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The effects of explicitly teaching and promoting phonemic awareness to senior kindergarten students at a compensatory education school.

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THE EFFECTS OF EXPLICITLY TEACHING AND PROMOTING
PHONEMIC AWARENESS TO SENIOR KINDERGARTEN STUDENTS AT A
COMPENSATORY EDUCATION SCHOOL

by

Darin Duaine Carroll

A Thesis

Submitted to the Faculty of Graduate Studies and Research
through the Faculty of Education
in Partial Fulfillment of the Requirements
for the Degree of Master of Education
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ABSTRACT

The Effects of Explicitly Teaching and Promoting Phonemic Awareness to Senior Kindergarten Students at a Compensatory Education School

The purpose of this quasi-experimental study was to examine various effects of explicitly teaching and promoting phonemic awareness. Forty-two senior kindergarten students participated in the study. The 21 students who made up the experimental group attended school Monday to Friday during the morning part of the day, and the control group, made up of 21 senior kindergarten students, attended school during the afternoon. Sixteen of the 42 participants were second language speakers of English. The mean age was 52.4 months.

A pretest of phonemic awareness was administered to all participants. After the pretest, the experimental group were explicitly taught a variety of phonemic awareness lessons over an eight-week-period while the control group only received their regular language instruction. Both groups were posttested.

A One-way Analysis of Variance (ANOVA) revealed significant differences between group and pretest and posttest scores. Significance was found for Sound Blending ($p < 0.01$), Phoneme Segmentation ($p < 0.05$), Substitute Initial Consonant ($p < 0.05$), and for Initial Consonant the Same ($p < 0.05$). Significance was not found for Strip Initial Consonant subtest ($p = 0.697$). Effect sizes were moderate to large (e.g., $d = .68$, $d = .90$, respectively). One-way ANOVAs revealed no significant differences between the test scores of male and female participants, between a

participant's birth quarter and their test scores, and the scores of those whose first language was English and those whose was not. A multivariate analysis of variance (MANOVA) revealed a significant interaction between the various subtest scores ($F = 21.150, p < 0.001$), the time (from pretest to posttest) ($F = 60.773, p < 0.001$), time and group ($F = 58.837, p < 0.001$), and test, time, and group ($F = 4.449, p < 0.01$). Results were not significant for test and time ($F = 0.860, p = 0.497$) or for test and group ($F = 2.407, p = 0.067$). A MANOVA revealed significant differences for time of test (overall pretest to overall posttest) ($F = 58.509, p < 0.001$) and for time and group (pretest or posttest and either control or experimental) ($F = 54.161, p < 0.001$).

DEDICATION

I would like to dedicate my first educational research endeavour to my loving mother, who continually supported and encouraged my educational pursuits over the years. Your love, sincerity, strength, compassion, and wisdom pushed me forward in a direction full of dreams and endless possibilities.

I would also like to dedicate my first educational research endeavour to family, friends, colleagues, and past educators who have provided support, encouraging words, and smiles.

Finally, I would like to dedicate my first educational research endeavour to learners both young and old.

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To Dr. Vicki Snider who allowed me to use her testing instrument for my educational research, and who went out of her way to provide me with supplementary materials. My sincere thanks goes out to you!

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CHAPTER I

INTRODUCTION

A. General Statement of the Problem

Learning to read, and learning to read well, is one of the fundamental goals of elementary education. As such, educators must perpetually search for the optimal way to assist learners in achieving this fundamental goal of elementary education. For decades, it was thought that teaching students a rigid phonics program alone would assist them in becoming successful readers. During the last decade, there has been an abundance of research that supports a positive relationship between phonemic awareness, the ability to hear and manipulate the individual sounds in spoken words, and future success as a reader (Chard & Dickson, 1999).

One of the first steps in learning to read and write is to become aware of the various linguistic symbols of the English language system. This illustrates the important role that phonemic awareness plays in assisting children in learning the many facets and intricacies of the English language system, which is critical in acquiring the skill and ability to read. Phonemic awareness interventions and programs have been successful in assisting a wide range of students in learning how to read. The educational implication is that by exposing and explicitly teaching children two to six years of age the various sounds that make up the English language system and how to directly manipulate them, they are more apt to acquire the skill and ability to read (Yopp, 1988).

Phonemic awareness studies are normally longitudinal in nature, as it is the most successful way to determine whether possession of phonemic awareness or exposure to phonemic awareness is a good predictor of future success as a reader. As a result of their longitudinal nature, phonemic awareness studies take a considerable amount of time, from start to finish, yet there are relatively few costs associated with them, and the benefits to the child and to society are invaluable. Phonemic awareness research is usually conducted in the second or third term of kindergarten and is normally followed up in grade one, two, or three to determine if correlations can be made or whether significant differences are found to support researcher predictions and postulations.

Exposure to phonemic awareness alone does not mean that a child will acquire the skill of reading, but rather it is a combination and gradual progression of phonemic awareness, then phonological awareness, and phonics instruction (along with much practice and scaffolding) that assists children in becoming successful readers. Some teachers are apprehensive about phonemic awareness programs, because they have not received adequate professional development about phonemes and phonemic awareness (Richgels, 2001). Teachers, who have been teaching phonics alone, are reluctant to deviate away from older pedagogies of learning and teaching because they lack professional knowledge.

B. Background and Contextual Information

The purpose of this research study was to determine if explicitly teaching phonemic awareness to senior kindergarten students at a compensatory education

school would be effective. The school where the educational research was conducted is designated as a compensatory education school. This means that it receives additional support and funding from the government to offset inequality, so as to help make improvements to students' academic achievement and social skills. Several students who attend Aristotle's Academy for Learning live with only one parent, likely come from homes that are subsidized, and their parent is likely to be on social assistance. According to school records, approximately 50% of the students at Aristotle's Academy for Learning do not have English as their native language. This educational research study underscores the importance of explicitly teaching phonemic awareness to senior kindergarten students (who are culturally and linguistically diverse) at a compensatory education school.

Aristotle's Academy for Learning is located at 2000 Educational Drive in Windsor, Ontario, Canada. The school was opened approximately 30 years ago as part of the eastward expansion of the city. Aristotle's Academy for Learning is one of many schools part of the Utmost School Board.

Aristotle's Academy for Learning is a J. K.-6 school of approximately 400 students located in an industrial sector of a city in Southern Ontario. It serves families in high-density housing around the school and in nearby subsidized housing complexes from which the students are bussed. The school community has become more diversified in recent years and English is no longer the first language for half of the students. School records indicate that the mobility of these families gives the school a turnover

rate of 15-20% of the students each year. There is also a relatively high rate of both absenteeism and lateness. Aristotle's Academy for Learning also has an English as a Second Language Program. Aristotle's Academy for Learning is housed in a well-kept, thirty year old building which contains open-concept teaching areas, closed classrooms, a music room, and three portables. The large classroom areas are carpeted, have flexible furniture and a number of print resources. A Book Room has been set up recently and a number of levelled books have been purchased.

The Principal and Vice-Principal were both appointed in the 2003-2004 school year; the Vice-Principal was already a teacher at Aristotle's Academy for Learning. The Primary Division includes both experienced and relatively new staff members. It is made up of a J. K., two S. K.s (a morning group and an afternoon group), two grade 1s, two grade 2s, a grade 2/3, and two grade 3s. The Junior Division includes both experienced and relatively new staff members as well. It is made up of a grade 4, a grade 4/5, a grade 5, and two grade 6s. Aristotle's Academy for Learning has an Early Literacy Teacher who works with students identified as Level 2 in Grades 1 and 2 as part of the Utmost School Board Pilot Project. There is also a literacy lead teacher who provides 1.0 hour of preparation time, two Special Education Resource Teachers, an Early Childhood Educator who works in J. K., and a Special Education Teacher who runs withdrawal programs (Hewitt, 2004).

C. Study Rationale

Many empirical research studies suggest that phonemic awareness is a strong predictor of success as a reader (Flett & Conderman, 2002). It is essential that

educational research studies of this scope continue to be conducted in the area of early literacy development, as they assist in gaining a better understanding of how young children learn to read and how best to assist learners in achieving this educational end.

This educational research study is directly related to the Ontario Kindergarten Program (1998) that places an overwhelming emphasis on language development and literacy (particularly oral). The phonemic awareness lessons that were implemented were language-based and all of the lessons that the experimental group of S. K. students participated in were oral. The Ontario Kindergarten Program underscores the importance of giving “[c]hildren [...] frequent opportunities to listen to and respond to stories, poems, and rhymes in the classroom” (Ontario Kindergarten Program, 1998, p. 5). The lessons I have implemented adhere to the abovementioned curriculum document, with a particular emphasis on rhyming, phoneme deletion, phoneme segmentation, phoneme substitution, phoneme manipulation, rime tasks, onset tasks, sound-oddity tasks, and blending. In addition, several stories that have many rhymes present in them were read to the experimental group of S. K. students who participated in the research study.

In addition to this research study being beneficial, relevant, and significant to numerous stakeholders, this research study was important to me as a beginning researcher, because I wanted to conduct a strong quasi-experimental study for my first educational research endeavour. Although I am very much a beginner with educational research, I feel that I have made a significant and original contribution to knowledge in the field of educational research by attempting to discover an overall

mean effect between two groups of students on a variety of levels as well as learning how to conduct educational research involving human subjects.

While volunteering at Aristotle's Academy for Learning, I noticed grave deficiencies in language use amongst students. Students who come from home environments that are headed by, in most instances, a single adult (who may or may not be on social assistance); and students who are coming from a home environment where the first language is not English; and students who have entirely different discourses from those who are teaching them are more apt to become successful readers, writers, talkers, and listeners if they are taught in a way that is overt and supported by theoretical and empirical findings; that is, explicitly teaching young students, particularly those who come from families that are not nuclear and/or families who do not speak English at home, phonemic awareness will increase their chances of being successful readers.

I have been interested in the early literacy development of young students for only a short while. The main reason I conducted this study was to assist the abovementioned students in coming to better understand one of the first steps in becoming a successful reader. A second reason I conducted this study was to broaden my understanding of diverse learners and the way that they learn the fundamentals of the English language. A third reason I conducted this research was to heighten my awareness of educational research involving human subjects as well as the various processes associated with conducting such research. A fourth reason I conducted this

research was to broaden and strengthen my understanding of phonemic awareness and early literacy development.

CHAPTER II

REVIEW OF LITERATURE

A. Studies Related to Phonemic Awareness

Researchers have found correlations between kindergarten and first grade students who exhibited phonemic awareness and their future success as readers (Abbott, Walton, & Greenwood, 2002; Allor, 2002; Ehri, Nunes, Willows, Schuster, Yaghoub-Zadeh, & Shanahan, 2001; Eldredge & Baird, 1996; Liberman, Shankweiler, Fischer, & Carter, 1974; Lundberg, Wall, & Olofsson, 1980; Mann, 1993; Mann & Liberman, 1984; Scarbrough, 1998; Snider, 1997; Stanovich, Cunningham, & Feeman, 1984). This awareness is also said to extend to young readers who are deaf (Izzo, 2002; Locke, 1978; Miller, 1997), or students with reading disabilities such as dyslexia (Ackerman & Dykman, 1993; Ackerman, Dykman, & Gardner, 1990; Scarbrough, 1998).

In a 1980 study on the relationship between phonemic awareness skills in kindergarten students and reading and spelling skills in the first years of school, Lundberg, Wall, and Olofsson found significant correlations between phonemic awareness skills in kindergarten students and reading achievement in the first grade. They found statistically significant correlations between synthesis of phonemes, concretely represented (SYNPHONC), direct auditory synthesis of phonemes (SYNPHOND), segmentation into phonemes, concretely represented (ANPHONC), and reversal of phonemes (ANPHONREV) and the teacher's rating of reading achievement (RATEREAD) of 0.59, 0.62, 0.59, and 0.65, respectively. Lundberg et

al. found that over 70% of the subjects who had participated in the study were correctly classified into quartiles that predicted their future school achievement with respect to reading and writing.

Stuart-Hamilton (1986) examined the relationship between phonemic awareness and the reading style of beginning readers. One hundred and fifty-four kindergarten students were individually pretested to see whether they possessed phonemic awareness skills. Twenty pairs of subjects were randomly selected to participate in the study. Twenty of the students exhibited phonemic awareness skills and 20 students did not exhibit phonemic awareness skills, as determined by the Carver Wood Recognition Test, two phonemic awareness tests of the researcher's own devising, Dodd's posting and matching tasks, and an error analysis. In order to be considered as having no phonemic awareness skills, the subjects had to achieve scores of zero on the Carver Wood Recognition Test and on the various other phonemic awareness tests.

It was found that those students who exhibited phonemic awareness skills were able to read more words than those subjects who did not exhibit phonemic awareness skills at the time of the pretest (Stuart-Hamilton, 1986). It was also found that those participants who exhibited phonemic awareness at the time of the pretest substituted and inserted less words than those who did not possess phonemic awareness at the time of the pretest.

Cunningham (1990) examined the relationship between explicit and implicit instruction in phonemic awareness. There were 48 kindergarten students in the study.

A series of tests were administered during the fall and spring of the kindergarten and grade-one year. By using multiple regressions, Cunningham was able to monitor the subjects' progress with respect to the phoneme deletion tasks as well as the phoneme oddity tasks, and was able to correlate these results to the subjects' later reading achievement or lack thereof.

It was noted that the means in both the kindergarten and first-grade pretest and posttest increased dramatically (Cunningham, 1990). The method of instruction did not have a significant effect on these particular outcomes. For the phoneme deletion tasks during the kindergarten phase of the study, the means increased for metalevel (pretest mean = 1.92, posttest mean = 9.15), for skill and drill (pretest mean = 1.71, posttest mean = 7.21), and for control (pretest mean = 2.00, posttest mean = 2.43). For the phoneme deletion tasks during the first-grade phase of the study, the means increased for metalevel (pretest mean = 5.36, posttest mean = 9.93), for skill and drill (pretest mean = 2.77, posttest mean = 9.64), and for control (pretest mean = 5.43, posttest mean = 8.14). There were similar increases in the means for the phoneme oddity tasks in the kindergarten and first-grade phases as well. These results were then used to predict subjects' performance on the Metropolitan Achievement Test. Using the data obtained from the kindergarten and first-grade pretests and posttests, and through exploring the relationship among the variables (using a series of hierarchical multiple regressions), it was found that the various measures used to assess phonemic awareness were predictive (63%) of later reading achievement.

In 1993, Mann studied the relationship between phonemic awareness and future ability as a reader. There were 100 participants ($n = 52$ males and $n = 48$ females) in this study. The ages of the participants ranged from 64 months to 81 months, with a mean age of 71.1 months. The participants were tested in May of their kindergarten year, and were tested approximately one year later. Of the 100 participants, 79 were available for the first-grade testing procedures. The participants were given four tests. They were as follows: Phoneme Segmentation Test (PST), The Invented Spelling Test (IST), The Beery-Buktenica Figure Copying Test (VMI), and The Draw-a-Man Test (DAM).

Some of the results of Mann's (1993) research that indicated a relationship between phonemic awareness and success as a reader included, but were not limited to, the following: kindergarten students who determined which four words started with a different sound were more likely to become better readers than those who did not, meaning that the individual differences in the number of correct items accounted for an appreciable amount of differences in future reading ability—between 30% and 40%. Further, the results of both tests of phonemic awareness were significantly related to reading ability; and the results of the phoneme segmentation test correlated ($p < 0.01$) with reading ability. These results and correlations were significant whether the participants' reading ability was measured with the Word Identification and Word Attack subtests of the Woodcock Reading Mastery Tests or with the Metropolitan Reading Test.

Castle, Riach, and Nicholson (1994) examined the relationship between phonemic awareness instruction within a whole language program and reading and spelling achievement. Aside from the formal results of their study, which supported their hypothesis that children who began school with low levels of phonemic awareness would likely need Reading Recovery, there were informal yet significant findings. Castle et al. monitored the progress of some of the subjects who had participated in the study, and found that 4 of the 17 (23%) subjects in the group who had received phonemic awareness training needed Reading Recovery at six years of age. On the other hand, however, they found that 14 out of 32 (43%) of the subjects who had not received the phonemic awareness training needed Reading Recovery at six years of age.

Lundberg, et al.'s (1980), Stuart-Hamilton's (1986), Cunningham's (1990), Castle et al.'s. (1994), and Mann's (1993) studies were supported by Snider's (1997) study on the relationship between phonemic awareness and later reading achievement (which supported that phonemic awareness was a strong predictor of later reading achievement). The results of Snider's (1997) study indicated that the ability to segment phonemes, the ability to strip the initial consonant, and the ability to substitute the initial consonant were predictive of later reading achievement. The low performing group (as determined by the pretest) had extreme difficulty with the Strip Initial Consonant and Substitute Initial Consonant components (as indicated by means and standard deviations of less than 1).

Ehri, Nunes, Willows, Schuster, Yaghoub-Zadeh, and Shanahan (2001) conducted a meta-analysis on all of the research studies that had been conducted on phonemic awareness and its relationship to reading achievement. Ehri et al. wanted to find out how much more the mean of the phonemic awareness instructed groups exceeded the mean of the control group in standard deviation units. They found that the overall effect size (d) of phonemic awareness was substantial. Specifically, they found that $d = 0.86$, based on 72 comparisons. In doing this meta-analysis, they were able to purport that a strong relationship existed between explicit phonemic awareness instruction and success as a reader.

In a longitudinal study on phonemic awareness, Abbott, Walton, and Greenwood (2002) conducted a phonemic awareness intervention with 39 kindergarten students, who were identified as having high, medium, or low levels of phonemic awareness. Subjects were identified based on their performance on the Dynamic Indicators Basic Early Literacy Skills (DIBELS) (Kaminski & Good, 1996). The participants in this study were assigned to a high, medium, or low group based on their performance on the DIBELS. All participants received 20 minutes of instruction per day during their learning-centre time. The students who were assigned to the lowest group met with their teacher four days a week; the students who were assigned to the medium group met with their teacher twice a week; and the students who were assigned to the high group met with their teacher once a week.

The results of the kindergarten intervention (as measured by the DIBELS) indicated that the skills of the target students increased in letter naming and onset

fluency, but they declined in the phonemic segmentation skill. There was a decline in the phonemic segmentation skill because the principal had expressed major concern that phonemic segmentation skills were beyond the abilities of the kindergarten students involved in the study, and would not allow the teachers to continue (Abbott et al., 2002).

In the second year of the longitudinal study, the teachers were able to administer the phonemic segmentation tasks to the participants. The results for this portion of the study ranged from zero to 76%, with a mean gain of 41%. The students who made the largest gains in this eight-week period were those who had done poorly on the pretest of phonemic awareness. There was a positive relationship between being exposed to a phonemic awareness program and gains in the process of learning to read (Abbott et al., 2002).

In the third year of the longitudinal study (expanded first-grade intervention) 45 students participated in the study. The results for this portion of the longitudinal study indicated that *all* students made progress in phoneme segmentation. The low group's (n = 4 students) pretest mean increased from 2 phonemes per minute (p.p.m.) to 22 p.p.m. at posttest—a 90% gain. The middle group's (n = 4 students) pretest mean increased from 13 p.p.m. at pretest to 42 p.p.m. at posttest—a 69% gain, and the high group's (n = 4 students) pretest mean increased from 22 p.p.m. to 35 p.p.m. at posttest—a 39% gain. According to Good, Simmons, and Kamyenui (2002), students who scored 35-45 correct p.p.m. established phonological awareness—the next step in the process of learning how to read.

Ashmore, Farrier, Paulson, and Chu (2003) examined the relationship between phonemic awareness drills and word reading performance. One of the primary goals of this study was to establish a relationship between phonemic awareness drills and word reading performance in a later learned alphabet script. A second primary focus of this study was to see whether the treatment of phonemic awareness and phonological awareness and word reading could be generalized across gender, or if the findings were specific to gender. Statistically, they found that after a ten-week intervention of phonemic awareness drills word reading improved for both the control group and the experimental group: 8 to 11 words (27% gain) for the control group, and 10 to 15 words (50% gain) for the experimental group. The results of the study did not support their hypothesis that there would be gender differences, as there were no statistically significant differences between the results of females and males.

B. Studies Related to Socio-economic Status, Gender, and Second Language Acquisition

Center, Freeman, and Robertson (1998) conducted an in-school evaluation of Schoolwide Early Language and Literacy (SWELL) in six disadvantaged schools in NSW, Australia. Center et al. stressed the importance of the first five years of a child's life in acquiring linguistic and cognitive skills that assisted them in being successful at school. Center et al. suggested that children who have experienced rich interactions with their parents and quality preschool programs in the first five years are able to respond more effectively and positively to the demands of school. Belsky and McKinnon (1994) (as cited in Center et al., 1998) suggested that, even though

students who were at a disadvantage (those who did not receive any form of child care and/or worthwhile parental interactions), benefited from being afforded positive experiences with their classroom teacher. Bialystock (1996), Byrne, Fielding-Barnsley, and Ashley (1996), and Scanlon and Vellutino (1996) (as cited in Center et al., 1998) suggested that when disadvantaged and at-risk students were provided with effective early intervention in print concepts, story language discourse, and phonological processing skills in the early school years it helped assist learners in becoming better readers, spellers, and writers.

The results of the three-part study conducted by Center et al. (1998) indicated that, after a twelve month intervention with the disadvantaged kindergarten students for the first part of the study, the experimental group outperformed the control group multivariately ($p < 0.01$). Univariately, the experimental group of kindergarten students outperformed the control group on the Passage Reading Test (PRT) and the Expressive Word Attack Skills (EWAS) ($p < 0.01$), but not on the Burt Word test ($p = 0.268$). For the second part of the study, results indicated that after 18 months, multivariately, there were significant differences between the control group and the experimental group ($p < 0.01$). Univariately, the experimental group outperformed the control group on the EWAS ($p < 0.01$) and the Diagnostic Reading test ($p < 0.01$) but not on the PRT ($p = 0.122$). The experimental group also outperformed the control group on the spelling test ($p < 0.01$). In the third part of Center et al.'s study significant differences were found, multivariately ($p < 0.01$). Univariately, the experimental group outperformed the control group on the EWAS, the Diagnostic

Reading test, and the Diagnostic Spelling test ($p < 0.01$). Significance was also established on the PRT ($p < 0.05$).

Duncan and Seymour (2000) conducted a cross-sectional study on the socio-economic differences in the foundation-level literacy with students who attended Nursery or Primary 1, 2, or 3 classes. Duncan and Seymour's study was based on the premise that low socio-economic status (SES) was associated with a low level of reading achievement. This was supported by the National Child Development Study which tracked students' progress with respect to word recognition ability over several years. By age seven, there were significant differences between groups with 40% of those who were in low SES groups obtaining low scores compared to 13% of those who were in a higher SES. Moreover, a student's reading progress was shown to be significantly higher if they were a part of the higher social class and significantly lower if they were part of the two lower social classes (e.g., 79% and 39%, respectively). It was concluded that SES accounted for a 17-month gap in reading age (Davie, Butler, & Goldstein, 1972; Wedge & Prosser, 1973, as cited in Duncan & Seymour, 2000).

The participants for Duncan and Seymour's (2000) study were children who came from diverse SES backgrounds. Students from two schools that had contrasting socio-economic profiles were tested on a variety of levels with respect to beginning reading. The results of Duncan and Seymour's (2000) study indicated that there were significant differences between schools on a test of vocabulary for Nursery: $t(33) = 2.65, p < 0.05$, Primary 1: $t(39) = 2.82, p < 0.01$, Primary 2: $t(38) = 2.60, p < 0.05$,

Primary 3: $t(37) = 4.73, p < 0.01$. Multivariate tests were also performed to determine significant differences between SES and the BAS word Reading Test. Results were similar to that of the vocabulary test with the high SES group significantly outperforming the low SES group in Primary 1-3. For letter knowledge, content and functor word reading, and in simple non-word reading there were significant differences between SES group across grade levels.

The results of Duncan and Seymour's (2000) study are similar to the results of Bowey's (1995) study on socio-economic status differences in preschool phonological sensitivity and first grade reading achievement. Bowey (1995) conducted a study that used two groups of five year old children whose fathers' occupations differed significantly with respect to education and skill. The children were administered various tests which included receptive vocabulary and grammar, phonological sensitivity, letter knowledge, and novice reading ability. Bowey concluded that SES contributed to differences between groups with respect to word-level reading achievement.

Hyde (1988) conducted a meta-analysis of 165 studies related to verbal ability between male and female subjects. The weighted mean effect size (d) was 0.11 which indicated a slight female superiority in verbal ability. This, however, was so slight in terms of significance that it was concluded that there were no overall significant differences between males and females with respect to verbal ability. A variety of measures were analyzed for statistical significance, but no single measure was

reported to be significant enough to suggest that males and females differ with respect to verbal ability.

Quiroga, Lemos-Britton, Mostafapour, Abbott, and Berninger (2002) conducted a study on phonological awareness and beginning reading in Spanish-speaking ESL first graders. Quiroga et al. had 30 Spanish-speaking English as a second language (ESL) first graders, whose families were Latino immigrants and who had all of their schooling instruction in English, complete several tests of phonological awareness and word reading. It was concluded that phonological awareness in Spanish was highly predictive of phonological awareness in English and word reading ability in Spanish was highly predictive of word reading in English. Quiroga et al. asserted, then, that phonological awareness transferred across first and second language and across oral and written language.

Lesaux and Siegal (2003) conducted a study on the development of reading in children who speak English as a second language. In the study, there were 978 participants. There were 790 English-speaking children and 188 ESL speakers. Participants were tested in kindergarten and in grade 2 on reading, spelling, and phonological processing. Both groups received phonological awareness instruction in grade 1 and phonics instruction in grade 2. When the groups were posttested it was found that the ESL students were comparable to the English language speakers and in some instances even outperformed English language speakers on a variety of measures. It was concluded that kindergarten phonological awareness instruction was as effective for ESL speakers as it was for English language speakers. The results of

Lesaux and Siegal's (2003) study were similar to that of Geva, Yaghoub-Zadeh, and Schuster's (2000) study that investigated individual differences in word-recognition skills of ESL children. Geva et al. concluded that it was possible to predict large amounts of variance on word recognition performance six months and one year later in both ESL and English language groups.

CHAPTER III

DESIGN AND METHODOLOGY

A. Ethics

This research study followed routine ethical procedures in which, through letters of information, permission was sought from related parties. For this research study, permission was sought and granted by the University of Windsor's Research Ethics Board, the Utmost School Board, the principal of Aristotle's Academy for Learning, and the senior kindergarten teacher. As well, a letter of information and a consent form was sent home to parents informing them about the study and requesting their permission for their child to participate in the study. There was a high response rate (98%) for parental consent to participate in research, as only one parent denied permission for their child to participate in the research. Furthermore, students gave a verbal assent stating that they would like to participate in the study. Written permission was sought and granted by Dr. Vicki Snider to use her (1998) Test of Phonemic Awareness for Beginning Readers.

B. Subjects

The subjects of this study consisted of 42 senior kindergarten students. There was a morning group (n = 21) and an afternoon group (n = 21) of S. K. students at Aristotle's Academy for Learning, Southern Ontario, Canada. The students in the morning group comprised the experimental group and the afternoon group comprised the control group. An important consideration to make with respect to this research is that one group of students attended school during the morning and one group attended

school during the afternoon. The following questions should be considered: Do children who attend senior kindergarten in the afternoon get more rest than those who attend in the morning? Do students who attend in the morning have a parent who works midnights? Do children who attend in the afternoon experience better lessons because the lessons had already been taught, and, if necessary, had been modified to make them more interesting? Do children who attend in the morning receive better instruction because their teacher is rested and ready to teach? Do children who attend school during the afternoon get breakfast and lunch before starting school? These questions provide insight into some possible factors that could contribute to student success or lack thereof when considering which group children are arbitrarily placed into.

Facts associated with being a morning or afternoon student may have had an influence on the findings of this study, but these factors are beyond the scope of this study. The groups in this study were randomly selected; that is, a coin was tossed to see what group would make up the experimental group and what group would be the control group. This randomization helped to alleviate any threats to the internal validity of the study. It was also beneficial that students were randomly and arbitrarily placed into either the morning group or afternoon group (i.e., it is not the choice of the parent to have their child placed in either group, unless there is a daycare issue or other parental concern).

The selection of the school and participants was not random; rather, it was purposive as Aristotle's Academy for Learning was one of only a few compensatory

education schools in the area. The study design, therefore, is quasi-experimental because the participants and the school were not randomly selected. It should also be mentioned that I had been volunteering at Aristotle's Academy for Learning for quite some time before the onset of this study. Normally, I worked with small groups of students in a variety of grades giving remedial instruction in reading and mathematics. While volunteering, I became increasingly interested in the grave deficiencies I had noticed in students' language use which then led me to want to conduct a study that closely looked at ways that could better enhance the learning potential of these students.

There was an even number of males ($n = 21$) and females ($n = 21$) who participated in the study. A preliminary crosstabulation to test for group inequality revealed that group composition was comparably the same with respect to sex, but it should be mentioned that they were not the same and it was approaching significance (e.g., experimental group had 38.1% female and 61.9% male participants whereas the control group had 61.9% female and 38.1% male participants). The fact that the group composition was approaching significance is interesting to note. The fact that the control group had a higher number of female subjects is important in interpreting the findings in that females generally learn language earlier than boys. One would assume, then, that the control group would be at an advantage because there were several more girls than the experimental group. The mean age of the participants was 52.4 months. Five students who participated in the study were born in the first quarter of the year, 10 students in the second quarter, 12 students in the third quarter, and 15

in the fourth quarter of the year. Several students ($n = 16$) who participated in the study had English as their second language.

C. Instrumentation

Written permission was granted by Dr. Vicki Snider to use her Phonemic Awareness Test (Revised) for Beginning Readers (see Appendix A). With the exception of the accompanying illustrations, Snider's (1998) Phonemic Awareness Test (Revised) for Beginning Readers (see Appendix B) was used to assess the subjects' level of phonemic awareness during the pretest. This testing instrument has five different parts: 1) Sound Blending; 2) Phoneme Segmentation; 3) Strip Initial Consonant; 4) Substitute Initial Consonant; and, 5) Initial Consonant Same. The five parts of the phonemic awareness test have slightly different but concise sets of instructions. There was some modelling and practice items provided for the subjects so that they could easily understand what is being asked of them. For the posttest, the test was altered minimally (see Appendix C) so that the words were just slightly different (e.g., f-i-sh changes to d-i-sh, nice (n-i-s) changes to dice (d-i-s)). All other aspects of the testing instrument remained the same from pretest to posttest. It should be mentioned that the administration of the pretest and posttest instrument was not done blind; that is to say, the pretest and the posttest were researcher-administered.

D. Reliability and Validity of Instrumentation

The reliability and validity of phonemic awareness testing instruments have been found to have significantly high reliabilities. The reliability of testing instruments similar to this one have been found to be reliable at 0.90 (Stanovich, Cunningham, &

Cramer, 1984; Yopp, 1988). Roswell-Chall's (1959) Phoneme Blending test was found to be reliable at 0.96, Liberman et al.'s (1974) Phoneme Counting Test was found to be reliable at 0.83, Bruce's (1964) Phoneme Deletion Test was found to be reliable at 0.92, and Goldstein's (1974) Phoneme Segmentation Test was found to be reliable at 0.88. The predictive validity of phonemic awareness testing instruments have been found to have high predictive validities. Goldstein's (1974) Phoneme Segmentation Test was found to have a predictive validity of 0.71, Yopp's (n.d.) Modification of the Sound Isolation Test was found to have a predictive validity of 0.72, and the Yopp-Singer's (n.d.) Phoneme Segmentation Test was found to have a predictive validity of 0.71 (Yopp, 1988).

E. Collection of Data

The researcher administered the five-part phonemic awareness test to the 42 S. K. students on an individual basis. The test was administered in the students' classroom at a desk in the coatroom. The five-part test took approximately twenty minutes to administer to each student. The researcher was able to administer approximately ten to twelve tests each day. The testing for the pretest took five days and the testing for the posttest took four days. Data for all 42 subjects was gathered in the pretest as well as in the posttest. During the pretest and the posttest, as well as during the time when the explicitly taught phonemic awareness lessons were implemented, observational and anecdotal notes were taken for the purpose of understanding the behaviours, attitudes, and understandings of the participants during various segments of the study.

The testing procedure was as follows: The researcher modeled for the subjects exactly what they were to do (e.g., Listen to the word “task”. If I take away the /t/ sound, “ask” is left. What word is left? Let’s try some more. Practice words: a. hill; b. man). The modelling and directions were similar for each of the five parts of the test.

The researcher recorded on the student data sheet each correct and incorrect answer the student gave. Upon completion of the five-part phonemic awareness test, the student returned to their seat or group and continued with their class-work. The researcher then called the name of the next student to be tested for phonemic awareness. The procedures were the same for the posttest.

After the pretest was complete the researcher implemented a wide-range of explicitly taught phonemic awareness activities (see Appendix D) to only the experimental group of S. K. students who participated in the study. Activities included the following: read-alouds of a variety of Dr. Seuss books (whole class), sound blending activities, phoneme segmentation activities, strip initial consonant activities, substitute initial consonant activities, and initial consonant same activities. Each activity conducted lasted between 20-25 minutes. The activities were implemented over an eight week period during class, normally after their first circle. After the implementation of the explicitly taught phonemic awareness activities, the posttest was administered to both the control group and the experimental group of S. K. students. Shortly after the posttest was administered, subjects in both groups

were verbally debriefed as to what had transpired during the course of the research study.

F. Data Analysis

The data obtained and gathered during this experimental research study was analyzed using S.P.S.S. v.12 for Windows. The statistical tests performed include One-way Analysis of Variances (ANOVAs), Multivariate Analysis of Variances (MANOVAs) as well as descriptive statistics. The tests were run to see whether there was a statistically significant difference between the experimental group and control group of S. K. students from pretest score to posttest score, scores between genders, scores between students whose native language was English and the scores of those whose native language was other than English, and scores between time, scores between time and group, and scores between test, group, and time. The alpha level chosen was .05. Results for each of the five subtests as well as overall pretest and overall posttest scores were analyzed.

G. Qualitative Observations

It needs to be mentioned that these observations are included to provoke thought, and to perhaps reinforce and solidify the quantitative results of this study. It was not the researcher's intention to collect qualitative data nor was it the researcher's intention to report any qualitative findings. When conducting educational research, however, it is useful and beneficial to examine an idea, problem, or question in many ways. One such way is to examine or evaluate a certain program or teaching style both quantitatively and qualitatively. By evaluating education in this way we deepen

and broaden our understanding without relying on a single way of coming to understand our students and education. While conducting the pretest and posttest as well as when the explicitly taught phonemic awareness activities were being implemented to the senior kindergarten students in the experimental group various anecdotal and mental observations were made with respect to their gestures, overall presence, understanding, responses given, motivation, attitude, and behaviour. To reiterate, the purpose of this research project was not to evaluate phonemic awareness and its effects on senior kindergarten students qualitatively, but I believe it is useful to give an account of certain qualitative characteristics that might deepen and strengthen our understanding without having to solely rely on the quantitative results of this research study. The observations that are mentioned here, then, will serve only to reinforce or question the quantitative results obtained from the pretest and posttest. The way the observations that were made during the course of the research study are outlined as follows: observations made during the pretest, discussing each subtest sequentially, then observations made during the implementation of the explicitly taught phonemic awareness activities, then observations made during the posttest, discussing each subtest sequentially.

H. During the Pretest

During the pretest it was noted that several students had great difficulty understanding the tasks they were asked to partake in. Even after two practice items were given to each student before they were asked to answer each of the ten questions in the five subtests, they still had great difficulty understanding what it was they were

required to do. Most students seemed to understand what they were required to do for the Sound Blending subtest. It seemed as though students were able to identify words that they were familiar with or that were a part of their vocabulary (e.g., fish, house), but unfamiliar words were difficult for them. A word like jeep, then, posed a problem for students who had never heard a word like it before. It was also noted that some students provided responses that sounded similar yet not the exact word required (e.g., big was given for pig). Several students provided the word man as their answer to several of the questions. The word man was the practice item in the directions to the students.

The Phoneme Segmentation subtest was a lot more difficult for students to grasp. If a student had difficulty with the Sound Blending subtest they had an even harder time with the Phoneme Segmentation tasks. Some students performed very well on this subtest, but it was noted that students simply did not understand what it was they were required to do. Many students provided responses that were close, but did not give the correct answer required (e.g., fat, /f-at/ is incorrect; fat, /f-a-t/ is correct). Although several students did provide responses, they were not the exact response required. Some students seemed to add on an extra sound(s) at the end of the word they were attempting to segment (e.g., top, /t-o-p-p-p/ is incorrect; top, /t-o-p/ is correct). Several students also had great difficulty with the word slip. Unlike other words in the Phoneme Segmentation subtest the word slip has four separate sounds

(s-l-i-p). Many students provided responses that were close to what they required to do, but it was not sufficient for a correct response (e.g., sl-ip, sl-i-p-p). Some students even provided the word that they were asked to segment as their answer.

The Strip Initial Consonant subtest was even more difficult than the Phoneme Segmentation subtest. Several students did not understand what was being asked of them. Students seemed to get frustrated during this test as they could not provide any response to the questions. There were only a few students in both groups who were able to answer questions on this subtest correctly. Some students provided answers that were not close to the answer sought, or they provided the word that they were given, or they provided a word from a previous subtest or practice item (e.g., man, sun).

Students seemed to have the most difficulty with the Substitute Initial Consonant subtest. As with the Strip Initial Consonant subtest students seemed not to know what they were being asked to do. Students provided answers that were not even close to what the actual answer was. Again, students seemed to get frustrated because they could not successfully answer these questions. Some students provided answers that started with the sound that they were required to use, but failed to provide the correct answer.

Most students seemed to understand the final subtest, Initial Consonant the Same, and its questions the best. Some students found this task to be particularly easy, and were quickly providing answers. Others, however, got only half of the answers correct. Students' frustration seemed to dissipate during this subtest as it was a lot

easier than the others. It was noted that their confidence and motivation was higher during this subtest. This was evident in their eagerness to hear the next question and the happier expressions on their face.

I. During the Explicitly Taught Phonemic Awareness Lessons

During the implementation of the explicitly taught phonemic awareness activities to the experimental group of students it was noted that students were eager to participate in the activities. There was a group of students who continually raised their hands to participate in the activities. It was noted that the subtests that students had most difficulty with (e.g., Strip Initial Consonant and Substitute Initial Consonant) were also the most difficult of the explicitly taught phonemic awareness activities to implement. Students, however, were eager to participate in these activities as well. As in the subtests some students provided answers that were not close to the required answer, but over time (and sometimes within one lesson) students' understandings of what was required of them changed. The activities were relatively easy to implement to the senior kindergarten students. Students were able to hear the responses of others, and were able to begin to understand the various tasks they were exposed to. It seemed as though some students needed only to understand what it was they were required to do in order to provide a correct answer. It was noted that several students said, "I get it now" or "I know what you mean." With this in mind, then, it seems as though some students need to be explicitly taught various phonemic awareness tasks so that they understand what is required of them.

J. During the Posttest

The posttest yielded many of the same responses as in the pretest. Students in both groups, however, seemed to understand better exactly what they were required to do, especially the experimental group. Some students in both groups still did not understand what they were being asked, but it was noted that students in the experimental group provided answers much more readily than did students in the control group. It seemed as though the posttesting procedure went slightly quicker with the experimental group than it did with the control group. While conducting the posttest it was noted that students in the experimental group seemed more eager to participate, and their motivational level seemed much higher than the students in the control group. Students in the experimental group often made comments about their learning experiences in class when the explicitly taught phonemic awareness activities were being taught to them (e.g., “I remember when we did this”, or “That’s easy, we already learned this”).

CHAPTER IV

RESULTS AND DISCUSSION

A. Research Questions and Hypotheses

1. Research Question: Will there be a statistically significant difference between the scores of the experimental group of S. K. students (those who receive explicitly taught phonemic awareness activities) and the scores of the control group of S. K. students (those who receive their regular language instruction)?

The data collected from this study was analyzed through the following hypothesis, as stated in the null:

Hypothesis: There will not be a statistically significant difference between the scores of the experimental group of S. K. students (those who receive explicitly taught phonemic awareness activities) and the scores of the control group of S. K. students (those who receive their regular language instruction)?

2. Research Question: Will there be a statistically significant difference between test scores (e.g., Sound Blending, Phoneme Segmentation, Strip Initial Consonant, Substitute Initial Consonant, Initial Consonant Same), test scores and group (e.g., experimental or control), time of test (e.g., pretest or posttest), test scores and time, and test scores, time and group?

The data collected from this study was analyzed through the following hypothesis, as stated in the null:

Hypothesis: There will not be a statistically significant difference between the test scores (e.g., Sound Blending, Phoneme Segmentation, Strip Initial Consonant,

Substitute Initial Consonant, Initial Consonant Same), test scores and group (e.g., experimental or control), time of test (e.g., pretest or posttest), test scores and time, and test scores, time and group.

3. Research Question: Will there be a statistically significant difference between time (e.g., overall pretest scores or overall posttest scores) and time and group (e.g., experimental or control)?

The data collected from this study was analyzed through the following hypothesis, as stated in the null:

Hypothesis: There will not be a statistically significant difference between the time (e.g., overall pretest scores or overall posttest scores) and time and group (e.g., experimental or control)?

4. Research Question: Will there be a statistically significant difference between the pretest to posttest scores of male and female participants?

The data collected from this study was analyzed through the following hypothesis, as stated in the null:

Hypothesis: There will not be a statistically significant difference between the pretest to posttest scores of male and female participants.

5. Research Question: Will there be a statistically significant difference between the pretest to posttest scores of participants whose first language is English and participants whose first language is other than English?

The data collected from this study was analyzed through the following hypothesis, as stated in the null:

Hypothesis: There will not be a statistically significant difference between the scores of the participants whose first language is English and participants whose first language is other than English.

6. Research Question: Will there be a statistically significant difference between a participants' birth quarter and their pretest to posttest scores?

The data collected from this study was analyzed through the following hypothesis, as stated in the null:

Hypothesis: There will not be a statistically significant difference between a participants' birth quarter and their pretest and posttest scores.

B. Findings

Several statistical tests were performed using S.P.S.S. for Windows v.12 to describe various aspects of the study and to determine statistical significance, means, and standard deviations. There were a total of 42 participants involved in the research study. The mean age of the participants was 52.4 months. There were 21 males and 21 females who participated in the research. Statistically, group composition was found to be relatively the same. However, there are differences in terms of the number of male and female participants in the experimental group and the control group. As mentioned earlier, a preliminary crosstabulation to test for group inequality revealed that group composition was comparably the same with respect to sex, but it should be mentioned that they were not the same and it was approaching significance (e.g., experimental group had 38.1% female and 61.9% male participants whereas the control group had 61.9% female and 38.1% male participants). The fact that the group

composition was approaching significance is interesting to note. The fact that the control group had a higher number of female subjects is important in interpreting the findings in that females generally learn language earlier than boys. One would assume, then, that the control group would be at an advantage because there were several more girls than the experimental group. Similarly, there are differences in the number of participants whose first language is English in the experimental group and the control group. Table 1, below, describes the participants' sex, group composition, and first language.

Table 1 Participants' Sex, Group Composition, and First Language

	Frequency	Percent	Valid Percent	Cumulative Percent
Sex				
Male	21	50.0	50.0	50.0
Female	21	21	50.0	100.0
Total			100.0	
Group				
Experimental	21	50.0	50.0	50.0
Control	21	50.0	50.0	100.0
Total	42	100.0	100.0	
ESL				
English	26	61.9	61.9	61.9
Other	16	38.1	38.1	100.0
Total	42	100.0	100.0	

A crosstabulation (see table 2a.) accompanied with a Chi-square Test (see table 2b.) was performed to determine whether there was a difference between the composition of the experimental group and the control group for sex and group. A

crosstabulation (see table 3a.) accompanied with a Chi-square Test (see table 3b.) was performed to determine if there were any significant differences between the composition of the experimental group and the control group for birth quarter inequality. A crosstabulation (see table 4a.) accompanied with a Chi-square Test (see table 4b.) was performed to determine if there were any significant differences between first language and group. Results suggest that, although the composition of the control group and the experimental group did not have an equal number of male and female participants in each group, it was not a significant difference ($p = 0.217$). Results also suggest that there were no significant differences between group and birth quarter ($p = 0.896$). Although each group was not comprised of an equal number of first and second language users, results indicate that there were no significant differences between first language and group ($p = 0.751$). The results of these tests suggest that there were minor differences between group composition at the onset of the study which, however, were not significant enough to be overly concerned about. That is, the groups are relatively alike and can be compared for differences on sex and score, birth quarter and score, and first language and score without any great degree of concern about inequality from the onset.

Table 2a. Crosstabulation for Sex Inequality Between Groups at Pretest

	Group		Total
	Experimental	Comparison	
Sex: Female			
Count	8	13	21
% within sex	38.1%	61.9%	100.0%
% within group	38.1%	61.9%	50.0%
% of total	19.0%	31.0%	50.0%
Sex: Male			
Count	13	8	21
% within sex	61.9%	38.1%	100.0%
% within group	61.9%	38.1%	50.0%
% of total	31.0%	19.0%	50.0%
Total			
Count	21	21	42
% within sex	50.0%	50.0%	100.0%
% within group	100.0%	100.0%	100.0%
% of total	50.0%	50.0%	100.0%

Table 2b. Chi-square Tests for Sex Inequality Between Groups at Pretest

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1- sided)
Pearson Chi-Square	2.381*	1	.123		
Continuity Correction**	1.524	1	.217		
Likelihood Ratio	2.404	1	.121		
Fisher's Exact Test				.217	.108
Linear-by-Linear Association	2.324	1	.127		
N of Valid Cases	42				
* 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.50.					
** Computed only for a 2 x 2 table.					

Table 3a. Crosstabulation for Birth Quarter Inequality Between Groups at Pretest

Birth Quarter	Group		Total
	Experimental	Comparison	
First			
Count	3	2	5
% within Birth Quarter	60.0%	40.0%	100.0%
% within Group	14.3%	9.5%	11.9%
% of Total	7.1%	4.8%	11.9%

Table 3a. Continued

Birth Quarter	Group		Total
	Experimental	Comparison	
Second			
Count	5	5	10
% within Birth Quarter	50.0%	50.0%	100.0%
% within Group	23.8%	23.8%	23.8%
% of Total	11.9%	11.9%	23.8%
Third			
Count	5	7	12
% within Birth Quarter	41.7%	58.3%	100.0%
% within Group	23.8%	33.3%	28.6%
% of Total	11.9%	16.7%	28.6%
Fourth			
Count	8	7	15
% within Birth Quarter	53.3%	46.7%	100.0%
% within Group	38.1%	33.3%	35.7%
% of Total	19.0%	16.7%	35.7%

Table 3a. Continued

Birth Quarter	Group		Total
	Experimental	Comparison	
Total			
Count	21	21	42
% within Birth Quarter	50.0%	50.0%	100.0%
% within Group	100.0%	100.0%	100.0%
% of Total	50.0%	50.0%	100.0%

Table 3b. Chi-Square Tests for Birth Quarter Inequality Between Groups at Pretest

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.600*	3	.896
Likelihood Ratio	.603	3	.896
Linear-by-Linear Association	.022	1	.882
N of Valid Cases	42		

* 2 cells (25.0%) have expected count less than 5. The minimum expected count is 2.50.

Table 4a. Crosstabulation for First Language Inequality Between Groups at Pretest

First Language	Group		Total
	Experimental	Comparison	
English			
Count	14	12	26
% within ESL	53.8%	46.2%	100.0%
% within Group	66.7%	57.1%	61.9%
% of Total	33.3%	28.6%	61.9%
Other			
Count	7	9	16
% within ESL	43.8%	56.3%	100.0%
% within Group	33.3%	42.9%	38.1%
% of Total	16.7%	21.4%	38.1%
Total			
Count	21	21	42
% within ESL	50.0%	50.0%	100.0%
% within Group	100.0%	100.0%	100.0%
% of Total	50.0%	50.0%	100.0%

Table 4b. Chi-square Tests for First Language Inequality Between Groups at Pretest

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.404*	1	.525		
Continuity Correction**	.101	1	.751		
Likelihood Ratio	.405	1	.525	.751	.376
Linear-by-Linear Association	.394	1	.530		
N of Valid Cases	42				
* Computed only for a 2 x 2 table.					
** 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.00.					

Research Question: Will there be a statistically significant difference between the scores of the experimental group of S. K. students (those who receive explicitly taught phonemic awareness activities) and the scores of the control group of S. K. students (those who receive their regular language instruction)?

The data collected from this study was analyzed through the following hypothesis, as stated in the null:

Hypothesis: There will not be a statistically significant difference between the experimental group of S. K. students (those who receive explicitly taught phonemic awareness activities) and the control group of S. K. students (those who receive their regular language instruction)?

A One-way ANOVA was performed to determine whether there were significant differences between groups for pretest and posttest scores on the five subtests of phonemic awareness (see table 5). Results indicate that for Sound Blending pretest the difference was not significant ($p = 0.958$), for Phoneme Segmentation pretest the difference was significant ($p < 0.05$), for Strip Initial Consonant pretest the difference was not significant ($p = 0.827$), for Substitute Initial Consonant pretest the difference was not significant ($p = 0.954$), and for Initial Consonant Same pretest the difference was not significant ($p = 0.447$). Pretest scores reveal only one disparity between groups. The control group of students outperformed the experimental group on only the Phoneme Segmentation subtest.

Results indicate that for Sound Blending posttest the difference was significant ($p < 0.01$, $d = .90$), for Phoneme Segmentation posttest the difference was significant ($p < 0.05$, $d = .80$), for Strip Initial Consonant posttest the difference was not significant ($p = 0.697$, $d = .14$), for Substitute Initial Consonant posttest the difference was significant ($p < 0.05$, $d = .66$), and for Initial Consonant Same posttest the difference was significant ($p < 0.05$, $d = .68$). The experimental group outperformed the control group at posttest in four of the five subtests, including the subtest that the control group had outperformed the experimental group in the pretest. In terms of percentages (from pretest to posttest), the experimental group experienced a 51% gain in correct answers for Sound Blending, a 77% gain in correct answers for Phoneme Segmentation, a 57% gain in correct answers for Strip Initial Consonant, a 62% gain in correct answers for Substitute Initial Consonant, and a 35% gain in correct answers

for Initial Consonant Same (see table 5 for pretest and posttest means and standard deviations). This means that the 21 students in the experimental group who were explicitly taught phonemic awareness doubled their scores from pretest to posttest whereas those students in the control group did not experience any gain from pretest to posttest. On average, those students in the experimental group experienced a 56.4% gain in correct answers on the five subtests of phonemic awareness. It can be estimated that if students are explicitly taught phonemic awareness they can expect to experience gains of over 50%. This means that 3 out of 4 students will experience gains of 75% or more. In this case, approximately 15 out of 21 students in the experimental group experienced average gains of approximately 75% as opposed to students in the control group who did not experience any gains. Therefore, because there were significant differences between the pretest to posttest scores of the control group and the experimental group, the null hypothesis for research question 1 must be rejected.

The data obtained confirms Cunningham's (1990) findings that explicitly teaching phonemic awareness is effective in improving a student's level of phonemic awareness. The data obtained also illustrates the effectiveness of teaching phonemic awareness to senior kindergarten students, as students in the experimental group significantly outperformed students in the control group on four of five subtests of phonemic awareness one of which the control group had outperformed the experimental group during the pretest of phonemic awareness.

Table 5 F Values, Significance Levels, Means, Standard Deviations, Standard Errors, and Effect Sizes for Subtests of Phonemic Awareness

Test	F	Sig.	Mean		Std. Deviation		Std. Error		ES
			X	C	X	C	X	C	
SBPT	.003	.958	3.904	3.952	3.031	2.801	.661	.611	
PSPT	4.823	.034	.952	2.619	1.687	3.040	.368	.663	
SICPT	.048	.827	1.238	1.428	2.718	2.890	.593	.630	
SUBICPT	.003	.954	1.476	1.523	2.482	2.856	.541	.623	
ICSPT	.590	.447	4.761	5.476	2.736	3.265	.597	.712	
SBPOST	8.559	.006	5.904	3.333	2.826	2.869	.616	.626	.90 **
PSPOST	4.569	.039	4.142	2.047	3.650	2.616	.796	.571	.80 **
SICPOST	.153	.697	2.904	2.476	3.986	3.043	.869	.664	.14
SUBICPOST	4.365	.043	3.857	1.761	3.320	3.176	.724	.693	.66 *
ICSPOST	6.757	.013	7.285	5.476	1.736	2.676	.378	.583	.68 *

Table 5 Continued

SBPT=Sound Blending Pretest
PSPT=Phoneme Segmentation Pretest
SICPT=Strip Initial Consonant Pretest
SUBICPT=Substitute Initial Consonant Pretest
ICSPT=Initial Consonant Same Pretest
SBPOST=Sound Blending Posttest
PSPOST=Phoneme Segmentation Posttest
SICPOST=Strip Initial Consonant Posttest
SUBICPOST=Substitute Initial Consonant Posttest
ICSPOST=Initial Consonant Same Posttest
X=Experimental Group
C=Control Group
ES=Effect Size
* indicates a moderate effect size
** indicates a strong effect size
bolded numbers indicate significance at 0.05 or lower

Research Question: Will there be a statistically significant difference between test scores (e.g., Sound Blending, Phoneme Segmentation, Strip Initial Consonant, Substitute Initial Consonant, Initial Consonant Same), test scores and group (e.g., experimental or control), time of test (e.g., pretest or posttest), test scores and time, and test scores, time and group?

The data collected from this study was analyzed through the following hypothesis, as stated in the null:

Hypothesis: There will not be a statistically significant difference between the test scores (e.g., Sound Blending, Phoneme Segmentation, Strip Initial Consonant, Substitute Initial Consonant, Initial Consonant Same), test scores and group (e.g., experimental or control), time of test (e.g., pretest or posttest), test scores and time, and test scores, time and group.

A MANOVA was performed to determine if there was an interaction between test (e.g., Sound Blending, Phoneme Segmentation, Strip Initial Consonant, Substitute Initial Consonant, Initial Consonant Same), test and group (e.g., control or experimental), time (pretest or posttest), time and group, test and time, and test, time and group (see table 6). For test, results indicate that the difference was significant ($F = 28.15, p < 0.001$), for test and group the difference was not significant ($F = 2.407, p = 0.067$), for time the difference was significant ($F = 60.773, p < 0.001$), for time and group the difference was significant ($F = 58.837, p < 0.001$), for test and time the difference was not significant ($F = 0.860, p = 0.497$), and for test, time and group the difference was significant ($F = 4.449, p < 0.01$). Therefore, because there were significant differences between test scores (e.g., Sound Blending, Phoneme Segmentation, Strip Initial Consonant, Substitute Initial Consonant, Initial Consonant Same), test scores and group (e.g., experimental or control), time of test (e.g., pretest or posttest), test scores and time, and test scores, time and group, the null hypothesis for research question 2 must be rejected.

The data obtained from the MANOVA confirms numerous studies that have found significant interactions between test, time, and group (see Ehri, Nunes, Willows,

Schuster, Yaghoub-Zadeh, & Shanahan, 2001). Many studies have found statistically significant interactions between these three measures which indicate the likelihood that phonemic awareness can be effectively taught to a wide range of students including those who are living in poverty and those who speak English as a second language.

Table 6 Multivariate Tests for Significant Interactions Between Test; Test and Group; Time; Time and Group; Test and Time; and, Test, Time, and Group

Interaction	Value	F	Sig.	Partial ETA Squared
Test				
Pillai's Trace	.753	28.150	.000**	.753
Wilks' Lambda	.247	28.150	.000**	.753
Hotelling's Trace	3.043	28.150	.000**	.753
Roy's Largest Root	3.043	28.150	.000**	.753
Test / Group				
Pillai's Trace	.207	2.407	.067	.207
Wilks' Lambda	.793	2.407	.067	.207
Hotelling's Trace	.260	2.407	.067	.207
Roy's Largest Root	.260	2.407	.067	.207
Time				
Pillai's Trace	.603	60.773	.000**	.603
Wilks' Lambda	.397	60.773	.000**	.603
Hotelling's Trace	1.519	60.773	.000**	.603
Roy's Largest Root	1.519	60.773	.000**	.603
Time / Group				
Pillai's Trace	.595	58.837	.000**	.595
Wilks' Lambda	.405	58.837	.000**	.595
Hotelling's Trace	1.471	58.837	.000**	.595
Roy's Largest Root	1.471	58.837	.000**	.595

Table 6 Continued

Interaction	Value	F	Sig.	Partial ETA Squared
Test / Time				
Pillai's Trace	.085	.860	.497	.085
Wilks' Lambda	.915	.860	.497	.085
Hotelling's Trace	.093	.860	.497	.085
Roy's Largest Root	.093	.860	.497	.085
Test / Time / Group				
Pillai's Trace	.325	4.449	.005*	.325
Wilks' Lambda	.675	4.449	.005*	.325
Hotelling's Trace	.481	4.449	.005*	.325
Roy's Largest Root	.481	4.449	.005*	.325
* significant at the .01 level				
** significant at the .001 level				

Research Question: Will there be a statistically significant difference between time (e.g., overall pretest scores or overall posttest scores) and time and group (e.g., experimental or control)?

The data collected from this study was analyzed through the following hypothesis, as stated in the null:

Hypothesis: There will not be a statistically significant difference between the time (e.g., overall pretest scores or overall posttest scores) and time and group (e.g., experimental or control).

A MANOVA was performed to determine significance between time (e.g., pretest or posttest) and time and group (e.g., control or experimental) for overall pretest and posttest scores (see table 7). For time, results indicate that the difference was significant ($F = 58.509, p < 0.001$), and for test and time the difference was significant ($F = 54.161, p < 0.001$). The effect size was quite large: $d = 3.62$. In terms of percent (from overall pretest score to overall posttest score), the experimental group experienced a 50% gain in correct answers (see table 6 for overall pretest and posttest means and standard deviations). Overall (pretest score plus posttest score), the experimental group answered 6.796 more questions correctly than did the control group. Therefore, because there were significant differences between time (e.g., overall pretest scores or overall posttest scores) and time and group (e.g., experimental or control), the null hypothesis for research question 3 must be rejected. Again, numerous studies confirm an interaction between time and group. Several researchers have found that the experimental group has significantly outperformed the control group on various measures of phonemic awareness.

Table 7 Means, Standard Deviations, and Multivariate Tests for Significant

Interactions between Pretest to Posttest Scores and Pretest to Posttest Scores and Group

Pretest Mean		Posttest Mean		Pretest Standard Deviation		Posttest Standard Deviation	
X	C	X	C	X	C	X	C
12.1429	14.8095	24.4762	15.0476	9.83507	12.39201	13.20462	12.43976
Interaction				Value	F	Sig.	Partial ETA
Time							
Pillai's Trace				.594	58.509	.000*	.594
Wilks' Lambda				.406	58.509	.000*	.594
Hotelling's Trace				1.463	58.509	.000*	.594
Roy's Largest Root				1.463	58.509	.000*	.594
Time / Group							
Pillai's Trace				.575	54.161	.000*	.575
Wilks' Lambda				.425	54.161	.000*	.575
Hotelling's Trace				1.354	54.161	.000*	.575
Roy's Largest Root				1.354	54.161	.000*	.575
* significant at the .001 level							

Research Question: Will there be a statistically significant difference between the pretest to posttest scores of male and female participants?

The data collected from this study was analyzed through the following hypothesis, as stated in the null:

Hypothesis: There will not be a statistically significant difference between the pretest to posttest scores of male and female participants.

A One-way ANOVA was performed to determine if there were significant differences between male and female participants on each of the five subtests of phonemic awareness for both pretest and posttest (see table 8). Results indicate that for Sound Blending pretest there were no significant differences ($F = 0.070, p = 0.793$) for Phoneme Segmentation pretest there were no significant differences ($F = 0.088, p = 0.768$) for Strip Initial Consonant pretest there were no significant differences ($F = 0.304, p = 0.584$), for Substitute Initial Consonant there were no significant differences ($F = 0.083, p = 0.774$), and for Initial Consonant Same there were no significant differences ($F = 0.127, p = 0.723$). Results indicate that there were no significant differences between male and female participants on each of the five subtests of phonemic awareness for posttest, and the results were similar to that of the pretest scores. Therefore, because there were no significant differences between the pretest to posttest scores of male and female participants, the null hypothesis for research question 4 must be accepted.

The data obtained from this statistical test is supported by Hyde's (1988) meta-analysis that compared 165 studies on male and female verbal ability. The results of the meta-analysis suggested that there was not a significant difference between the verbal ability of males and females.

Table 8 Means, Standard Deviations, Standard Errors, F Values, Significance Levels, and Effect Sizes for Male and Female Participants

Test	Sex	N	Mean	Standard Deviation	Standard Error	F	Sig.	ES
SBPT	Male	21	4.0476	3.10606	.677	.070	0.8	0.10
	Female	21	3.8095	2.71328	.592			
	Total	42	3.9286	2.88303	.444			
PSPT	Male	21	1.6667	2.47656	.540	.088	0.8	-0.09
	Female	21	1.9048	2.71854	.593			
	Total	42	1.7857	2.57128	.396			
SICPT	Male	21	1.5714	3.34023	.728	.304	0.6	0.22
	Female	21	1.0952	2.11907	.462			
	Total	42	1.3333	2.77328	.427			
SUBICPT	Male	21	1.6190	2.83683	.619	.083	0.8	0.10
	Female	21	1.3810	2.49952	.545			
	Total	42	1.5000	2.64345	.407			
ICSPT	Male	21	4.9524	3.13278	.637	.127	0.7	-0.10
	Female	21	5.2857	2.92363	.683			
	Total	42	5.1190	2.99758	.462			
SBPOST	Male	21	4.8571	3.39538	.740	.243	0.6	0.16
	Female	21	4.3810	2.83683	.619			
	Total	42	4.6190	3.09959	.478			
PSPOST	Male	21	3.8095	3.57238	.779	2.002	0.2	0.49
	Female	21	2.3810	2.94068	.641			
	Total	42	3.0952	3.31154	.510			
SICPOST	Male	21	3.0000	4.09878	.894	.321	0.6	0.15
	Female	21	2.3810	2.87187	.626			
	Total	42	2.6905	3.50949	.541			

Table 8 Continued

Test	Sex	N	Mean	Standard Deviation	Standard Error	F	Sig.	ES
SUBICPOST	Male	21	3.2381	3.46273	.755	.670	0.4	0.25
	Female	21	2.3810	3.32380	.725			
	Total	42	2.8095	3.38027	.521			
ICSPOST	Male	21	6.2381	2.25621	.492	.145	0.7	-0.10
	Female	21	6.5238	2.60037	.567			
	Total	42	6.3810	2.40885	.371			
SBPT=Sound Blending Pretest PSPT=Phoneme Segmentation Pretest SICPT=Strip Initial Consonant Pretest SUBICPT=Substitute Initial Consonant Pretest ICSPT=Initial Consonant Same Pretest SBPOST=Sound Blending Posttest PSPOST=Phoneme Segmentation Posttest SICPOST=Strip Initial Consonant Posttest SUBICPOST=Substitute Initial Consonant Posttest ICSPOST=Initial Consonant Same Posttest ES=Effect Size								

Research Question: Will there be a statistically significant difference between the pretest to posttest scores of participants whose first language is English and participants whose first language is other than English?

The data collected from this study was analyzed through the following hypothesis, as stated in the null:

Hypothesis: There will not be a statistically significant difference between the scores of the participants whose first language is English and participants whose first language is other than English.

A One-way ANOVA was performed to determine if there were any significant differences between students whose first language was English and those students whose first language was other than English for pretest scores and posttest scores (see table 9). Results indicate that for Sound Blending pretest there were no significant differences ($F = 0.282, p = 0.599$), for Phoneme Segmentation pretest there were no significant differences ($F = 0.003, p = 0.959$), for Strip Initial Consonant pretest there were no significant differences ($F = 0.520, p = 0.475$), for Substitute Initial Consonant there were no significant differences ($F = 0.703, p = 0.407$) and for Initial Consonant Same there were no significant differences ($F = 0.560, p = 0.459$). Results indicate no significant differences between a participants' first language and their posttest scores, and results were similar to that of the pretest results. Therefore, because there were no significant differences between the pretest to posttest scores of participants whose first language is English and participants whose first language was not English, the null hypothesis for research question 5 must be accepted.

Quiroga et al. (2002) found that Spanish-speaking ESL students equally benefited from instruction in phonemic awareness. Lesaux and Siegal (2003) also found that ESL students benefited equally from instruction in phonemic awareness. The data obtained is particularly noteworthy as it sheds light on the effectiveness of instructing ESL students in a similar manner as native English language users.

Table 9 Means, Standard Deviations, Standard Errors, F Values, Significance Levels, and Effect Sizes for English Language Speakers and English as a Second Language Speakers

Test	Language	N	Mean	Standard Deviation	Standard Error	F	Sig.	ES
SBPT	English	26	4.1154	2.91653	.571	.282	0.60	-0.16
	Other	16	3.6250	2.89540	.723			
	Total	42	3.9286	2.88303	.444			
PSPT	English	26	1.7692	2.51885	.493	.003	0.96	0.01
	Other	16	1.8125	2.73785	.684			
	Total	42	1.7857	2.57128	.396			
SICPT	English	26	1.5769	3.04858	.597	.520	0.48	-0.21
	Other	16	.9375	2.29401	.573			
	Total	42	1.3333	2.77328	.427			
SUBICPT	English	26	1.7692	2.87482	.563	.703	0.41	-0.25
	Other	16	1.0625	2.23514	.558			
	Total	42	1.5000	2.64345	.407			
ICSPT	English	26	4.8462	2.70839	.531	.560	0.46	0.26
	Other	16	5.5625	3.46350	.865			
	Total	42	5.1190	2.99758	.462			
SBPOST	English	26	4.5385	3.27696	.642	.045	0.83	0.06
	Other	16	4.7500	2.88675	.721			
	Total	42	4.6190	3.09959	.478			
PSPOST	English	26	3.0769	3.22395	.632	.002	0.96	0.01
	Other	16	3.1250	3.55668	.889			
	Total	42	3.0952	3.31154	.510			
SICPOST	English	26	2.8846	3.54770	.695	.205	0.65	-0.14
	Other	16	2.3750	3.53789	.884			
	Total	42	2.6905	3.50949	.541			

Table 9 Continued

Test	Language	N	Mean	Standard Deviation	Standard Error	F	Sig.	ES
SUBICPOST	English	26	2.8462	3.37867	.662	.008	0.93	-.02
	Other	16	2.7500	3.49285	.873			
	Total	42	2.8095	3.38027	.521			
ICSPOST	English	26	6.1154	2.17857	.427	.826	0.37	0.32
	Other	16	6.8125	2.76209	.690			
	Total	42	6.3810	2.40885	.371			

SBPT=Sound Blending Pretest
 PSPT=Phoneme Segmentation Pretest
 SICPT=Strip Initial Consonant Pretest
 SUBICPT=Substitute Initial Consonant Pretest
 ICSPT=Initial Consonant Same Pretest
 SBPOST=Sound Blending Posttest
 PSPOST=Phoneme Segmentation Posttest
 SICPOST=Strip Initial Consonant Posttest
 SUBICPOST=Substitute Initial Consonant Posttest
 ICSPOST=Initial Consonant Same Posttest
 ES=Effect Size

Research Question: Will there be a statistically significant difference between a participants' birth quarter and their pretest to posttest scores?

The data collected from this study was analyzed through the following hypothesis, as stated in the null:

Hypothesis: There will not be a statistically significant difference between the participants' birth quarter and their pretest and posttest scores.

A One-way ANOVA was performed to determine if there were significant differences between participants' birth quarter and performance on each of the five subtests on both the pretest or the posttest (see table 10). Results indicate that for Sound Blending pretest results were not significant ($F = 1.815, p = 0.161$), for Phoneme Segmentation pretest results were not significant ($F = 0.448, p = 0.720$), for Strip Initial Consonant pretest the results were not significant ($F = 0.467, p = 0.720$), for Substitute Initial Consonant pretest results were not significant ($F = 0.216, p = 0.885$), and for Initial Consonant Same pretest the results were not significant ($F = 0.536, p = 0.660$). There were no significant differences between participants' birth quarter and their posttest scores, and the results were similar to that of the pretest results. Therefore, because there were no significant differences between a participants' birth quarter and their pretest to posttest scores, the null hypothesis for research question 6 must be accepted. To the author's knowledge, no research has attempted to incorporate a subject's birth quarter as a measure. Interestingly, students who were several months older than their cohorts did not outperform them as would be expected. The data obtained from this test, however, could be due to the relatively small sample size.

Table 10 Means, Standard Deviations, Standard Errors, F Values, and Significance**Levels for Participants' Birth Quarters and Scores**

Birth Quarter	Test	N	Mean	Standard Deviation	Standard Error	F	Sig.
First	SBPT	5	4.000	2.345	1.048	1.815	.161
Second		10	4.100	3.142	.993		
Third		12	5.250	3.333	.962		
Fourth		15	2.733	2.153	.556		
Total		42	3.928	2.883	.444		
First	PSPT	5	1.200	2.167	.969	.448	.720
Second		10	2.500	3.778	1.194		
Third		12	1.916	1.928	.556		
Fourth		15	1.400	2.292	.592		
Total		42	1.785	2.571	.396		
First	SICPT	5	1.400	1.516	.678	.467	.707
Second		10	1.200	3.119	.986		
Third		12	2.083	3.449	.995		
Fourth		15	.800	2.336	.603		
Total		42	1.333	2.773	.427		
First	SUBICPT	5	1.200	2.167	.969	.216	.885
Second		10	1.500	3.240	1.024		
Third		12	2.000	2.558	.738		
Fourth		15	1.200	2.624	.677		
Total		42	1.500	2.643	.407		
First	ICSPT	5	6.400	3.577	1.600	.536	.660
Second		10	4.400	3.272	1.034		
Third		12	5.416	3.315	.957		
Fourth		15	4.933	2.463	.635		
Total		42	5.119	2.997	.462		

Table 10 Continued

Birth Quarter	Test	N	Mean	Standard Deviation	Standard Error	F	Sig.
First	SBPOST	5	4.200	2.387	1.067	.498	.686
Second		10	5.200	2.859	.904		
Third		12	5.166	4.086	1.179		
Fourth		15	3.933	2.658	.686		
Total		42	4.619	3.099	.478		
First	PSPOST	5	4.400	3.361	1.503	1.606	.204
Second		10	3.500	3.240	1.024		
Third		12	4.000	3.411	.984		
Fourth		15	1.666	3.062	.790		
Total		42	3.095	3.311	.510		
First	SICPOST	5	3.200	4.086	1.827	1.510	.227
Second		10	2.400	3.238	1.024		
Third		12	4.250	4.002	1.155		
Fourth		15	1.466	2.850	.735		
Total		42	2.690	3.509	.541		
First	SUBICPOST	5	4.200	3.768	1.685	.587	.627
Second		10	3.000	3.858	1.220		
Third		12	3.083	3.175	.916		
Fourth		15	2.000	3.229	.833		
Total		42	2.809	3.380	.521		

Table 10 Continued

Birth Quarter	Test	N	Mean	Standard Deviation	Standard Error	F	Sig.
First	ICSPOST	5	7.000	3.082	1.378	.198	.897
Second		10	6.200	2.149	.679		
Third		12	6.083	2.353	.679		
Fourth		15	6.533	2.587	.668		
Total		42	6.381	2.408	.371		

SBPT=Sound Blending Pretest
 PSPT=Phoneme Segmentation Pretest
 SICPT=Strip Initial Consonant Pretest
 SUBICPT=Substitute Initial Consonant Pretest
 ICSPT=Initial Consonant Same Pretest
 SBPOST=Sound Blending Posttest
 PSPOST=Phoneme Segmentation Posttest
 SICPOST=Strip Initial Consonant Posttest
 SUBICPOST=Substitute Initial Consonant Posttest
 ICSPOST=Initial Consonant Same Posttest
 ES=Effect Size

C. Discussion

Phonemic awareness, a conscious ability to focus on and directly manipulate separate phonemes in spoken words (Chard & Dickson, 1999), has significant influence on whether a child will be a successful reader (Ehri, Nunes, Willows, Schuster, Yaghoub-Zadeh, & Shanahan, 2001; Mann, 1993; Mann & Liberman, 1984; Snider, 1997; Spector, 1992). Although phonemic awareness is not the only factor in becoming a successful reader, it is rudimentary for all students to have access to and

possession of this important facet. The National Reading Panel (2001), a panel composed of 14 researchers (from Canada, Brazil, and the United States), who are experts in phonemic awareness, alphabets, and literacy development, in a report submitted to the U. S. Congress, asserted that the development of an awareness of the various sounds of the English language system is integral in becoming a successful reader. The meta-analysis conducted by the National Reading Panel (2001) demonstrated, through large effect sizes (e.g., $d = 1.83$, $d = 2.62$, $d = 3.81$, $d = 3.92$) and through a large overall effect size (e.g., $d = .86$), based on 72 comparisons, that phonemic awareness instruction and interventions improved children's reading and spelling acquisition (Ehri et al., 2001).

In educational settings in Canada and abroad, teachers are faced with teaching students who come from diverse backgrounds. They are diverse with respect to their socio-economic status' as well as the various languages that they speak. Diversity of background creates challenges for teachers, especially for those coming from monolingual and monocultural communities. As teachers strategically plan, implement, and facilitate meaningful learning sequences for diverse learners they must bear in mind the contextual intricacies if effective and equitable classroom practice and instruction is to occur.

It is of great importance to carefully address issues centred on early literacy development. Importantly, there are a wide range of approaches to literacy development that teachers can and should use when implementing curriculum. A balanced approach to instruction is a more parsimonious approach in assisting learners

of the English language in becoming successful readers, talkers, listeners, and communicators. Balanced literacy instruction can include explicit instruction, implicit instruction, collaborative learning, as well as guided and scaffolded learning experiences. In any given classroom, teachers should adopt several approaches so as to cater to the multiple intelligences.

The phonemic awareness lessons during the course of the intervention were relatively short, usually about 20-25 minutes in length with varying degrees of difficulty. The duration of the study was over an eight-week period with approximately eight to ten hours of explicit instruction. Keeping phonemic awareness instruction time between five and 18 hours has been found to be more effective in achieving the desired end of increasing a students' level of phonemic awareness (e.g., Ehri et al., 2001).

The results of this quasi-experimental research study reveal some noteworthy information about phonemic awareness and senior kindergarten students who are multilingual, diverse, and who attend a compensatory education school. The results of this research study are based on a relatively small sample size ($n = 42$). This should be kept in mind when considering the strength of the findings. Results indicate that S. K. students who are explicitly taught phonemic awareness activities perform better at such tasks than those who are not. This held true for all subtests of phonemic awareness with the exception of the Strip Initial Consonant subtest. Overall, results indicate that the experimental group outperformed the control group on the posttest of phonemic awareness ($p < 0.001$). The experimental group experienced a 50% gain in correct

answers from their pretest score to their posttest score. The educational implication here, then, is that if phonemic awareness is a strong predictor of future success as a reader then it is of importance to explicitly teach these tasks to *all* students.

Cummins (1994) argues that minority students benefit when there is “a collaborative relationship between the school and parents” (p. 43). As a basic tenet, Cummins (1994) suggests that:

[t]he academic and linguistic growth of students is significantly increased when parents see themselves, and are seen by the school staff, as co-educators of their children along with the school. Schools should therefore actively seek to establish a collaborative relationship with minority parents that encourages them to participate with the school in promoting their children’s academic progress (p. 43).

Schools that have large percentages of minority students who come from families headed by only one parent (as was the case in this study) are at odds with the educational system (Cummins, 1994; Delpit, 1995). The main reason minority parents are at odds is because they cannot reinforce their child’s educational pursuits at home in a similar manner as do parents of English language speakers. Heath (1983) suggests that children learn literacy, in part, through interactions with parents and family. The implication is that if a student is living with both parents their language experiences at home will be richer than a child who is living with one parent. This can be extended, too, by considering that a single parent must exert more time and effort into running a home by themselves in comparison to a two-parent family who can share responsibility.

This would allow more time to talk, work on school work, or the like. Moreover, it is also likely that families who are headed by only one parent are not able to spend as much time with their child as do families headed by two parents. These two important contextual considerations assist educators and administrators in coming to understand possible disadvantages that single parent and/or minority parents may have. When a teacher understands the specific context that the student they are teaching is coming from they can better serve their educational needs. In this case, teachers could provide additional support to minority learners or learners who come from families who are headed by only one parent. The additional support could come in the form of providing additional classroom assistance with literacy learning or it could come in the form of collaborating with the parent on a regular basis. Cummins (2000) suggests that “[w]hen educators and culturally diverse parents become genuine partners in children’s education” their students and children, respectively, are more apt to succeed at school (p. 246).

The results of the ANOVA performed to determine if there were significant differences between the control and experimental group from overall pretest to overall posttest scores on the five subtests of phonemic awareness revealed significant differences. The overall mean for the experimental group increased from 12.1429 correct answers at pretest to 24.4762 correct answers at posttest (a 50% gain). The pretest standard deviation for the experimental group increased from 9.83507 to 13.20462. There was a very large effect size ($d = 3.62$) for the treatment group. An effect size of this magnitude suggests a great deal of practical significance associated

with the treatment that the experimental group received (i.e., the explicitly taught phonemic awareness lessons). The statistical significance of the experimental groups' overall pretest scores to overall posttest scores were found to be significant ($F = 58.509, p < 0.001$). These results suggest that when students are explicitly taught various aspects of phonemic awareness it can be expected that they will double their level of phonemic awareness.

These results are consistent with the findings of numerous other researchers who have conducted experimental or quasi-experimental research on phonemic awareness (e.g., Castle, Riach, & Nicholson, 1994; Cunningham, 1990; Mann, 1993). Although the experimental group significantly outperformed the control group on four of the five subtests of phonemic awareness, questions may be raised whether students' performance was a result of their ability to recall, without any critical examination, what has been taught. In other words, the way that the senior kindergarten students were explicitly taught during the eight week intervention could be construed as teaching to the test. Regardless of the way that the end results of improving the experimental group's scores of phonemic awareness it is simply important that their scores did improve. It is also important to keep in mind that this is simply one way to improve a students' level of phonemic awareness. In an early years' classroom such as a senior kindergarten classroom teachers must approach literacy instruction in a balanced way. That is, they must adopt and use a wide range of instructional strategies so as to ensure that students are afforded different ways to learn curriculum.

However this may be, if phonemic awareness has been found to be significantly correlated and casually related to future success as a reader then it does not matter which way this end is achieved. It is because the ability to hear and manipulate the individual sounds in spoken words is integral in the acquisition of reading and language learning that educators must afford learners opportunities to learn and hone these specific skills.

Of the five subtests of phonemic awareness the experimental group had the most significant gains with the Sound Blending (51% gain, pretest mean = 3.904, posttest mean 5.904, $p < 0.01$, $d = .90$), then Initial Consonant Same (35% gain, pretest mean = 4.761, posttest mean = 7.285, $p < 0.05$, $d = .68$), then Phoneme Segmentation (77% gain, pretest mean = 0.952, posttest mean 4.142, $p < 0.05$, $d = .80$), Substitute Initial Consonant (62% gain, pretest mean = 1.476, posttest mean 3.857, $p < 0.05$, $d = .66$). Surprisingly, students had the most difficulty with Strip Initial Consonant (57% gain, $p = 0.697$, $d = .14$) which is said to be one the easiest phonemic awareness tasks for students to complete because it is based on providing a rhyming word (Snider, 1997). The statistical significance, coupled with the moderate to large effect sizes noted on four of the five subtests of phonemic awareness, indicates that the implementation of the phonemic awareness instruction to the experimental group was effective statistically and educationally. This practical significance means the results are important for educators and practitioners of educational research. Results of this scope shed light on the importance of incorporating lessons such as the ones that were implemented during the course of this research study in addition to the various other

lessons that can be taught to enhance and promote a child's literacy development. Incidentally, after the pretest the group scores were compared to check that the scores were comparably the same on the five subtests of phonemic awareness. The experimental group and the comparison group performed comparatively the same on four of the five subtests of phonemic awareness, but on the phoneme segmentation subtest the control group outperformed the experimental group at pretest. Even though the comparison group had significantly higher scores at the onset, the experimental group managed to outperform the comparison group at posttest. This result demonstrates the overall effectiveness of phonemic awareness instruction.

It was interesting to note that there were no significant differences between participants whose first language was English and participants whose first language was not English. One would assume that a student to whom English is a second language would have achieved lower scores since it is likely that these students have parents whose first language is not English; therefore, these students may not be receiving the same sound instruction at home as students whose parents' first language is English. That is, it is likely that these ESL students may be using a different language at home than is spoken at school. Therefore, they come to school with minimum knowledge of English compared to classmates whose first language is English. Furthermore, it is possible that ESL parents cannot assist their children in coming to better understand the English language system. The results of this quasi-experimental research are consistent with the findings of Quiroga, Lemos-Britton, Mostafapour, Abbott, and Berninger (2002), Lesaux and Siegal (2003), and Geva,

Yaghoub-Zadeh, and Schuster (2000) who found that ESL students experienced equally significant gains and in some cases even outperformed students whose first language was English. The educational implication, then, is that all students can be taught and learn phonemic awareness regardless if their first language is other than English.

These results illustrate the importance of explicitly teaching *all* students in your classroom in the same way when teaching phonemic awareness, because those students whose first language is not English will likely benefit from the explicit instruction, too. It was hypothesized that students whose first language was not English would not have performed as well as students whose first language was English, because these students do not come to school with the same familial support as students whose first language is English.

Delpit (1995) argues that children from middle-class homes tend to do better and experience more success in institutions such as schools, because they are more accustomed to the school culture; that is, the atmosphere at school compliments the atmosphere at home. She argues that minority students often do not come to school “primed”, because their home environment and familial experiences are markedly different than mainstream students. This is why Delpit suggests that programs that teach basic skills explicitly, together with other valuable school information to minority students, can benefit them. Delpit, however, does not argue and advocate for a basic skills approach alone, but rather she suggests the importance of a balanced and holistic approach to literacy instruction at school. Like Delpit, Cummins (2000)

highlights the importance of embracing a balanced approach to literacy development, but he also suggests that “explicit phonics instruction is a prerequisite for reading development” (Cummins, 2000, p. 256). Delpit also suggests that minority parents want to ensure that their children are being afforded educational experiences that will allow them to experience success in larger society.

One of the most fundamental goals and outcomes of elementary education is to learn how to read and write. These skills allow people to effectively function in society by being able to communicate with others, understand what others are conveying, and to reflect and build on knowledge acquired and learned. This aspect of the study illustrates the need to explicitly teach basic skills that will enable students to experience success with reading and writing the English language.

Another interesting finding to note is that there were no significant gender differences. Effect sizes between the two groups were small (e.g., -.11 to .49). Male and female students achieved the same results on all five subtests of phonemic awareness. These results are reinforced by preliminary crosstabulations and Pearson Chi-Square tests used to test for inequality between the two groups and their composition at pretest. Although the experimental group and the control group did not have an exact number of male to female participants, the groups were found to be statistically similar. These results conflict with the widely held notion that females perform better on a wide range of literacy tasks than males do through to high school (Gambell & Hunter, 1999). The educational implication, then, is that, regardless of gender, students can be taught and learn phonemic awareness.

It was postulated that there would have been significant differences between a participants' birth quarter and their performance from pretest to posttest. Students starting senior kindergarten at a younger age performed as well as students who began senior kindergarten at a later age (e.g., 48.5 months vs. 58 months). The educational implication is that teachers should bear in mind the effectiveness of teaching senior kindergarten students in the same way regardless of whether they start kindergarten at an early or late age.

There are numerous ways to interpret the various results of this quasi-experimental research study. One important consideration to make, however, is that this research study had a relatively small sample size. When a study has a small sample it is difficult to generalize its findings to the population. Another limitation to this study was that the researcher was the recorder of the students' responses for both the pretest and the posttest of phonemic awareness (i.e., a data collector bias could have occurred). In addition, the researcher also provided the instruction of phonemic awareness during the course of the eight week intervention. It would have been a more solid design if the researcher could have had someone who had nothing to do with the study itself (a blind approach) to collect the pretest and posttest data and to implement the explicitly taught phonemic awareness lessons (e.g., the classroom teacher). The researcher was aware of these possible threats to the internal validity of the quasi-experimental research; however, because of the nature of the research (a Master's thesis) it was not possible to eliminate these practical considerations. The design of the study, however, was comparably strong in that it adopted a quasi-experimental design (Pretest-Posttest

Control Group Design). Although cause and effect cannot be implicitly established with research the quasi-experimental design offers researchers the opportunity to directly manipulate a variable or numerous variables so that inferences can be made to support initial postulations.

The research conducted within this study was similar to other research conducted in this area of early literacy development (e.g., Cunningham, 1990). Cunningham's (1990) study examined the effects of explicit versus implicit instruction of phonemic awareness. The research conducted in this study differed from Cunningham's research in that the group of students who participated in the research were diverse in their first language and the school they attended was designated as a compensatory education school.

This initial attempt to approach phonemic awareness instruction that overtly addresses important and rudimentary facets of early literacy development supports previous research in a fundamental area of educational research. The significant gains made by the experimental group on four of the five subtests of phonemic awareness illustrates the importance of incorporating phonemic awareness instruction in senior kindergarten classrooms. It is difficult to ascertain the optimal way to instruct learners on how to become a successful reader, but it seems that possession of phonemic awareness is a reasonably strong predictor of future success as a reader seeing how there is a plethora of empirical research on the effectiveness of incorporating phonemic awareness into early childhood programmes in addition to other important facets of language learning.

This research necessitates the need for further research to be conducted to bridge the work of this research as well as other research in this area. Some possible areas of research could include looking deeper into the viability of assisting students whose first language is not English in effectively learning how to better acquire phonemic awareness so that they, too, can become successful readers. Another possible area of research could be to look at which sounds students experienced the most success with and conversely which sounds students experienced the least success with. Another possible direction would be to follow ESL students and track their performance (e.g., longitudinal studies). It would also be beneficial to conduct similar research with larger samples so that the results would be stronger and could be generalized and compared to the population.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

The purpose of this research study was to determine the overall effectiveness of explicitly teaching and promoting phonemic awareness to senior kindergarten students at a compensatory education school. The results of this study suggest that it is possible to teach senior kindergarten students at a compensatory education school phonemic awareness. Regardless of gender, birth quarter, or first language, students who were explicitly taught phonemic awareness tasks outperformed students who were not taught these various phonemic awareness tasks. Specifically, students in the experimental group significantly outperformed the control group from pretest to posttest on four of five subtests of phonemic awareness, and overall the students who were in the experimental group outperformed students in the control group from pretest to posttest.

The results of this research study also suggest that students whose first language is not English equally benefit from being explicitly taught phonemic awareness activities. The results of this study suggest that whether you are male or female you can benefit from being explicitly taught phonemic awareness activities. Students who come to senior kindergarten at an early age also benefited from being explicitly taught the phonemic awareness tasks.

B. Implications for Educators

One rudimentary implication for educators is that it is of great importance to teach young students the fundamentals of the English language system so as to assist them in becoming successful readers. Although phonemic awareness training is only one aspect of becoming a successful reader and writer, it is a strong predictor of future success as a reader and should be taken very seriously. Educators need to view phonemic awareness instruction as something that will assist their students in becoming successful readers. Phonemic awareness activities are a lot of fun for students to participate in, and they do not require any great deal of preparation or expertise to successfully execute. Teachers do not need to become experts at understanding phonemic awareness research, as there is a wealth of classroom ideas and activities for teachers to use available in libraries and on the Internet. Promoting phonemic awareness in classrooms can be as fun and exciting for both teachers and students. Of course, it is important to understand that phonemic awareness is only one aspect in becoming literate in today's multi-literate world. Teachers need to utilize a variety of approaches to enhance their students' literacy development, so as to deliver a balanced literacy program to their students.

C. Recommendations

Based on the results of this research study, the following recommendations are suggested to educators, administrators, and practitioners of educational research to consider when planning educational learning sequences for elementary students as well as pre-service teachers. They are as follows:

1. That teachers of early years classes inform themselves about phonemic awareness in relation to early literacy development either by way of a workshop or a comprehensive Internet search;
2. That Boards of Education and Ministries of Education continue to support professional development opportunities in relation to phonemic awareness and other areas of early literacy development;
3. That more research be conducted on the effectiveness of explicitly teaching phonemic awareness to students in junior kindergarten, senior kindergarten, and grade one; and,
4. That Faculties of Education inform pre-service teachers about the effectiveness of explicitly teaching and promoting phonemic awareness to students in the early years of schooling.

The above recommendations would provide educators, administrators, and practitioners of educational research with useful information and knowledge about one important aspect in becoming a successful reader. It is useful and productive for researchers and educators to build teaching practice and our understanding of early literacy development upon empirically supported data and findings, so as to move education and our students in a positive and progressive direction. In this way, then, educational research assists parents, students, educators, administrators, and practitioners of educational research in synergistically working together in a strong and

collaborative partnership so that the learning sequences and education endeavours is maximized for *all*.

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APPENDIXES

APPENDIX A

PERMISSION TO USE THE TEST OF PHONEMIC AWARENESS

APPENDIX B
PRETEST INSTRUMENT

PHONEMIC AWARENESS TEST (REVISED) FOR BEGINNING READERS

DEVELOPED BY DR. VICKI SNIDER AND JANET KORN

This test is intended for teachers' and clinicians' use in determining appropriate instruction in phonemic awareness for beginning readers. It is intended for use by one individual and should not be distributed or mass-produced.

Note: The correction procedure should be used if the student misses any practice item.

During the test items, the correction procedure should only be used once if the student does not understand how to complete the items. Do not use the correction procedure for errors.

Sound Blending

Practice: I'm going to say a word the slow way, then you say it fast. Listen. If I say /m/-/a/-/n/, you say man!

Practice items:

- a. s-o
- b. b-i-g

Correction: //-/...the fast way is _____. Say//-/...the fast way.

*Test items

- 1. f-i-sh

2. h-ou-se
3. p-i-g
4. s-u-n
5. m-oo-n
6. s-oa-p
7. j-ee-p
8. b-l-a-ck
9. e-gg
10. a-m

Scoring and interpretation: Students at the end of kindergarten should be expected to catch on quickly and get most of these items correct. This is one of the easiest phonemic awareness tasks. Students who cannot perform this task should be tested for word awareness and syllable awareness. They should be considered at risk for future reading and spelling disabilities and explicit instruction should be provided to develop phonemic awareness.

Phoneme Segmentation

Practice: Now I'm going to make it harder. This time, I'm going to say a word, and you say it the slow way. Make sure you say each sound in order. For example, if I say "man", you say /m/-/a/-/n/.

Practice items:

a. lap (l-a-p)

b. go (g-o)

Correction: The sounds in “_____” are //, //, //. Say the sounds in “_____.”

Test: Say the sound in _____.

1. she (sh-e)

2. red (r-e-d)

3. in (i-n)

4. day (d-ay)

5. ice (i-s)

6. top (t-o-p)

7. me (m-e)

8. fat (f-a-t)

9. slip (s-l-i-p)

10. wave (w-a-v)

Scoring and interpretation: Students may stop between each sound or blend them, but each sound must be separate and distinct to be correct. For example, t-op is incorrect; sl-ip is also incorrect. Students at the end of kindergarten can be expected to get about half of these correct, especially those with only two sounds.

Strip Initial Consonant

Practice: Listen to the word “task”. If I take away the /t/ sound, “ask” is left.

What word is left? Let’s try some more.

Practice words:

a. hill

b. man

Correction: Listen to the word “_____.” If I take away the // sound, “_____” is left.

What word is left?

Test: Listen to the word _____. If you take away the // sound, what word is left?

1. pink

2. told

3. ball

4. nice

5. win

6. bus

7. pitch

8. car

9. hit

10. pout

Scoring and interpretation: Many students at the end of kindergarten will experience great difficulty with this task. They may not understand what to do even after completing the practice items. While a score of 0 on this subtest does not necessarily

indicate future reading disabilities, it does suggest the need for explicit instruction to increase students' awareness of sounds in words.

Substitute Initial Consonant

Practice: If I say the word “go” and then change the first sound to /n/, the new word will be “no.” Let’s try some more.

Practice items:

- a. cat /s/
- b. bell /t/

Correction procedure: I can make a new word from _____ by changing the first sound. I could change the first sound to // and the new word would be _____.

Change the first sound in _____ to // and say the new word.

Test: Make a new word from _____ by changing the first sound to //.

1. mop /t/
2. cake /m/
3. pet /g/
4. jeep /k/
5. big /f/
6. bar /j/
7. hope /r/
8. cut /n/

9. seal /d/

10. pack /s/

Scoring and interpretation: This is essentially a rhyming task; and as such is one of the easiest of the phoneme manipulation tasks. An average score at the end of kindergarten is about 50%.

Initial Consonant Same

Practice: Say the word “Sam” aloud and listen to the beginning sound. If I say the word “Sam” and then sun, pig, balloon; which word has the same beginning sound as Sam?

Practice item: If I say the word “cat” and then fish, moon, cow; which word has the same beginning sound as cat?

Test: Listen, _____, _____, _____, _____. Which word has the same beginning sound as _____?

1. milk—rabbit, apple, mushroom
2. pear—milk, bird, pig
3. fan—key, fork, hammer
4. bone—bike, clock, net
5. soap—seal, butterfly, elephant
6. tent—glasses, telephone, pencil
7. leg—flag, snowman, lamp

8. duck—dinosaur, nails, lion

9. nest—leaf, net, cup

10. key—football, kite, flower

Scoring and interpretation: This task is quite familiar to kindergarten students and should be relatively easy. Students who have completed kindergarten and who have difficulty with this task should be considered at-risk for future reading and spelling difficulties.

Student Data Sheet

Name _____

Total Score _____

Date _____

Examiner _____

Record correct responses with a + and incorrect responses with a 0.

Sound Blending

Phoneme Segmentation

Strip Initial

Consonant

1. _____

1. _____

1. _____

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Substitute	Initial
Initial Consonant	Consonant Same
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____
7. _____	7. _____
8. _____	8. _____
9. _____	9. _____
10. _____	10. _____

APPENDIX C
POSTTEST INSTRUMENT

PHONEMIC AWARENESS TEST (REVISED) FOR BEGINNING READERS

DEVELOPED BY DR. VICKI SNIDER AND JANET KORN

ADAPTED* BY DARIN DUANE CARROLL

This test is intended for teachers' and clinicians' use in determining appropriate instruction in phonemic awareness for beginning readers. It is intended for use by one individual and should not be distributed or mass-produced.

Note: The correction procedure should be used if the student misses any practice item. During the test items, the correction procedure should only be used once if the student does not understand how to complete the items. Do not use the correction procedure for errors.

Sound Blending

Practice: **I'm going to say a word the slow way, then you say it fast. Listen. If I say /m/-/a/-/n/, you say man!**

Practice items:

a. n-o

b. p-i-g

Correction: // -//...**the fast way is _____**. Say// -//...**the fast way**.

*Test items

1. d-i-sh
2. m-ou-se
3. f-i-g
4. b-u-n
5. l-oo-n
6. c-o-pe
7. p-ee-p
8. s-l-a-ck
9. b-e-g
10. a-t

Scoring and interpretation: Students at the end of kindergarten should be expected to catch on quickly and get most of these items correct. This is one of the easiest phonemic awareness tasks. Students who cannot perform this task should be tested for word awareness and syllable awareness. They should be considered at risk for future reading and spelling disabilities and explicit instruction should be provided to develop phonemic awareness.

Phoneme Segmentation

Practice: Now I'm going to make it harder. This time, I'm going to say a word, and you say it the slow way. Make sure you say each sound in order. For example, if I say "man", you say /m/-/a/-/n/.

Practice items:

- a. sap (s-a-p)
- b. no (n-o)

Correction: **The sounds in “_____” are //, //, //.** Say the sounds in “_____.”

Test: **Say the sound in_____.**

- 1. he (h-e)
- 2. bed (b-e-d)
- 3. it (i-t)
- 4. say (s-ay)
- 5. dice (d-i-s)
- 6. hop (h-o-p)
- 7. met (m-e-t)
- 8. rat (r-a-t)
- 9. flip (f-l-i-p)
- 10. save (s-a-v)

Scoring and interpretation: Students may stop between each sound or blend them, but each sound must be separate and distinct to be correct. For example, h-op is incorrect; fl-ip is also incorrect. Students at the end of kindergarten can be expected to get about half of these correct, especially those with only two sounds.

Strip Initial Consonant

Practice: Listen to the word “task”. If I take away the /t/ sound, “ask” is left.

What word is left? Let’s try some more.

Practice words:

- a. mill
- b. can

Correction: Listen to the word “_____.” If I take away the // sound, “_____” is left.

What word is left?

Test: Listen to the word _____. If you take away the // sound, what word is left?

- 1. rink
- 2. bold
- 3. call
- 4. mice
- 5. kin
- 6. puss
- 7. ditch
- 8. jar
- 9. bit
- 10. blink

Scoring and interpretation: Many students at the end of kindergarten will experience great difficulty with this task. They may not understand what to do even after completing the practice items. While a score of 0 on this subtest does not necessarily

indicate future reading disabilities, it does suggest the need for explicit instruction to increase students' awareness of sounds in words.

Substitute Initial Consonant

Practice: If I say the word “go” and then change the first sound to /n/, the new word will be “no.” Let’s try some more.

Practice items:

- a. cat /b/
- b. bell /y/

Correction procedure: I can make a new word from _____ by changing the first sound. I could change the first sound to // and the new word would be _____.

Change the first sound in _____ to // and say the new word.

Test: Make a new word from _____ by changing the first sound to //.

- 1. mop /h/
- 2. cake /l/
- 3. pet /s/
- 4. jeep /l/
- 5. big /g/
- 6. bar /c/
- 7. hope /n/
- 8. cut /r/

9. seal /h/

10. pack /r/

Scoring and interpretation: This is essentially a rhyming task; and as such is one of the easiest of the phoneme manipulation tasks. An average score at the end of kindergarten is about 50%.

Initial Consonant Same

Practice: Say the word “Sam” aloud and listen to the beginning sound. If I say the word “Sam” and then sun, pig, balloon; which word has the same beginning sound as Sam?

Practice item: If I say the word “cat” and then fish, moon, cow; which word has the same beginning sound as cat?

Test: Listen, _____, _____, _____, _____. Which word has the same beginning sound as _____?

1. silk—rabbit, apple, sad
2. dear—milk, den, pig
3. wand—wish, fork, hammer
4. lone—bike, clock, let
5. pen—seal, pinwheel, elephant
6. bent—glasses, telephone, ball
7. sag—flag, snowman, pimple

8. tuck—tiny, nails, suck
9. west—leaf, went, cup
10. key—football, kitty, flower

Scoring and interpretation: This task is quite familiar to kindergarten students and should be relatively easy. Students who have completed kindergarten and who have difficulty with this task should be considered at-risk for future reading and spelling difficulties.

* The above testing instrument is the intellectual property of Dr. Vicki Snider and Janet Korn. I have adapted the testing instrument so that my posttest would be slightly different than the pretest. The changes are ever-so-slight and in most instances only one letter has been changed (e.g., nest to west).

Student Data Sheet

Name _____

Total Score _____

Date _____

Examiner _____

Record correct responses with a + and incorrect responses with a 0.

Sound Blending**Phoneme Segmentation****Strip Initial****Consonant**

1. _____

1. _____

1. _____

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Substitute	Initial
Initial Consonant	Consonant Same
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____
7. _____	7. _____
8. _____	8. _____
9. _____	9. _____
10. _____	10. _____

APPENDIX D

EXPLICITLY TAUGHT PHONEMIC AWARENESS LESSONS

Lesson # 1

Sound Blending

Practice: I'm going to say a word the slow way, then you have to say it fast. Listen. If

I say /m/a/n/, you say man!

Practice items:

a. i-t

b. b-i-t

c-a-t

d-o-g

b-a-t

s-a-t

s-t-i-ck

w-i-n

t-e-n

A-l-e-x

t-oo

s-k-y

b-oa-t

c-a-r

t-r-u-ck

g-a-s

s-m-a-ll

J-o-sh

j-a-r

c-l-o-ck

p-o-p

r-a-bb-i-t

n-i-ce

b-oy

b-u-s

m-o-p

c-u-p

Lesson # 2

Sound Blending

Practice: I'm going to say a word the slow way, then you have to say it fast. Listen. If

I say /m/a/n/, you say man!

Practice items:

a. i-t

b. b-i-t

a-t

j-a-m

c-a-ke

m-o-m

d-a-d

e-gg

p-i-ll-ow

v-i-o-l-i-n

c-ou-ch

p-ou-ch

gr-ou-ch

ch-i-k-a

b-oo-m

c-o-c-o-n-u-t

t-r-ee

m-ou-se

J-a-c-o-b

J-ai-d-ah

t-o-p

f-oo-d

k-ey

b-u-g

b-a-g

l-ou-d

H-a-d-i

s-n-a-ke

v-a-n

t-r-u-ck

Lesson # 3

Sound Blending

Practice: I'm going to say a word the slow way, then you have to say it fast. Listen. If

I say /m/a/n/, you say man!

Practice items:

a. i-t

b. b-i-t

p-a-t

h-a-t

b-a-ke

b-i-te

n-o-se

gr-ou-se

f-a-t

r-u-g

d-u-g

h-u-g

f-u-n

s-ee

w-e-t

s-e-t

n-e-t

f-i-ve

d-i-zz-y

f-i-zz

h-u-t

c-u-t

r-a-n

b-l-ue

Lesson # 4

Rhyme

Seuss, Dr. There's a Wocket in My Pocket.

Lesson # 5

Phoneme Segmentation

Practice: Now I'm going to make it harder. This time, I'm going to say a word, and you have to say it the slow way. Make sure that you say each sound in order. For example, if I say "man", you say /m/-/a/-/n/.

Practice items:

a. get

b. jar

jam

mom

dad

van

top

cat

bat

can

boy

cup

gas

sat

mop

too

hat

hit

sit

lamp

ham

Sam

Lesson # 6

Phoneme Segmentation

Practice: Now I'm going to make it harder. This time, I'm going to say a word, and you have to say it the slow way. Make sure that you say each sound in order. For example, if I say "man", you say /m/-/a/-/n/.

Practice items:

a. get

b. jar

bat

hat

dog

cat

mit

sat

rat

run

nut

cut

pit

ten

fish

big

fig

sag

bag

leg

bet

net

Lesson # 7

Phoneme Segmentation

Practice: Now I'm going to make it harder. This time, I'm going to say a word, and you have to say it the slow way. Make sure that you say each sound in order. For example, if I say "man", you say /m/-/a/-/n/.

Practice items:

a. get

b. jar

put

hot

cot

dot

not

bun

nun

sun

fun

pen

pin

can

stick

so

ran

fan

Lesson # 8

Rhyme

Seuss, Dr. And to Think I Saw it on Mulberry Street.

Lesson # 9

Strip Initial Consonant

Listen to the word “task”. If I take away the /t/ sound, “ask” is left. What word is left?

Let’s try some more!

Practice items:

a. hill

b. pants

fill

sold

call

ball

sat

pat

stop

bus

page

slip

sand

wall

snail

Lesson # 10

Strip Initial Consonant

Listen to the word “task”. If I take away the /t/ sound, “ask” is left. What word is left?

Let’s try some more!

Practice items:

a. hill

b. pants

spin

spat

scan

sled

clock

small

stop

can’t

pits

slow

wall

slight

plight

Lesson # 11

Strip Initial Consonant

✓ Listen to the word “task”. If I take away the /t/ sound, “ask” is left. What word is left?

Let’s try some more!

Practice items:

a. hill

b. pants

blow

grow

till

couch

open

bread

wall

hold

dart

hat

small

swill

brook

clock

black

Lesson # 12

Substitute Initial Consonant

Practice: If I say the word “go” and then change the first sound to /n/, the new word will be “no.” Let’s try some more.

Practice items:

a. cat /s/

b. bell /t/

sing /r/

can /r/

dug /h/

run /b/

sun /b/

sick /l/

pile /m/

bar /c/

night /l/

took /b/

look /b/

book /h/

might /f/

Lesson # 13

Substitute Initial Consonant

Practice: If I say the word “go” and then change the first sound to /n/, the new word will be “no.” Let’s try some more.

Practice items:

a. cat /s/

b. bell /t/

rent /b/

fun /b/

hut /c/

dent /s/

rat /c/

fat /b/

pop /h/

pit /h/

win /p/

den /p/

hog /j/

dress /p/

pink /r/

tall /b/

call /m/

Lesson # 14

Substitute Initial Consonant

Practice: If I say the word “go” and then change the first sound to /n/, the new word will be “no.” Let’s try some more.

Practice items:

a. cat /s/

b. bell /t/

ran /f/

bat /r/

hut /c/

win /p/

pit /s/

ten /p/

lick /s/

yell /b/

can /m/

well /b/

hall /b/

dish /f/

hen /p/

Lesson # 15

Initial Consonant Same

Practice item (1): Say the word “Sam” (as a group) aloud and listen to the beginning sound. If I say the word “Sam” and then sun, pig, balloon; which word has the same beginning sound as Sam?

Practice item (2): Say the word “cat” (as a group) aloud and listen to the beginning sound. If I say the word “cat” and then fish, moon, cow; which word has the same beginning sound as cat?

pencil—dog, penny, cat

house—poppy, milk, hat

run—love, rat, fish

dog—pop, diary, ten

apple—load, hit, ashes

will—your, went, dance

can—ill, could, dance

map—milk, giggle, lap

happy—pop, end, healthy

yell—bell, yellow, hop

jolly—jell-o, fun, tent

kick—love, out, kelp

tilt—tell, hold, gas

not—melt, none, bat

pillow—pen, me, sad

Lesson # 16

Initial Consonant Same

Practice item (1): Say the word “Sam” (as a group) aloud and listen to the beginning sound. If I say the word “Sam” and then sun, pig, balloon; which word has the same beginning sound as Sam?

Practice item (2): Say the word “cat” (as a group) aloud and listen to the beginning sound. If I say the word “cat” and then fish, moon, cow; which word has the same beginning sound as cat?

orange—tell, oracle, help

ball—belt, gas, dad

fun—den, not, fish

mom—milk, honey, run

gas—cot, pass, giggle

love—has, lick, sister

done—pass, get, do

cat—pants, ants, cast

point—pillow, does, rink

rink—out, in, rang

apple—is, fruit, ants

get—your, top, gone

pit—man, won, penny

question—quick, sack, silk

zap—had, fifty, zag

Lesson # 17

Initial Consonant Same

Practice item (1): Say the word “Sam” (as a group) aloud and listen to the beginning sound. If I say the word “Sam” and then sun, pig, balloon; which word has the same beginning sound as Sam?

Practice item (2): Say the word “cat” (as a group) aloud and listen to the beginning sound. If I say the word “cat” and then fish, moon, cow; which word has the same beginning sound as cat?

small—ball, feather, sent

dog—pop, like, dear

gone—love, gas, four

catch—hat, dance, call

risk—ill, rat, went

quack—quill, lend, smack

verb—vague, hut, jam

fan—men, true, fall

dill—hill, guy, day

four—just, fence, door

tin—house, all, tent

swell—yell, sold, bread

old—truth, hello, open

zebra—you, yes, zen

nut—mut, hut, net

Lesson # 18

Rhyme

Seuss, Dr. Green Eggs and Ham.

Lesson # 19

Rhyme

Seuss, Dr. The Cat in The Hat.

VITA AUCTORIS

Darin Duaine Carroll is a graduate of the University of Windsor, Windsor, Ontario, Canada. He earned his Bachelor of Arts (General English) and his Bachelor of Arts (Honours English Literature and Language) in 2001 and 2002, respectively. He also earned a post-graduate degree in education (Bachelor of Teaching—Primary and Junior Divisions graduating with Distinction) from the University of Western Sydney, Sydney, New South Wales, Australia in 2003.

Mr. Carroll has been employed as a graduate teaching assistant in the Faculty of Education at the University of Windsor. Currently, Mr. Carroll is employed as a permanent teacher contracted by the Greater Essex County District School Board. His present teaching assignment is teaching grade three at Roseland Public School. Soon after the Master of Education degree is conferred from the University of Windsor, Mr. Carroll's educational plan is to continue with his studies in order to earn a doctoral degree in educational studies so that he can fulfil his goal and aspiration of being able to research for and lecture in a Faculty of Education.

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