writing. Objectives included exploring the most effective method for supplemental instruction (small group or individual), exploring which materials were most effective for explicit phonics instruction, and how effective the use of math games were in reinforcing math skills. The intern then assigned the instructional aides to specific students to provide supplemental instruction. The schedule for supplemental

instruction was reviewed and approved by the teachers. A meeting with the instructional aides was held to review the program's goal and objectives and to discuss scheduling of tutoring sessions. The instructional aides were scheduled to work with the at-risk students for a minimum of three times per week for 30 minutes. Some tutoring sessions were held individually and some in small groups depending on the academic needs of each student and their weaknesses on the skills being taught in class. Tutoring sessions began at the end of September 2003 and continued through May 2004.

Development and Design of the Research Instrumentation

The testing instruments used to collect the data in this study were the District approved assessments for first grade. In math, there were ten concept skills which must be secured by the end of first grade. These concepts were assessed by a variety of assessments. These included informal "kid watching" based on a list of activities, formal interviews where the teacher showed the student items or asked the student questions, and paper and pencil tests. An individual profile of progress for each unit showed the student's progress toward learning goals. Student achievement toward learning goals was reported as beginning (student cannot consistently apply the concept/skill), developing (student applies the concept/skill about 50% of the time), and secure (student consistently applies concept/skill).

Progress in literacy was assessed through The Word Awareness Writing Activity (WAWA) and miscue analysis (a running record of a student's oral reading accuracy) on leveled reading passages. The WAWA (see Appendix C) assessed the students' understanding of how words were put together. The student was given pencil and paper and directed to write down the words the teacher dictated. The WAWA scoring chart

placed the students by developmental levels: pre-communicative spelling, semi-phonetic spellers, phonetic spellers, transitional spellers, and correct spellers. The miscue analysis on the leveled reading passages reflected the appropriate developmental range of decoding skills, vocabulary knowledge, and word recognition for first grade students. Each reading passage was sequenced according to benchmarks of reading skill development and to general criteria for text difficulty. Students were given passages to read aloud and the teacher recorded the student's miscues on words. After reading, the teacher asked the student questions to determine comprehension of the text. The results of the leveled reading assessments result in a grade level equivalent in reading.

Weekly tutoring logs from the instructional aides describing what remediation materials and techniques were used provided yet another source of data to support the study. Observations of the instructional aides working with the at-risk students were made by the intern.

Informal meetings with teachers and the instructional aides were held to discuss the effectiveness of the tutoring programs and to share ideas and materials which were effective in remediation. This information was used to develop plans and lessons to further enhance the effectiveness of the tutoring program.

A survey (see Appendix B) was used to determine the effectiveness of the use of instructional aides in providing supplemental instruction to at-risk students at the end of the study. The intern developed this survey which assessed which methods for instruction were the most effective for at-risk students and how many times per week and in what format instruction should be delivered. The survey was anonymous and was given to the first grade teachers and the instructional aides involved in the study.

The data gathered as a result of this survey was used to determine the staff members' beliefs on the effectiveness of the supplemental instruction.

Sampling and Sampling Techniques

Because of the relatively small number of student participants, all of the student assessments which report student achievement were included in the sampling of results. There were 18 students identified as being at-risk at the beginning of the study. For math, student achievement was reported at the end of each marking period. Students are identified as being beginning, developing, or secure for each concept/skills. Literacy achievement was reported by WAWA scores at the end of each marking period and student reading level based on miscue analysis at the end of each marking period. All of the staff survey results were scored and coded.

Description of the Data Collection Approach

Tutoring sessions were held three times a week for thirty minutes from the end of September 2003 to the end of May 2004. Sessions were scheduled in the afternoon in place of science or social studies lessons. The science and social studies material presented in first grade is very general in nature and tutoring sessions were alternated so the students did not miss the same subject all the time. All tutoring sessions were presented by the instructional aides.

The students were identified as being at-risk at the end of kindergarten. To assess their levels at the beginning of first grade, the students were tested during the first two weeks of September by their teachers in both math and literacy. The intern collected the results of the WAWA, the miscue analysis, and the first unit profile of progress for math

to determine if the students were still at-risk. All eighteen students were below benchmark expectations for first grade and therefore were considered at-risk.

Each student was administered the WAWA, leveled reading passages for miscue analysis, and concept/skill driven math assessments (see Appendix A) at the end of each marking period: November 2003, February 2004, April 2004, and June 2004. Each student was tested individually by their classroom teacher. The intern compared the results of each assessment to the previous assessments to determine each student's achievement.

The teacher and instructional aides completed surveys on the effectiveness of the tutoring sessions on student achievement in March 2004. The surveys were completed individually and returned to the intern anonymously through intraoffice mail. All surveys were collected, scored, and coded by the intern.

Description of the Data Analysis Plan

The results of the student assessments in math were analyzed to determine the level of student achievement toward becoming secure with the grade level concepts/skills for math. Student achievement was analyzed at the end of each marking period and compared to the grade level benchmarks to determine the number of concepts/skills which were on target and the number which fell below grade level expectations.

The results of the student assessments in literacy were analyzed to determine student achievement in becoming fluent readers. Student achievement was analyzed at the end of each marking period and compared to the previous WAWA and miscue analysis scores to determine student growth in word recognition and comprehension.

Responses on the teacher and instructional aide surveys were coded to determine the effectiveness of the tutoring sessions on student achievement. Teacher and instructional aide perceptions of the benefits of the tutoring program were also recorded for use in determining plans for further programs.

Chapter 4

Presentation of Research Findings

Introduction

The purpose of this study was to examine the effectiveness of using instructional aides to provide supplemental instruction to at-risk first grade students. A supplemental tutoring program was developed and implemented with the at-risk first grade students at Green-Fields Elementary School. Perceptions of program effectiveness were assessed through student academic assessments, surveys, observations, and informal discussions with the teachers and instructional aides involved in the program.

Grand Tour Question

As a result of the increase in at-risk students seen in the primary grades and a review of the literature which points to early intervention as a critical component in preventing academic failure, the intern focused on at-risk first grade students for this study. The students were identified as being at-risk academically at the end of kindergarten. Due to the limited basic skills program available in Green-Fields School, the intern decided to use instructional aides to provide supplemental instruction in reading and math during the students' first grade year. The goal of the study was to determine the effectiveness of supplemental instruction on the skills of the at-risk students in reading and math. Eighteen students were identified at the beginning of the study as academically at-risk. Two of these students moved out of the school during the first two months of the study. The study continued to follow the other 16 identified students throughout the school year.

Three instructional aides were chosen to tutor the at-risk students. Training was an important feature of the intervention program. The instructional aides were trained by the intern. The training focused on phonics lessons to provide explicit phonics instruction and math games to reinforce math skills. Instructional materials were purchased for the tutoring sessions. Preparation time was provided for the instructional aides to meet with the classroom teachers to discuss student achievement. The instructional aides were also provided with preparation time to develop tutoring lessons. The instructional aides and the intern met biweekly to discuss student progress.

The instructional aides worked with the at-risk students for a minimum of three sessions per week. Each session was 30 minutes long. This provided each student with an additional 90 minutes of instruction per week in reading and math. Tutoring sessions were held both individually and in small groups dependent on each student's weakness with the skills that were the focus of instruction.

Before the implementation of the tutoring program, the intern met with the first grade teachers informally, to talk about the issues related to the at-risk students and to provide an overview of the supplemental program. Teacher input throughout the tutoring program was critical because the classroom teacher administered the student assessments and was the person who was ultimately responsible to make sure each student met the required first grade benchmarks by the end of the school year.

The instructional aides kept weekly tutoring logs which described the remediation materials and techniques that were used. These weekly logs were reviewed by the intern and the classroom teacher for appropriateness of instruction.

Observations of the instructional aides working with the at-risk students were made by the intern, the classroom teachers, and the administration of the school.

The tutoring sessions were held with the at-risk students beginning at the end of September 2003 and continuing until the end of the school year in June 2004. The intern scheduled the tutoring sessions using each classroom teacher's master schedule. The tutoring session times had to match with the time the teacher was teaching social studies or science and the sessions had to alternate so that the students did not miss the same subject consecutively. Students were placed in small groups of two to three students for the tutoring sessions.

The students were actively involved in each tutoring session. The tutoring sessions consisted of explicit phonics instruction, the reading of leveled books, the teaching of decoding and comprehension strategies, and instruction in the use of the number grid and number line to solve math problems. The instructional aides used a combination of classroom materials and remediation materials to provide instruction. The instructional aides sent materials home so reading and math skills could be reinforced outside of school.

Classroom teachers were present in the classroom during each tutoring session. Tutoring sessions were held in a quiet location in the back of the classroom. This allowed the teacher to "oversee" the instruction taking place. At the mid-point of the school year, the teachers provided feedback via a program evaluation survey. Their support of the tutoring program was invaluable as the program was being implemented.

Administrators were involved in the tutoring program from the beginning. The principal lent support to the intern, the instructional aides, and the classroom teachers.

The intern met with the District's Supervisor for Curriculum and Instruction twice a month to report on the status of the tutoring program. The District had increased the use of instructional aides within the kindergarten through sixth grade classrooms in the last few years. As funding dwindled within the District, the Supervisor of Curriculum and Instruction looked for new ideas to address the academic needs of the students. The use of instructional aides for supplemental instruction appeared to be an avenue to explore.

To determine the effectiveness of the supplemental instruction on the skills of the at-risk students, each student was administered the Word Awareness Writing Activity (WAWA), leveled reading passages for miscues analysis to determine reading levels, and the concept/skill assessment for math which required the students to count up and back by 1's starting with any number up to and including 20 (see Appendix A). The results of the student assessments are in the following three tables.

Table 1

Results of the Word Awareness Writing Activity (WAWA)

Student	September 2003	February 2004
1	Stage 1- precommunicative	Stage 5 - correct
2	Stage 3- phonetic	Stage 5 - correct
3	Stage 4 - transitional	Stage 5 - correct
4	Stage 4 - transitional	Stage 5 - correct
5	Stage 4 - transitional	Stage 5 - correct
6	Stage 2 - semiphonetic	Stage 4 - transitional
7	Stage 4 - transitional	Stage 5 - correct
8	Stage 2 - semiphonetic	Stage 3 - phonetic
9	Stage 4 - transitional	Stage 5 - correct

10	Stage 4 - transitional	Stage 5 - correct
11	Stage 1 - precommunicative	Stage 3 - phonetic
12	Stage 4 - transitional	Stage 5 - correct
13	Stage 4 - transitional	Stage 5 - correct
14	Stage 4 - transitional	Stage 5 - correct
15	Stage 4 - transitional	Stage 5 - correct
16	Stage 4 - transitional	Stage 5 - correct

Thirteen of the sixteen students tested moved from the early stages of spelling development to the final stage of spelling development on the WAWA after five months of explicit phonics instruction. The WAWA traced the development of each student's ability to understand how words are put together. The students at stage 5 (correct) understand that vowels appear in every syllable and can identify the beginning and ending sounds and their corresponding letter patterns in words at the first grade level. The three students who were still at the lower stages of spelling development have all made significant progress and have progressed to higher stages of development than they began at in the beginning of the school year.

Table 2

Results of the Leveled Reading Passages

Student	September 2003	February 2004
1	Kindergarten	Early grade one
2	Kindergarten	Early grade one
3	Pre-reading	Kindergarten
4	Kindergarten	Early grade two
5	Kindergarten	Early grade one

6	Kindergarten	Early grade one
7	Early grade one	Early grade two
8	Kindergarten	Kindergarten
9	Kindergarten	Mid-grade one
10	Pre-reading	Early grade one
11	Pre-reading	Kindergarten
12	Pre-reading	Early grade one
13	Kindergarten	Late grade one
14	Kindergarten	Late grade one
15	Early grade one	Late grade two
16	Kindergarten	Late grade one

Six of the sixteen students tested on the leveled reading passages moved up one reading level in the five months between September 2003 and February 2004. The advancement of one reading level in the first five months of first grade is the norm for the District and met the District specified benchmark for the end of the second marking period. Three students moved up two reading levels, four students moved up three reading levels, and two students moved up four reading levels in the five month period. These students showed an above normal improvement in the reading ability during the five month period. Only one student showed no gain in reading achievement. This student was referred to the Child Study Team for further evaluation.

Table 3

Results of the Math Concept/Skills Assessment

Student	September 2003	November 2003
1	beginning	secure
2	beginning	developing
3	developing	secure
4	developing	secure
5	beginning	secure
6	beginning	developing
7	beginning	developing
8	beginning	secure
9	beginning	secure
10	developing	secure
11	developing	secure
12	beginning	secure
13	beginning	secure
14	beginning	developing
15	developing	secure
16	beginning	developing

This math concept was chosen for assessment because it tested the students' ability to count up and back by one's starting with any number up to and including 20 and focused on the students' use of the number line and the number grid. This is important because the students are expected to internalize the number line and grid to solve math problems in order to be secure in this concept. Internalization of the number line and number grid is a District expectation by the middle of first grade.

Eleven of the sixteen students tested were secure on this math concept. This met the District expectation for the end of the first quarter of instruction. The other five students showed progress toward meeting the goal but fell short of the District's expectations. Math progress at the end of the second quarter was not included in this paper because the teachers were not finished assessing students at the time of this writing.

Teacher Feedback: Effectiveness of Supplemental Instruction

The five teachers involved in the study completed a survey on the effectiveness of the supplemental instruction. When asked what delivery method (small group or individual instruction) worked the best for the at-risk students four of the five teachers answered that individual instruction was the most beneficial. Only one teacher believed that the small group instruction model was best. When asked how effective the supplemental instruction was on the skill of the at-risk students, three teachers felt that the instruction was effective and two teachers felt the instruction was very effective for the students. When asked how effective using instructional aides to deliver supplemental instruction was all five teachers answered that it was very effective. Teacher comments included remarks to please continue and expand the program next year.

Instructional Aide Feedback: Effectiveness of Supplemental Instruction

The three instructional aides were surveyed for their opinions on the effectiveness of the supplemental instruction. All three instructional aides reported that individual instruction was the best delivery method for instruction and all three aides reported that the supplemental instruction was very effective at improving the skills of the at-risk students. As one aide reported, "early implementation and frequency are key elements for success in supplemental instruction."

Conclusion

At the end of five months of supplemental instruction using explicit phonics, leveled readers and math games to reinforce concepts, all students in the study exhibited growth in their reading and math skills. Thirteen of the sixteen students tested moved from the early stages of spelling development to the final stage of spelling development on the WAWA after five months of explicit phonics instruction. The three students who were still at the lower stages of spelling development have all made significant progress and have progressed to higher stages of development than they began at in the beginning of the school year. Six of the sixteen students tested on the leveled reading passages moved up one reading level in the five months between September 2003 and February 2004. Three students moved up two reading levels, four students moved up three reading levels, and two students moved up four reading levels in the five month period. Eleven of the sixteen students tested were secure on the math concept assessed. This met the District expectation for the end of the first quarter of instruction. The other five students showed progress toward meeting to goal by feel short of the District's expectations.

The academic gains made by the students in this study and the positive results from the surveys completed by both the teachers and the instructional aides involved validated that the use of instructional aides to provide supplemental instruction to at-risk first grade students was effective in raising the reading and math skills of the students.

Chapter 5

Conclusions, Implications and Further Study

Introduction

The focus of this study was to determine the effectiveness of supplemental instruction provided by instructional aides on the reading and math skills of at-risk first grade students. Students were identified as at-risk and an appropriate tutoring program was designed and implemented in the first grade classrooms in GreenFields Elementary School. Tutoring was conducted a minimum of three times a week for 30 minutes per session. Teachers, instructional aides, and the intern were involved in the program evaluation.

Grand Tour Question Conclusions and Implications

At the end of five months of supplemental instruction using explicit phonics, leveled readers and math games to reinforce concepts, all students in the study exhibited growth in their reading and math skills. The growth in student achievement validated the use of instructional aides to provide supplemental instruction to at-risk first grade students. However, the instruction delivered must be at an appropriate level for the students. The students in first grade varied widely in their academic skills and abilities. The students were at different stages of academic development. Instruction needed to match the developmental level of each child and had to progress at a rate that allowed the child to mature and grow academically without pressure and frustration. This was especially important in reading development. The students had to have a foundation in

phonemic awareness and phonics before they began to read. Once this foundation was in place, the students required reading materials at their instructional level in order to learn to read. Reading materials at higher levels caused frustration and inhibited the student's reading development.

Instruction must also be under the direction of the classroom teacher. The teacher was responsible for the academic needs of each child in the classroom and had to ensure that the students met the District benchmarks for first grade. The teacher knew what skills and concepts had been presented in class and what needed further remediation. The teacher had knowledge of the materials available and was able to direct the instructional aide in material selection. For remediation to be successful, the instruction had to be coordinated between the teacher and the instructional aide. Instruction that was not systematic in the presentation on skills caused confusion for young students. There had to be preparation time for the teacher and the instructional aide to plan instruction as well as discuss concerns.

It was critical that the instructional aides were well trained. The instructional aides needed to be knowledgeable in the first grade curriculum, instructional materials, and the skills and strategies used in the classrooms. They needed a firm understanding of child development for six-year olds and they needed to have group management skills. The instructional aides needed to have good people skills because they each worked with several teachers, the intern, and various school support staff. Staff development for the instructional aides needed to be on-going as the year progressed so they skills could be further refined and enhanced.

Implications of Study on Leadership Skills

Through the research, development, and implementation of tutoring program, leadership skills as outlined in ISLLC Standards were developed. Effective leaders develop programs such as this at-risk tutoring program to meet the needs of students. Throughout this project, the intern collaborated with teaching staff, administration, instructional aides, and students to positively impact student achievement. The implementation of a first grade at-risk tutoring program helped promote a better learning environment in the classroom. High expectations for student achievement were encouraged building an environment where all students can learn and achieve. Academic achievement in the primary grades has a direct impact on how a student will function in succeeding years.

The intern learned a great deal about time management in the completion of this project. Arranging the tutoring sessions to fit into the teachers' schedules provided a glimpse into the particulars of school scheduling in general. The intern used the District designated assessments to track student progress which led to a better understanding of the time consuming task of individually testing each student. Other leadership skills developed included training the instructional aides and researching and selecting materials for instruction.

Implications of Study on Organizational Change

The implementation of this study will impact organizational change in the 2004-2005 school year. The intern met with the District's Supervisor for Curriculum and Instruction to report on the outcome of the at-risk tutoring program. The District had relied on the use of instructional aides within the kindergarten through sixth grade

classrooms to provide basic skills instruction for the last five years. Funding had dwindled within the District at the same time as an increase in at-risk students had been seen. Based on the findings of this study, the Supervisor of Curriculum and Instruction will implement supplemental tutoring for at-risk students in the primary grades to address their academic needs.

Further Study

The benefits of implementing a tutoring program in first grade in GreenFields School were experienced by students, teachers, and the instructional aides. The results of this study validated the effectiveness of using instructional aides to provide supplemental instruction to at-risk first grade students. With the increase in the number of at-risk students and the research that points to the benefits of early intervention programs, it would be beneficial to further study the use of instructional aides in kindergarten and second grade classrooms. Instructional aides could provide supplemental instruction, students could be tracked during the primary grades and results could be examined over a period of several years, from kindergarten through second grade. Based on the literature reviewed for this study, the impact of instructional aides on student academic achievement is an area that has had little educational research.

Professional development in successful remediation programs for at-risk students should be expanded for instructional aides and teachers. There are many programs available and they should be researched to identify which are the best fit for the needs of the school and students. Once programs are chosen, training must be provided for the staff for successful implementation. The more knowledgeable the instructional staff, the better the instructional program.

This study validated the effectiveness of using instructional aides to provide supplemental instruction to at-risk first grade students in one elementary school. Based on the results and limited time constraints of this study combined with the lack of educational research on the effectiveness of instructional aides on student achievement, this is an area of education that requires further study and investigation.

References

Allington, R. L. & Cunningham, P. M. (2002). Schools That Work Where All Children Read and Write. Boston: Allyn and Bacon.

Ediger, M. (2003). Paraprofessionals in reading. Journal of Instructional Psychology,30 (1), 93-96.

Gerber, S.B., Flinn, J. D., & Achilles, C.M. (2001). Teacher aides and students' academic achievement. Educational Evaluation and Policy Analysis,23 (2), 123-143.

Johns Hopkins study shows positive role of paraprofessionals. (1999). American Teacher,84 (1), 3.

Likins, M. (2003). NCLB Implications for paraprofessionals. Principal Leadership,3 (5), 10-13.

Manning, M. L., & Baruth, L. G. (1995) Students at Risk. Boston: Allyn and Bacon.

Pickett, A. L., & Gerlach, K. (1997). Supervising Paraeducators. Austin: Pro-ed.

Strickland, D. S., Ganske, K., & Monroe, J. K. (2002) Supporting Struggling Readers & Writers Strategies for Classroom Interventions. Portland: Stenhouse Publishers.

Title 1 critics target paras. (1999). American Teacher, 83 (8), 3.

Wadsworth, D. E. & Knight, D. (1996). Paraprofessionals: the bridge to successful full inclusion. Intervention in School and Clinic,31, 166-171.

Appendix A
Assessment Instrument

CONCEPT/SKILL ASSESSMENT PLAN ... GRADE ONE

Grade Level

1

Concept to be "Secure" **Q-1** Q-2 Q-3 Q-4

Concept Code

1f

Concept/Skill Statement: **Count up and back by 1's starting with any number up to and including 20**

Concept/Skill "facets" needed to be assessed: (see below ~ "Assessment Description")

Assessment Options:

Place a Check Mark

Informal "kid-watching": (note: list activity and "look-fors")

Formal "interview": (note: show items, questions, and "look-fors")

Paper 'n' pencil items: (note: show items for each concept "facet")

Assessment Description / Items:

Prepared Source: **Pick a number for the student to count from:**

- ▶ Back from 20
- ▶ Back from 13
- ▶ Forward from 12
- ▶ Forward from 7

Plan for Timing of Assessment: 2 weeks prior to end of marking period

Rubric to-be-applied (i.e. what should the student's response look-like / sound-like):

For "SECURE": The student will be able to count without stops, pauses or hesitation. No errors.

For "DEVELOPING": The student will be able to count using a grid or number line for assistance. If they miss 50% or less they will be developing.

For "BEGINNING": The student cannot consistently count using a number line or a number grid. They miss more than 50% of the numbers.

Appendix B

Survey

SURVEY
Effectiveness of Supplemental Instruction

1. Your position? (circle one)

teacher

instructional aide

2. What was the most effective delivery method for supplemental instruction when working with the at-risk students? (circle one)

small group instruction

individual instruction

3. How effective was the use of supplemental instruction on the literacy skills of the at-risk students? (circle one)

**very
effective**

effective

**somewhat
effective**

**not
effective**

4. How effective was the use of supplemental instruction on the math skills of the at-risk students? (circle one)

**very
effective**

effective

**somewhat
effective**

**not
effective**

5. Using instructional aides to deliver supplemental instruction to at-risk students was? (circle one)

**very
effective**

effective

**somewhat
effective**

**not
effective**

6. Your comments on supplemental instruction for at-risk students next year.

Participation in this survey is voluntary. This survey is being used as part of a research project for a master's thesis which is looking at the effectiveness of supplemental instruction on at-risk students. All survey responses will be kept anonymous and confidential. You do not need to respond to all the questions.

Thank you,
Cheryl L. Faichild
856-384-2626

Appendix C
Assessment Instrument

DIRECTIONS FOR THE WORD AWARENESS WRITING ACTIVITY (WAWA)

This activity permits teachers to trace the development of literacy in younger children. We know that when young children attempt to write words, their spelling errors reveal something about their understanding of how words are put together. The research suggests that there is a developmental pattern in the way children form words and that pattern is exhibited by many children as they move through kindergarten and the primary grades. Children's "invented" spelling may therefore be a useful source of information for the assessment of literacy development.

This activity may be done with the whole class, small groups or individually.

1. Introduce the task by saying something like, "I'd like you to try to write some words that I will say. Even if you are not sure about what letters to use, go ahead and try." Since the task could be threatening, reassure the children that you do not expect them to know the correct spelling of the words.
2. Give each child the WAWA paper.
3. Provide some guidance by demonstrating the activity with a practice work. "Let's try a word together. Let's write the word rat. The rat ate some cheese. What letter do you hear at the beginning of rat? What other letters might be needed?" Whatever way you choose to introduce the task, it is important to support all answers. This is not a spelling test – we are trying to understand what children are thinking and are not concerned with their getting the right answers.
4. Dictate the rest of the words, using each in the sentence given. You may repeat each word as often as necessary. If a child seems overwhelmed and upset, you may excuse them from the activity.

- | | | |
|-----|----------|-------------------------------|
| 1. | bed | It's time to go to bed. |
| 2. | truck | I see a dump truck. |
| 3. | letter | The letter is in the mailbox. |
| 4. | bumpy | The road is bumpy. |
| 5. | dress | I bought a new dress. |
| 6. | jail | The thief went to jail. |
| 7. | feet | My feet hurt. |
| 8. | shopping | Shopping at the mall is fun. |
| 9. | monster | The monster is scary. |
| 10. | raced | The car raced down the road. |
| 11. | boat | I rode in a sailboat. |
| 12. | hide | Let's play hide and seek. |

SCORING THE WORD AWARENESS WRITING ACTIVITIES*

A scoring chart is provided below to help you analyze the spelling. Before going further, think about the features that you will look for at each developmental level:

1. **Pre-communicative spelling is the “babbling” stage of spelling. Children use letters for writing words but the letters are strung together randomly. The letters in Pre-communicative spelling does correspond to sounds.**
2. **Semiphonetic spellers know that letters represent sounds. They represent sounds with letters. Spellings are often abbreviated representing initial and/or final sounds. Example: E = eagle; ATE = eighty.**
3. **Phonetic spellers spell words like they sound. The speller perceives and represents all of the phonemes in a word, though spellings may be unconventional. Example: EGL = eagle; ATE = eighty.**
4. **Transitional spellers think about how words appear visually; a visual memory spelling patterns is apparent. Spellings exhibit conventions of English orthography like vowels in every syllable and vowel digraph patterns, correctly spelled inflection endings, and frequent English letter sequences. Example: EGUL = EAGLE; EIGHTEE – eighty.**
5. **Correct spellers develop over years of word study and writing. Correct spelling can be categorized by instruction levels; for example, correct spelling for a body of words that can be spelled, the average fourth grader would be fourth-grade level correct spelling.**

	1	2	3	4	5
WORDS	PRE-COMMUNICATIVE	SEMIPHONETIC	PHONETIC	TRANSITIONAL	CORRECT
bed	random	b	bd	behd	bed
truck	random	tk	trk	trunk	truck
letter	random	it	ldr	ledger	letter
bumpy	random	bp	bmp	bumpee	bumpy
dress	random	js	jrs	dres	dress
jail	random	jl	gal	jale	jail
feet	random	ft	fet	fete	feet
shopping	random	sp	spen	shoping	shopping
monster	random	m	mnstr	monstur	monster
raced	random	r	rast	raist	raced
boat	random	b	bot	bote	boat
hide	random	h	hid	hied	hide

*Adapted from You Can Analyze Development Spelling – and here’s how to do it! by Dr. J. Richard Gentry, (Early Years, May 1985)

Appendix D
Assessment Form

WAWA FORM

Name _____

Date _____

1. _____

7. _____

2. _____

8. _____

3. _____

9. _____

4. _____

10. _____

5. _____

11. _____

6. _____

12. _____

Biographical Data

Name	Cheryl A. Fairchild
High School	West Deptford High School Westville, NJ
Undergraduate	Bachelor of Arts Elementary Education / History Rowan University Glassboro, NJ
Graduate	Master of Arts Reading Education Rowan University Glassboro, NJ Master of Arts School Administration Rowan University Glassboro, NJ
Present Occupation	Supervisor of Curriculum West Deptford Public Schools

