Developmentally Appropriate Practices in Preschool Emergent Literacy Instruction: Precursors to Reading Acquisition

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Developmentally Appropriate Practices

in Preschool Emergent Literacy Instruction:

Precursors to Reading Acquisition

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_____, Faculty Advisor

ABSTRACT

In an effort to improve academic readiness skills for students entering kindergarten in the Wapato School District (WSD), the district preschool program implemented Open Court reading curriculum. The researcher collected and analyzed letter knowledge data from two cohorts of preschool students, one receiving instruction from Open Court and the other receiving teacher designed thematic unit instruction. The results showed that Open Court reading curriculum had no significant effect on student learning of alphabetic principle. This concurred with research that admonished teachers to maintain a balance of direct instruction and play-based learning in early literacy programs.

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Introduction

Background for the Project

During the Washington Learns Education Summit, Bill Gates addressed the need for high quality preschool programs. Gates stated, "In 2004, kindergarten teachers in Washington reported that fewer than half of their students came to kindergarten ready to learn" (2006). Gates discussed the importance of setting high standards at every level of education, especially early learning, "When underprivileged children show up for the first day of school, they're often already behind—and when kids start behind, they usually stay behind (Gates, 2006).

Gates continued his appeal for improved early childhood programs by addressing the need "to set standards for the early learning field; find high-quality, affordable solutions; demonstrate approaches that work; . . . develop curricula to guide child-care providers; . . .[and] expand pre-school options for low-income kids" (2006). Gates concluded, "High standards, even at the earliest stages, are indispensable if we're going to ensure that students show up at kindergarten—and every stage thereafter—ready to learn" (2006).

Statement of the Problem

Many students in the Wapato School District (WSD) entered kindergarten with varied, limited academic readiness skills. Many were unprepared to begin

the process of acquiring early literacy skills. Young students, who began their academic careers behind, tended to remain below benchmark throughout school. Open Court reading curriculum needed to be adopted to improve kindergarten entry literacy readiness.

Purpose of the Project

Open Court reading curriculum was implemented in the district preschool program as part of an Early Reading First grant. Teachers were frustrated with the cumbersome curriculum and wondered what the effect had been on student performance. Had the addition of this new curriculum improved student achievement, or had it made no significant difference? Improved student achievement needed to be determined in order to establish whether or not Open Court reading curriculum improved early literacy skills. The purpose of this project was to determine if Open Court reading curriculum improved early literacy skills.

Delimitations

Wapato School District (WSD) was a small rural district located in the Lower Yakima Valley in Central Washington. The WSD consisted of a large minority population (65% Hispanic and 25% Native American) with low socio-economic status (89% free or reduced lunch) (Office of the Superintendent of Public Instruction, 2006). Students enrolled in the WSD general education preschool program mirrored the demographic population of the WSD. In 2004-

2005, preschool students were taught using teacher designed thematic units with literacy activities embedded in quality literature, songs, games, and free play. In 2006-2007, students were taught using Open Court reading curriculum in addition to teacher designed thematic units. Teacher designed alphabetic assessments were administered to both groups of students in September and May. Data from 2004-2005 were compared with data from 2006-2007.

Assumptions

The assumption was made that all students had appropriate nutrition and access to health care. The curriculum was developmentally appropriate for young students and the teachers had the necessary training to implement the curriculum. The preschool environment was warm, safe, and inviting. Likewise, all students entered preschool ready, willing, capable, and eager to learn and that they all had appropriate family support at home to foster early learning.

The assumption was made that students entered preschool with little to no alphabet knowledge. Students who displayed a possible understanding of alphabetic principle were given initial assessments in September and found to have limited prior alphabet knowledge, therefore it was determined that all students began the year's instruction with little to no alphabet knowledge.

Of importance to note, 2004-2005 students were instructed by a first year teacher with only a Bachelor's Degree while 2006-2007 students were instructed by a third year teacher working toward a Master's Degree. Another noteworthy

factor was that students in 2004-2005 were aged three and four when they entered the program in September 2004 and students in 2006-2007 were all at least four years of age at preschool entry in September 2006.

Hypothesis or Research Question

Letter recognition and letter sound correspondence were crucial to the acquisition of reading. Preschool student's letter / sound recognition improved as a result of using Open Court reading curriculum.

Null Hypothesis

Open Court reading curriculum had no significant effect on preschool student's letter / sound recognition skills. Significance was determined for $p \geq 0.05$, 0.01, and 0.001.

Significance of the Project

This project was significant because a disproportionately large number of students in the WSD consistently entered kindergarten lacking the necessary preliteracy skills for academic success. The acquisition of reading preceded the ability to comprehend later academic content. Research revealed that students, who began school with skill deficits, remained behind for the entirety of their academic careers. Quality preschool interventions proved to be a solution to this dilemma.

Procedure

For the purpose of this study, a convenience sampling, the students enrolled in two classes, morning and afternoon sessions, of the WSD general education preschool program were used. The students from both years of the study were similar in that they were all students from the Wapato area whose parents had chosen the school district's preschool program. An initial screening, a teacher modified version of Acuscreen, as well as assessments for other components of early development, were administered to both cohorts of students prior to enrollment to determine entry level skills. The assumption was made that all students entered preschool with little to no alphabet knowledge; however, a wide range of other academic readiness skills was observed for both groups of students.

In 2004-2005, preschool students, the control group, were taught using teacher designed thematic units with literacy activities embedded in quality literature, songs, games, and free play. No formal curriculum was used. In 2006-2007, the experimental group of students was taught using Open Court reading curriculum in addition to teacher designed thematic units. Teacher designed alphabetic assessments for letter recognition, letter sound relationships, and beginning-sound word association were administered to both groups of students in September and May. Data from 2004-2005 was compared with data from 2006-

2007, using a t test to determine if the addition of Open Court reading curriculum improved students letter / sound recognition skills.

Acronyms

IQ. Intelligence Quotient

IRA. International Reading Association

NAEYC. National Association for the Education of Young Children

NCLB. No Child Left Behind

NRP. National Reading Panel

WSD. Wapato School District

CHAPTER 2

Review of Selected Literature

Introduction

Because many students in the Wapato School District (WSD) entered kindergarten unprepared for early literacy training, it was necessary to improve instruction at the preschool level. The author discussed the importance of preschool in relation to emergent literacy skills and future outcomes. Central to improvement of academic skills, the author delved into the process of reading acquisition, focusing on two crucial components, phonemic awareness and alphabetic principle. The author examined critical issues that influenced preschool instruction, including the age-old phonics versus whole language debate and developmentally appropriate practices for early learning.

Benefits of Preschool

Over the course of 10 years, the Gates Foundation researched many social intervention programs designed to improve the outcomes of at-risk children including: quality early learning, out of school activities for adolescents, quality health care, economic development, and family support services (2005, p. 9). Researchers discovered that preventing problems rather than intervening later had the highest potential for impact, was more effective, and was less costly (Gates, et al., 2005, p. 9). The Gates Foundation acknowledged that, "Children who are exposed at a young age to reading and language development vastly increase their

social and mental development, have higher self-esteem, perform better in schools, have decreased incidence of early pregnancy, and use less alcohol and fewer drugs" (2005, p. 9). Researchers concluded that preschool attendance reduced crime and delinquency, increased educational achievement, reduced grade repetition and special education referrals, increased employment and earnings, created less welfare dependency, and increased high school completion and college attendance (Gates, et al., 2005, pp. 10 & 17).

Research indicated, "a child's success in kindergarten is a strong predictor of future school success" (Nelson, 2005, p. 2). Evidence suggested that achievement patterns developed early and once established, remained consistent after the first few years in school (Lunenburg, 2000, p. 2; McWayne, Fantuzzo, & McDermott, 2004, p. 2). However, "over the past two decades, approximately one-third of children entering kindergarten are consistently judged by their kindergarten teacher as not ready for typical kindergarten-level work" (Ramey & Ramey, 2004, p. 2). "High risk children, without a solid pre-K educational foundation are likely to start kindergarten approximately 2 (or more) years behind their agemates…" (Ramey & Ramey, 2004, p. 5). On the contrary, the National Association for the Education of Young Children (NAEYC) stated that all children were ready and capable of learning. The NAEYC therefore, took the position that it was the child's environment rather than innate abilities that indicated kindergarten readiness (Nelson, 2005). The International Reading

Association (IRA) and the NAEYC concluded, "Failing to give children literacy experience until they are school age can severely limit the reading and writing levels they ultimately attain" (Statement of Issues, 1998, p. 3).

Typical environmental risk factors that contributed to a lack of school readiness included: poverty, single or no parent, under or unemployed parent(s), parent(s) with disabilities, under-educated parents, and English language learners. Research acknowledged a correlation between children with one or more risk factors and one or more detrimental family conditions including: increased incidences of abuse and neglect, poor parent-child bonding, low care-giver knowledge of child development, poor parental mental health, language delays, socially isolated families, stressful (chaotic) living situations, and health and nutritional deficits (Barnett, 1992; Gates, et al., 2005; Nelson, 2005; Ramey & Ramey, 2004; Whitehurst, Epstein, Angell, & Payne, 1994).

In an effort to understand the correlation of risk factors and academic success, many researchers scrutinized aspects of at-risk households. Nelson reviewed a study on the parenting styles of African American single mothers. Nelson found high levels of aggravation but also high levels of nurturing. Nelson's research revealed that when low levels of aggravation were present, high levels of nurturing offset low cognitive stimulation; however, when high levels of aggravation accompanied high levels of nurturing, the nurturing failed to compensate for low cognitive stimulation. Nelson concluded that successful

preschool intervention programs must also include family support for life's stressors (Nelson, 2005, p. 3).

Slaby, Loucks, and Stelwagon investigated the quality of language interactions for various groups of children, including professional, working class, and impoverished families. Slaby, Loucks, and Stelwagon's study revealed marked differences in the minutes of interaction between parents and children, exposure to words during a period of one year, and the number and type of words spoken to the child. While the number of interactions between parents and children were similar between all the groups, the duration of interactions varied greatly. Professional families spent nearly twice as long talking to their children as impoverished families. Over the course of a year, children in professional families heard an average of eleven million words, while children in working class families heard approximately six million words, and children in impoverished families heard about three million words. That was a difference of 40 million more words prior to school entry for children of professionals compared to impoverished children (Slaby, Loucks, & Stelwagon, 2005, p. 3).

The Gates Foundation referred to many sources of brain research and development in young children; "brain development is most intense from birth to 3 years of age. . . . Synapses that get used stay in the brain; if synapses are unused, they begin to be eliminated by late childhood" (2005, p. 8). The detrimental family situations found in at-risk children's lives were not conducive

to stimulated brain development. Without preschool intervention, at-risk students stood little chance of achieving academic success.

Barnett (1992) discussed the long-term benefits of preschool attendance. Previous studies had well established that children raised in poverty had poor test scores and low school performance. Research on the long-term effects of preschool began in the 1960's in an effort to determine the efficiency of extra-familial investment in low-income children. Barnett analyzed multiple studies and discovered that quality early childhood education improved achievement on test scores, school progress, and educational attainment (1992, p. 281). Barnett discussed how early research focused on gains in Intelligence Quotient (IQ) with discouraging results. Although studies acknowledged initial IQ gains, the results were not sustained passed elementary school (Barnett, 1992, p. 283). Researchers shifted their focus to other aspects of school success including: grade retention, special education referrals, and achievement test scores, discovering significant improvements in all areas (Barnett, 1992, p. 292).

Perhaps the most significant research in early childhood education, the Perry Preschool Model, followed a 40-year long longitudinal study regarding the long-term effects of preschool attendance. The Perry Preschool Project began in 1962 in Ypsilanti, Michigan, in an effort to improve the school success of low-income black children who traditionally did not fare well in the school system. One hundred twenty three children, ages three and four, were assigned to two

groups; 58 received interventions, while 65 received no intervention. The experimental group attended a two-and-a-half hour preschool group, five days a week from October to May. Educators visited homes weekly to provide parent and family support for student's education. The control group received no formal preschool experiences. Students were tested and monitored throughout school and interviewed at age 19 (Barnett, 1992, pp. 293-297). Students in the experimental group had an initial increase in IQ, which decreased by kindergarten. There were significant increases in: student achievement scores, high school graduation rates (67% compared to 49%), and post-secondary education attendance (38% compared to 21%). Significant decreases were found in: special education referrals (16% as opposed to 28%), receipt of welfare at age 19 (18% as opposed to 32%), arrest rates at age 19 (31% as opposed to 51%), average number of arrests at age 19 (1.3 compared to 2.3), arrested 5 or more times by age 40 (36% as opposed to 55%), and the average number of teen pregnancies (0.7 compared to 1.2). Future employment and earnings were also affected by preschool attendance: employment at age 19 (50% compared to 32%), median income at 19 ($3,860 versus $1,490), self supporting by age 19 (45% as opposed to 20%), and those earning $20,000 a year by age 40 (60% compared to 40%) (Barnett, 1992, p. 298; Gates et al., 2005, p. 19).

Barnett (1992) discussed the financial benefits of preschool interventions. Barnett conducted a benefit-cost analysis based on the findings of the Perry

Preschool Project. The net benefits of preschool were evaluated in five areas including: the value of childcare, increased earnings, and reduced costs of public education, welfare payments, and crime. Barnett (1991) calculated a total net benefit of $13,124 to society, $2,583 to participants, and $10,541 to taxpayers (pp. 300-301). In a similar study, Bracy's analysis of cost benefits allowed a conclusion that preschool programs saved $7.00 for every $1.00 spent (Abadiano & Turner, 2005, p. 3).

Another noteworthy intervention, The Abecedarian Project, began in 1972 and followed 111 low-income infants from birth to age 21. Fifty-seven children were given an intensive, comprehensive birth to five early childhood education program, while 54 were given no treatment. The Abecedarian Project recorded cognitive gains in IQ into adulthood, as well as gains in the areas previously discussed. Researchers stated that the major difference between this project and previous projects was that it began in infancy rather than at age three or four. In addition, the Abecedarian Project operated eight hours a day in a year round model, as opposed to the Perry Preschool Project and others that operated only half days, eight months of the year (Campbell, Pungello, Miller-Johnson, Burchinal, & Ramey, 2001).

Abundant evidence demonstrated the short- and long-term benefits of preschool attendance including: increased educational success, income potential, and self-sufficiency, as well as reduced crime rates and costs of delinquency. The

benefits to students and society far outweighed the costs of the programs. Therefore, investment of time and resources in quality early childhood programs proved essential for the future of all concerned.

The Role of Phonemic Awareness in Reading Acquisition

In light of the Reading First initiative of the No Child Left Behind (NCLB) legislation, the International Reading Association (IRA) and the National Association for the Education of Young Children (NAEYC) teamed and addressed the central issues of reading acquisition. The IRA and NAEYC released a joint position statement, which began "Learning to read and write is critical to a child's success in school and later in life" (1998, p. 1). Lonigan, Burgess, and Anthony expounded this idea; children who read early experienced more print exposure and content knowledge than students who lagged behind in reading. Those who did not learn to read on benchmark received less practice in reading, missed opportunities to develop reading comprehension strategies, encountered reading material that was too advanced for their skills, acquired negative attitudes about reading and had impeded learning in other academic areas due to inability to comprehend content text (Lonigan, Burgess, & Anthony, 2000, p. 2). "In the United States, fully one third of children fail to read at basic levels by fourth grade. . . . and the percentage is higher for children living in poverty…" (McDonald Conner, Morrison, & Slominsky, 2006, p. 2). High

quality preschool experiences increased student's opportunities for academic success.

At the foundation of literacy development, researchers discovered clusters of factors, acquired in a developmental sequence, that contributed to early reading: concepts of print (print awareness), linguistic awareness, graphic awareness (letters), phonemic awareness, grapheme-phoneme correspondence, and word reading (Missall, McConnell, & Cadigan, 2004, p.2; Stahl & Murray, 1994, pp. 4-5). Others cited a rich language and conceptual knowledge base, a broad and deep vocabulary, and verbal reasoning abilities as necessary components of reading acquisition (Abadiano & Turner, 2005, p. 2).

Perhaps the most important measure of successful reading acquisition was phonological awareness. The relationship between phonological awareness and early reading was established in the 1970's (Castle, Riach, & Nicholson, 1994, p. 2; de Jong & van der Leij, 1999, p. 2; Hadaway, 2005; Lonigan, et al., 2000, p. 17; Massengill & Sundberg, 2006, p. 3; Stahl & Murray, 1994, p. 2; Tunmer & Nesdale, 1985, p. 1-2). Phonological awareness consisted of an awareness of the sounds in spoken words, including identification of onset and rhyme, as well as blending and segmenting words (Castle, et al., 1994, p. 2; de Jong & van der Leij, 1999, p. 3; Hadaway, 2005; Lonigan, et al., 2000, p. 17; Massengill & Sundberg, 2006, p. 3; Stahl & Murray, 1994, p. 2; Tunmer & Nesdale, 1985, p. 1-2). Many researchers noted that preliterate measures of phonological awareness were better

predictors of successful reading acquisition than any other factor (Castle, et al. 1994, p. 2; de Jong & van der Leij, 1999, p. 2; Hadaway, 2005; Lonigan, et al., 2000, p. 3; Massengill & Sundberg, 2006, p. 3; McWayne, et al., 2004, p. 4; Missall, et al., 2006, p. 2; Stahl & Murray, 1994, p. 2; Tunmer & Nesdale, 1985, p. 1-2). "Without awareness of the phonemic structure of words, spellings remain odd shapes or arbitrary symbol strings and are extraordinarily difficult to remember" (Murray, 1998, p.2). The National Reading Panel (NRP) (2000) concluded that phonemic awareness training "benefits not only word reading but also reading comprehension" (reprinted in the Reading Research Quartly [Ehri et al., 2001] as cited by Hammill, 2004, p. 8).

Not all researchers agreed that phonemic awareness was a precursor to reading acquisition. Some argued that phonological awareness was a result of learning to read and not the converse (de Jong & van der Leij, 1999, p. 3; Stahl & Murray, 1994, p 5). Others argued that the relationship between early reading and phonological awareness was one of reciprocal causation; each skill relied on the other (de Jong & van der Leij, 1999, p. 3; Lonigan, et al., 2000, p. 6 & 17; Stahl & Murray, 1994, p 6). While Hammill agreed with other researchers that concepts of print, letter knowledge, phoneme-letter correspondence, and word recognition were important factors of reading acquisition, Hammill argued that alphabet knowledge and comprehension were much more important than phonological awareness. Hammill stated, "the current interest in the role of

nonprint abilities in reading such as phonological awareness, rapid naming, intelligence, and memory might be overemphasized" (2004, p. 1).

Researchers have long perused the complexity of reading acquisition. While the exact nature and process of learning to read was still debated, most scholars agreed that phonemic awareness played a role in early literacy.

The Role of Letter and Sound Recognition in Emergent Literacy

While research revealed that phonemic awareness was an important component of reading acquisition, many argued that it was not enough; that alphabetic principle was another incredibly important component of emergent literacy. De Jong & van der Leij noted, "phonological awareness and rapid [letter] naming had independent and specific influences on reading achievement" (1999, p. 1). Rapid naming referred to the retrieval of phonological codes from long-term memory, or accessing the pronunciation of letters, digits, and words (de Jong & van der Leij, 1999, p. 3). "At least some letter knowledge is necessary for the development of phonological awareness, especially at the phoneme level" (de Jong & van der Leij, 1999, p. 15). When children with letter knowledge were compared with children with no letter knowledge, the children with letter knowledge scored significantly higher on first and last sound categorization assessments (de Jong & van der Leij, 1999, p. 15). Lonigan and colleagues stated, "knowledge of the alphabet (ie, knowing the names of letters and the

sounds they represent) at entry into school is one of the strongest single predictors of short- and long-term success in learning to read" (2000, p. 4).

Murray compared the effects of phoneme manipulation instruction (phonemic awareness) and phoneme identity instruction (letter – sound relations). Murray discovered, "because knowledge of phoneme identities seems more helpful in gaining initial insight into alphabetic writing, instruction in phoneme identities is likely of greater value than manipulation instruction for children who have not yet demonstrated alphabetic insight" (1998, p. 17). However, Murray acknowledged, "after children have caught onto how letters cue the phonemes of spoken words, learning to manipulate phonemes by blending and segmentation manipulation will likely help beginners progress into sequential decoding" (1998, p. 17).

Researchers studied preliterate children's acquisition of alphabetic principle, usable knowledge of the fact that letters represented phonemes. They discovered that phonemic awareness and letter-sound knowledge acted in combination to promote the acquisition of reading skill (Byrne and Fielding-Barnsley, 1989, p. 3; Castle, et al. 1994, p. 2; Hadaway, 2005, p. 7; Massengill & Sundberg, 2006, p. 3; McWayne, et al., 2004, p. 4). Whitehurst and colleagues concluded that explicit instruction of letter sounds increased emergent literacy skills in preschool students (1994, p, 16). Tumner and Nesdale (1985) pointed out the importance of the use of phonetic code (letter – sound relation) in working

memory (p. 11). "The application of grapheme-phoneme correspondence rules acts as a self-teaching mechanism that enables the child to develop automaticity and speed in recognizing words visually" (Tumner & Nesdale, 1985, p. 4). Tumner and Nesdale concluded, "phonological awareness is a necessary, but not sufficient, condition for the acquisition of phonological recoding ability" (1985, p. 10).

Letter knowledge, like phonemic awareness, was established as a necessary component of reading acquisition. Young children who obtained a measure of alphabetic principle prior to school entry experienced better success in learning to read.

The Whole Language Versus Phonics Debate

In the era of NCLB, educators and researchers scrambled to determine the most effective approach to reading instruction. The Reading First initiative of NCLB dramatically impacted literacy instruction. Based on a meta-analysis of experimental research, the NRP (2000) determined that the best instructional approach for early reading was systematic and explicit phonics instruction. School systems, especially those in poorer districts, were mandated to adopt federally approved, one-size-fits-all, systematic phonics based reading programs "hailed as the answer for ensuring that no child was left behind" (Altwerger, Arya, Jin, and Jordan, 2004, p. 2). Critics argued that the NRP's study claimed a "singular and narrow view of reading instruction" based on exaggerated findings,

methodological weaknesses, questionable validity, and unreliable generalizability (Altwerger, et al., 2004, p. 2). The ongoing phonics versus whole-language debate raged with even more fury as educators struggled with efforts to balance mandates and research.

Velluntino (1991) addressed the theoretical premises of the ongoing code-oriented versus whole-language debate. Velluntino stated, "Research findings, on balance, tend to favor the major theoretical premises on which code-emphasis approaches to reading instruction are based and are at variance with the major theoretical premises on which whole-language approaches are based" (p. 2). Velluntino acknowledged that reading comprehension was the center of the debate. Phonics advocates argued that fluency (automaticity) was the necessary precursor to comprehension, while whole-language advocates countered that comprehension was based on contextual meaning. Velluntino (1991) discovered "abundant evidence that language comprehension processes become fully operative in reading only when a certain degree of fluency in word identification has been achieved" (p. 3). There was an "overwhelming amount of evidence documenting that the large majority of poor readers are deficient in both alphabetic coding and phoneme awareness . . . and that training in both of these skills significantly improves reading ability . . . " (Velluntino, 1991, p. 6).

Maclean acknowledged that phonics was a solid beginning to reading acquisition. Maclean (1988) discussed phonics instruction as "an effective

method of reading instruction, yet the skills taught by phonics have little to do with the processes of reading acquisition" (p. 514). As previously noted by Tumner and Nesdale, Maclean suggested that the knowledge of phonics constituted a self-teaching mechanism by which early readers incorporated a step-by-step system of rules that eventually led to a more sophisticated understanding of reading strategies through practice (1988, pp. 515-516).

On the contrary, researchers Altwerger, Arya, Jin, and Jordan (2004) compared three reading programs, Open Court Reading, McGraw-Hill's SRA Reading Mastery (Direct Instruction), and a literature based Guided Reading program. Altwerger and colleagues determined, "systematic explicit phonics instruction does not significantly improve children's reading in terms of their use of graphophonic knowledge, meaning construction, and comprehension" (p. 1 & 6). Altwerger's team noted that students in all three groups scored within average ranges in use of graphophonic cues within context and reading isolated pseudo-words out of context. However, these researchers found significantly higher levels of self-correction of miscues in the Guided Reading group over the Direct Instruction and Open Court group, "suggesting that the GR [Guided Reading] children more frequently monitored their reading" (Altwerger, et al., 2004, pp. 5-6). Likewise, Altwerger and colleagues discovered that, while all students in the study were able to successfully identify the setting and characters in retells, the guided reading students "were noticeably stronger in the cohesiveness of their

retelling and in their ability to make inferences and connections to their lives or other texts" (2004, p. 6). The evidence demonstrated that systematic explicit phonics instruction "not only fails to improve meaning construction, but it takes children's focus away from constructing meaning" (Altwerger, et al., 2004, p. 6).

Likewise, Land and Moustafa researched the effectiveness of phonics-based scripted reading programs; Open Court reading and Success for All to be specific, comparing schools that used scripted reading programs to schools that used non-scripted reading programs. Land and Moustafa concluded that "the percent of children scoring at or above the 50th percentile on the SAT 9 test of reading achievement was significantly lower in schools with scripted programs than in schools with unscripted programs" (2002, pp. 1-2). Land and Moustafa expounded, "schools using Open Court are actually significantly more likely to be in the bottom quartile than comparable schools using non-scripted programs" (2003, p. 1), noting that students demonstrated a decrease in scores moving from grade to consecutive grade. Therefore, evidence demonstrated "Open Court actually limits what children are able to achieve in reading" (Land & Moustafa, 2003, p. 2-3).

In the analysis of evidence, Velluntino noted that the trouble with most phonics-based programs was that they did not foster a conceptual grasp of the reading material. Such programs:

> "typically immerse the beginning reading in interminable skills activities through which letter sounds may be learned. However, the knowledge gained from such activities may remain in a sterile form because the program does not provide the child with adequate opportunity to apply it in real reading contexts" (1991, p. 7).

Scripted reading programs such as Open Court raised other issues as well. Altwerger's team discussed concerns that teachers "have lost flexibility in choosing appropriate assessments or developing instructional approaches that fit the strengths and needs of an individual child" as a result of rigid scripted reading programs (2004, pp. 1-2 & 7). The researchers stated that the use of scripted reading programs that were based on systematic explicit phonics instruction "posed ethical and professional dilemmas" (Altwerger, et al., 2004, p. 3).

Although the battle between whole language and phonics based instructional approaches remained heated and unresolved, there were many proponents of more balanced instructional approaches. Velluntino (1991) noted that research favors phonics based instruction; however, Velluntino pointed out that:

> code-oriented instruction need not and should not exclude the use of meaning-oriented activities . . . [which] encourage the beginning reader to conceive of reading and writing as communicative and intrinsically related enterprises . . . [and] allow him or her to make functional use of developing decoding skills (p. 6).

Velluntino continued, “Whole language approaches were most effective for teaching functional aspects of reading such as print concepts and expectations about reading, whereas more direct approaches were better at helping students master word recognition skills” (1991, p. 6-7). Velluntino concluded “the research runs counter to exclusive versions of either whole-language or code-oriented approaches to reading instruction. In other words, the research supports a balanced approach” (1991, p. 10).

Many teachers, whether supporters of whole language programs or in favor of balance, were frustrated by state and federal mandates for specified curricula in the wake of NCLB. One teacher equated the NRP’s recommendations with Dr. Suess’s oobleck, a gooey green substance that falls from the sky wreaking havoc on the kingdom because of the whims of the king, Venable (2006) stated, “the NPR’s oobleck continues to fall from the sky, preventing classroom teachers from making wise instructional decisions . . . [oobleck] permeates every aspect of our role as teachers” (p. 2).

Commeyras (2007), a teacher educator, pointed out the necessity of open-mindedness in reading instruction, noting that the debate between whole-language or explicit phonics instruction has been around even longer than most realize. Commeyras noted that the first scripted reading texts for teachers were published in 1888 by Samuel and Adeline Monroe (p. 2). Commeyras stated that although there were many effective approaches to reading instruction, all approaches

required a basic understanding of reading acquisition, the ability to make strategic decisions regarding reading instruction, the use of critical thinking and discussion, and the use improvisational skills for differentiation. Commeyras concluded that teachers needed to be adept at teaching reading using all methodologies, because in the end, it was the school district in which a teacher was employed that made the final decisions about how reading instruction was delivered. As philosophies or administrations changed, likely would the approach to teaching reading instruction change as well (Commeyras, 2007).

Developmentally Appropriate

With the enactment of NCLB legislation, including the federal initiative Good Start Grow Smart and the House and Senate versions of the Head Start reauthorization bill, developmental standards and academic assessments filtered their way down to the preschool years, along with the threat of removal of funding for failure (Stipek, May 2006, p. 3; Stipek, June 2006, p. 2). Many childhood experts feared that this legislation encouraged developmentally inappropriate instruction that focused on isolated skills and was not individually responsive to children's needs, producing early measures of failure and tracking (Stipek, May 2006, p. 3; Stipek, June 2006, p. 2). The IRA and the NAEYC voiced concern for children's enthusiasm for learning, and other intellectual abilities such as critical, analytic, and creative thinking and reasoning skills (Stipek, May 2006, p. 3; Stipek, June 2006, p. 2). Increased emphasis on

academic skills in the preschool years "could stimulate constructive practices … [or] … do more harm than good" (Stipek, May 2006, p. 3; Stipek, June 2006, p. 2). Early childhood educators struggled to maintain a balance between increased standards and developmentally appropriate practices (Stipek, May 2006, p. 3; Stipek, June 2006, p. 2).

In an effort to maintain appropriate instruction, researchers examined effective preschool instructional practices. Quality preschool programs included close supervision and direction of experts, accountability, and relatively low child-staff ratios and group sizes (Barnett, 1992, pp. 282-283; Ramey & Ramey, 2004, p. 13). Important measures of student progress included school routines, letters and numbers, colors and shapes, print awareness, phonemic awareness, and how to play with others, as well as social competence, behavioral self-regulation, and physical and emotional well-being (Missall, et al., 2006, p. 5; Ramey & Ramey, 2004, p. 13; Slaby & Loucks, 2005, pp. 4-5; Stipek, May 2006, pp. 1-2). Many researchers argued that development of resilience, or social competence and approaches to learning like persistence, motivation, initiation, flexibility, and attentiveness contributed significantly to future academic success (McWayne, et al., 2004, p. 4; Stipek, May 2006, p. 6).

Researchers acknowledged that the quality and approach of teaching mattered. The debate between structured, often scripted, teacher directed instruction, grounded in traditional learning theory and a more child-centered

manipulative approach, grounded in constructivist theory raged for decades (Stipek, May 2006, p. 6). However, theorists universally agreed that specific types and quality of essential preschool experiences positively related to child outcomes including: teacher sensitivity and responsiveness (encouragement), use of cognitively challenging vocabulary and conversations, interaction with books alone and with adults, styles of interactive book reading including dialogic reading strategies, quality direct instruction of basic skills embedded in fun and meaningful activities, child initiated practices that encouraged exploration including print rich activity centers and play time, and first-hand experiences designed to increase vocabulary (Abadiano & Turner, 2005, p. 8; Davies, & Brember, 1997, p. 3; IRA & NAEYC, Statement of Issues, 1998, pp. 3-8; McDonald Conner, et al., 2005, p. 2; Missall, et al., 2006, p. 5; Ramey & Ramey, 2004, pp. 3-4; Slaby & Loucks, 2005, p. 5; Stipek, May 2006, pp. 1-2 & 9). Many researchers concluded, "the single most important activity for building [the] understandings and skills essential for reading success appears to be reading aloud to children" (IRA & NAEYC, Statement of Issues, 1998, p. 6). Children's active participation in book reading proved to be the most effective preschool literacy practice (Nel, 2000, p. 5).

In addition, effective developmentally appropriate preschool programs included family involvement components. "Home learning is the only factor that leads to higher scores on assessments of how children approach learning"

(Nelson, 2005, p. 7). "As their children's first teachers, parents have more opportunities to model how to learn than teachers do. Thus, they have more influence in this area than teachers do" (Nelson, 2005, p. 7). Research revealed parental influences in academic expectations, cognitive stimulation in the home, and interpersonal relationships significantly impacted school success (Lunenburg, 2000, p. 6). Adult modeling of literacy skills heavily influenced children's literacy acquisition (Nel, 2000, p. 5).

In an effort to determine what was developmentally appropriate for young children, researchers and theorists addressed the long debated issue of play. Play based early learning environments proved essential for overall healthy child development. The exploratory and open-ended nature of play encouraged the intrinsic, evolutionary, and synergistic development of early learning (Stegelin, 2005, p. 2). Play positively impacted vocabulary, communication and oral language skills, and was essential for physical, social, emotional, spiritual, and intellectual growth (McDonald Connor, et al., 2006, p. 20; Stegelin, 2005, p. 2). Using brain-imaging techniques, brain research documented observable brain cell development during stimulating play activities (Stegelin, 2005, p. 7). Neuroscientists acknowledged "connections between brain cells that underlie new learning become hard-wired if they are used repeatedly but can be diminished if they are not" (Stegelin, 2005, p. 7). Active, hands-on play that included auditory and visual stimulation and consistent daily routines provided the necessary

conditions for repeated practice of new learning (Stegelin, 2005, p. 7). Current research on early literacy supported social and dramatic play, or content rich instruction, as a significant contributor to early language development and later literacy indicators (Abadiano & Turner, 2005, p. 2; Neuman & Roskos, 2005, pp. 6-8; Stegelin, 2005, p. 8). Thus, play-based, child-centered approaches to learning appeared to promote more sustained positive effects in both academic and social domains (Stipek, May 2006, p. 7; Stipek, June 2006, p. 3).

In light of the overwhelming benefits of play-based learning, researchers examined the appropriateness of whole group direct instruction for young children. In regards to group size, researchers discovered that "young children benefit most from being taught in small groups or as individuals" (IRA & NAEYC, Statement of Position, 1998, p. 8). "The effect size for student-level, code-focused instruction (small group) was about 10 times greater than was its classroom-level (whole class) counterpart" (McDonald Conner, et al., 2005, p. 1). Therefore, the recommended class size for four and five year olds was eight to ten children per adult with no more than 20 total students (IRA & NAEYC, Statement of Position, 1998, p. 8).

In regards to direct instruction, many childhood experts found the rigid pacing, intensive drill and practice of isolated skills, and repetitive decontextualized tasks of many scripted programs developmentally inappropriate teaching practices for young children (IRA & NAEYC, Statement of Issues, 1998,

p. 3; Stipek, June 2006, p. 2). This type of instruction "might actually undermine, rather than promote the very goals of improving literacy learning" (Abadiano & Turner, 2005, p. 3). Although students in scripted preschool programs demonstrated short-term gains in basic pre-literacy skills, the children's motivation, cognitive outcomes, perceptions of competence, expectations for success, pride in achievement, anxiety levels, dependence on adults, self regulation, adaptive learning skills, and attentiveness suffered as a result of highly teacher directed instruction and scripted programs (McDonald Conner, et al., 2005, p. 4; Stipek, May 2006, p. 7). The evidence was overwhelming, "effective teaching cannot be delivered through a one-size-fits-all or scripted program because teachers need to be responsive to their children's individual skills and interests" (Stipek, May 2006, p. 8).

With the understanding that whole group direct instruction was developmentally inappropriate, early childhood educators needed to know the best instructional approaches to phonemic awareness and alphabetic principle in the preschool years. Although many researchers concluded that phonemic awareness was a necessary precursor to reading acquisition, the IRA and the NAEYC suggested that prior to age five, explicit instruction of phonemic awareness was likely inappropriate. "In the preschool years sensitizing children to sound similarities does not seem to be strongly dependent on formal training but rather

from listening to patterned, predictable texts while enjoying the feel of reading and language" (IRA & NAEYC, Statement of Issues, 1998, p. 9).

Likewise, research demonstrated "alphabet knowledge is best learned through naturalistic, fun, and gamelike manner" (Massengill & Sundberg, 2006, p. 3). Massengill & Sundberg discussed the brain research that supported this view:

> By age five, children's logical hemisphere of their brain has not matured sufficiently for them to learn their letters through a linear, logical process with few mnemonic images. … The gestalt hemisphere usually has a dendrite growth between ages four and seven, whereas the logical hemisphere typically grows rapidly between seven and nine years of age. Therefore, young children who have been taught to learn their numbers and letters in a linear, logical fashion with few images may experience high levels of stress. Logical instruction defies natural development of brain functions and children have to work very hard at learning alphabet knowledge. Children need to learn letters through association, image, emotion, and spontaneous movement (2006, p. 3).

Massengil and Sundberg recommended a play-based, multi-sensory, visual-auditory-motor, approach for learning letter sound relationships (2006, p. 5).

In keeping with the perspective of balance, the IRA and the NAEYC stated, "No one teaching method or approach is likely to be the most effective for

all children" (Statement of Issues, 1998, p. 6). Good teachers used a variety of strategies to assist all learners, including: sharing books, talking about letters by name and sound, providing a literacy rich environment, engaging children in language games, promoting literacy-related play, and encouraging children to experiment with writing to name a few (IRA & NAEYC, Continuum of Children's Development in Early Reading and Writing, 1998, p. 2). "Clearly, the various aspects of children's competence do not operate in isolation from one another" (McWayne, et al., 2004, p. 5). Studies demonstrated "more time in emergent code-focused activities was associated with preschoolers' alphabet and letter-word recognition growth, whereas more time in meaning-focused activities was related to vocabulary growth" (McDonald Conner, et al., 2005, p. 1). Evidence revealed that a balanced approach between explicit teaching of basic skills and meaning focused play based learning "yielded more positive short- and long-term educational and social outcomes for preschoolers than did programs that emphasized one over the other or neither" (2005, McDonald Conner, et al. p. 4 & 22).

Most researchers agreed with the evidence that worksheets and drill and practice activities were not developmentally appropriate. However, directly instructed letter and sound activities and meaningful academic experiences, embedded in fun meaningful activities such as songs, rhymes, crafts, games, alphabet books and puzzles, and play consistently increased student outcomes.

Students then practiced these skills through child initiated play centers (IRA & NAEYC, Statement of Issues, 1998, p. 8; McDonald Conner, et al., 2005, p. 22; Morrow, 2004, p. 2; Nel, 2000, p. 2; Stipek, May 2006, pp. 1-2). "Rather than keeping academic content out of preschool, it should co-exist with informal teaching methods" (Nel, 2000, p. 2). Researchers concluded that early childhood programs must develop a "comprehensive and integrative curricula that reflect the early learning needs of the whole child" (McWayne, et al., 2004, p. 17).

Summary

In summary, the extensive benefits of quality preschool programs proved essential not only for the future success of young children, but also for the well being of the community and society in general. An indispensable component of preschool instruction was early literacy training, which included phonemic awareness and alphabetic principle. How instruction was delivered mattered, yet the debate about the most appropriate method, whole language or phonics continued to rage. For early childhood educators, the central issue surrounding this ongoing, heated debate was developmentally appropriate practice for young learners. The author discussed the importance of balance between the opposing viewpoints, focusing in the end on what was truly important, the future success of each individual child.

CHAPTER 3

Methodology and Treatment of Data

Introduction

The Wapato School District's (WSD) preschool classes of 2004-2005 and 2006-2007, were administered a pretest and posttest of alphabetic principle to determine their improvement in alphabet knowledge, a necessary component of reading acquisition. Each similar group was given different treatments over the course of the school year, with the 2004-2005 control group receiving only teacher designed thematic units, while the 2006-2007 experimental group received Open Court reading curriculum in addition to thematic units. The data from both cohorts of students were compared using a t test analysis, to determine if the addition Open Court reading curriculum improved student learning of alphabet knowledge.

Methodology

The researcher used an experimental method in which two groups of students were examined to determine the effectiveness of Open Court reading curriculum. One group of students, the WSD preschool classes of 2004-2005, was taught using teacher designed thematic units with literacy activities embedded in quality literature, songs, games, and free play. The other group of students, the preschool classes of 2006-2007, was taught using Open Court reading curriculum in addition to teacher designed thematic units. Teacher

designed alphabetic assessments for letter recognition, letter sound relationships, and beginning-sound word association were administered to both groups of students in September and May. Data from 2004-2005 was compared with data from 2006-2007, using a t test to determine if the addition of Open Court reading curriculum improved students letter / sound recognition skills.

Participants

In the Wapato School District's (WSD) Preschool program, two teachers served four groups of students daily in two sessions, morning and afternoon. Each class enrolled up to 13 students, allowing for a total of 52 altogether. Students were selected for the program by an application and screening process. Beginning in May of the previous school year, applications became available and were collected until early screening began in mid June. Students were screened using a teacher-modified version of Acuscreen, along with teacher developed oral language, literacy, fine motor, and writing components. Students were placed in classes according to parent requests for a specific teacher or class session, as well as age, ability, gender, and ethnicity. Applications continued to be accepted throughout the summer and into the school year. When classes were at capacity, a waiting list was formed. In the unusual event that a student dropped from the program, the next student on the waiting list was screened and enrolled. The researcher's 2004-2005 classes had 22 students enrolled for the entire year, from September to May, while the 2006-2007 classes had 21.

The participants in Wapato's preschool program largely matched the demographics of the WSD and the rural community of Wapato with a few exceptions. During both years of this study, the participants in the preschool program were approximately 45% male and 55% female, 64% were Hispanic, 16% Native American, 11% Caucasian, 7% Asian, and 2% Black. Approximately two thirds of the students in both groups qualified for free or reduced lunch. About half of the students were bilingual, with English being their second language. The WSD served a higher percentage of Native American students (25.9%) and a lower percentage of Caucasian (6.5%) and Black (0.2%) students during these sample years. Likewise, the WSD's socio-economic status was lower than that represented in the preschool program with 89.1% of students qualifying for free and reduced lunch (OSPI, 2006;Wapato School District, 2006). The demographics of the WSD mirrored the larger community of Wapato. The demographic breakdown of race was as follows: Hispanic (76.2%), Other race (57.6%), White Non-Hispanic (12.6%), American Indian (10.8%), Two or more races (5.5%), Filipino (1.2%), and Black (0.5%). One third of the people in Wapato were born in another country. The median income was $25,800, which was considerably below the national average. Wapato's unemployment rate was 23.6%. Only 40% of the Wapato area's adult residents obtained a high school or higher education (citydata.com, 2006).

It was apparent that the Wapato community consisted of a high minority low socioeconomic population. Characteristically the students in Wapato were at risk of academic failure unless quality preschool interventions were implemented.

Instruments

A teacher developed alphabetic assessment instrument for letter recognition, letter sound relationships, and beginning-sound word association was administered to both groups of students in September and May. The test listed the upper and lower case letters of the alphabet in random order. The assessor went through the test 3 times with each student individually. On the first attempt, the student recalled the name of the letter. On the subsequent tries, the student was asked to give the sound of the letter, then a word with which the letter began. The use of this data-gathering device was appropriate because it measured the number and usability of letters a student knew at the beginning and end of the school year. Validity and reliability were established because the test measured individual knowledge of alphabetic principle, a necessary component of reading acquisition. Self-referenced scoring, the number of known letters in September subtracted from the number of known letters in May, of the alphabet knowledge test was then used to determine the amount of improvement over time. The data from the control group, 2004-2005, was compared using STATPAK software with data from the experimental group, 2006-2007, using a t test for independent samples to determine if the addition of Open Court reading curriculum improved students letter / sound recognition skills.

Design

A quasi-experimental nonequivalent control group design was used in this project. Two similar groups of students were tested, received different treatments over the course of time, and then tested again, allowing for comparison of the effectiveness of the treatment. In this design, history, maturation, testing, instrumentation, selection, mortality, and multiple treatment interference were all controlled for. No memorable or catastrophic events influencing history occurred during either sample school year. Students were selected by convenience sampling, all WSD preschool students enrolled in morning and afternoon sessions, controlling for selection. Likewise, students were tested during the same time frames using the same testing tool to reduce maturation effect and instrumentation. Pre and post testing occurred at far enough intervals to not influence testing. Mortality was not an issue because only three students dropped from the preschool program during the sample years. Neither group of students were given more than one treatment, eliminating the effect of multiple-treatment interference. On the contrary, regression, selection interaction, and pretest treatment interaction were not controlled for. Statistical regression, high and low scores moving closer to the mean usually due to guessing, was not controlled for but was likely not an influence on final study results as all students were tested, not just those who scored high or low on the prestest. Varied maturation rates within established groups were not control for, thus influencing selection interaction; however, normal preschool students generally matured within average ranges. Because of pretesting, pretest treatment interaction was a possible influence, resulting in students paying closer attention to the treatment; however, due to the age of the participants, the effect was likely very minimal.

The quasi-experimental, pretest / posttest design was an effective study to determine if the addition of the new reading curriculum had influenced student learning. All influencing variables were controlled for to the best of the researcher's ability.

Procedure

The participants for this study were selected using a convenience sample, the students enrolled in the researcher's morning and afternoon sessions of the Wapato preschool program for the years 2004-2005 and 2006-2007. As part of

the entry screening process, students were pretested individually by the researcher in September of each year using a teacher designed alphabetic knowledge test. The screening process also included measures for concepts of print, fine motor skills, oral language skills, and mathematical reasoning skills. It was determined that each cohort of students was similar in that high, medium, and low skill levels were equally represented in each class.

Students in the 2004-2005 cohort were taught using literacy embedded teacher designed thematic units. Students in the 2006-2007 cohort were taught using Open Court preschool reading curriculum in addition to teacher designed thematic units. Both cohorts of students were tested for alphabet knowledge again in May to determine the amount of improvement in conceptual alphabetic principle. Pre and post test data were collected and recorded on alphabet scoring sheets, included in the appendix, and entered into a Microsoft Excel spreadsheet for ease of storage and comparison (Microsoft, 2002).

The assumption was made that preschool students had little to no formal literacy training prior to school entry. However, initial screening revealed that two students in the 2004-2005 cohort and four in the 2006-2007 cohort did in fact enter preschool with abundant alphabet knowledge, twenty or more letter names. However, only one student in the 2006-2007 cohort demonstrated an understanding of letter / sound correspondence. Therefore, self-referenced scoring was used to calculate student improvement over time. It was also

assumed that all students had appropriate nutrition and access to health care. The curriculum was developmentally appropriate for young students and the teachers had the necessary training to implement the curriculum. The preschool environment was warm, safe, and inviting. Likewise, all students entered preschool ready, willing, capable, and eager to learn and that they all had appropriate family support at home to foster early learning.

Of importance to note, 2004-2005 students were instructed by a first year teacher with only a Bachelor's Degree while 2006-2007 students were instructed by a third year teacher working toward a Master's Degree. Another noteworthy factor was that students in 2004-2005 were aged three and four when they entered the program in September 2004 and students in 2006-2007 were all at least four years of age at preschool entry in September 2006.

The limitations of this study included a less than ideal sample size and a shorter than ideal duration of study. Results of the study were considered more generalizable if more students had been included and the study had spanned a longer time frame.

Treatment of the Data

Student data was stored via Microsoft Excel spread sheets (2002). Simple subtraction was used to determine the number of letters or amount of improvement over the course of the school year that each student achieved in each category, letter naming, letter sound correspondence, and word association.

September's scores were subtracted from May's scores. The raw improvement scores were entered into STATPAK software using a t-test analysis to compare the achievement of the two selected groups of preschoolers (Macromedia, 1997).

Summary

In conclusion, two cohorts of students, the classes of 2004-2005 and the classes of 2006-2007, were selected and pretested to determine preschool entry-level alphabetic knowledge. The two groups were determined to be similar in that they both were students attending the WSD's preschool program and had equal demographic, socio-economic, and academic skill level representation. Each group was given different treatments over the course of the school year with the 2004-2005 control group receiving only teacher designed thematic units while the 2006-2007 experimental group received Open Court reading curriculum in addition to teacher designed thematic units. Both cohorts of students were tested for alphabetic knowledge again at the end of the school year. Self referenced data, the amount of improvement in conceptual alphabetic principle, was compared between the two groups using a t test analysis, to determine if Open Court reading curriculum improved student learning of alphabet knowledge.

CHAPTER 4

Analysis of the Data

Introduction

Using data collected from two cohorts of preschool students, the researcher determined the amount of improvement in alphabetic principle over the course of the school year. The data was then analyzed using a t-test for independent variables. The results of the study were discussed.

Description of the Environment

Wapato School District (WSD) preschool program was located in the small rural community of Wapato in the Lower Yakima Valley of Central Washington. The students enrolled in the WSD preschool represented the larger community of Wapato, consisting of a large minority population (65% Hispanic and 25% Native American) with low socio-economic status (89% free or reduced lunch) (OSPI, 2006). The 2004-2005 cohort of students were taught using teacher designed thematic units with literacy activities embedded in quality literature, songs, games, and free play. In 2006-2007, students were taught using Open Court reading curriculum in addition to teacher designed thematic units. Teacher designed alphabetic assessments were administered to both groups of students in September and May. Data from 2004-2005 were compared with data from 2006-2007 using a t test for independent variables.

Hypothesis

Letter recognition and letter sound correspondence were crucial to the acquisition of reading. Preschool student's letter / sound recognition improved as a result of using Open Court reading curriculum.

Null Hypothesis

Open Court reading curriculum had no significant effect on preschool student's letter / sound recognition skills. Significance was determined for $p \geq 0.05$, 0.01, and 0.001.

Results of the Study

Table 1 displayed the students' improvement in four categories, upper case letter naming, lower case letter naming, letter / sound correspondence, and beginning letter word association for both the control and experimental groups of students. Improvement in alphabet knowledge was determined by subtracting the number of previously known letters from the number of letters that were known at the end of the school year. Self-referenced improvement scores for each category and cohort were displayed in the columns directly after pre and posttest scores. Mean improvement scores were calculated and displayed in the bottom row of the table. It was important to note that the mean improvement of the experimental group was higher than that of the mean improvement of the control group in all four categories.

Table 1.

Alphabetic Knowledge

Upper Case Letter Naming						Lower Case Letter Naming						Letter / Sound Correspondence						Beginning Letter Word Association					
04 05 pre	04 05 post	04 05	06 07 Pre	06 07 post	06 07	04 05 pre	04 05 post	04 05	06 07 pre	06 07 post	06 07	04 05 pre	04 05 post	04 05	06 07 Pre	06 07 post	06 07	04 05 pre	04 05 post	04 05	06 07 pre	06 07 post	06 07
1	7	6	1	17	16	0	5	5	1	11	10	0	6	6	0	15	15	0	4	4	0	9	9
0	10	10	0	3	3	0	9	9	0	2	2	0	8	8	0	0	0	0	14	14	0	1	1
0	14	14	16	26	10	0	12	12	8	25	17	0	12	12	0	13	13	1	6	5	0	17	17
4	24	20	1	26	25	0	22	22	0	24	24	0	22	22	0	10	10	0	16	16	0	23	23
5	25	20	0	5	5	0	22	22	0	0	0	0	17	17	0	0	0	0	15	15	0	1	1
23	26	3	25	26	1	22	26	4	12	24	12	14	26	12	0	23	23	19	26	5	0	10	10
24	26	2	9	26	15	16	24	8	0	26	26	13	20	7	0	30	30	0	20	20	0	23	23
3	22	19	26	26	0	0	21	21	16	26	10	0	14	14	0	26	26	0	12	12	6	25	19
7	26	19	0	8	8	0	19	19	0	9	9	0	17	17	0	6	6	0	11	11	0	8	8
0	9	9	12	26	14	0	2	2	4	26	22	0	3	3	0	24	24	0	8	8	0	25	25
0	12	12	26	26	0	0	9	9	16	26	10	0	6	6	13	26	13	0	4	4	9	20	11
0	23	23	15	26	11	0	15	15	0	26	26	0	18	18	0	26	26	0	8	8	0	25	25
0	5	5	3	10	7	0	0	0	0	8	8	0	3	3	0	5	5	0	7	7	0	1	1
0	7	7	0	14	14	0	4	4	0	7	7	0	2	2	0	3	3	0	8	8	0	13	13
0	2	2	26	26	0	0	0	0	24	26	2	0	0	0	20	34	14	0	6	6	26	26	0
0	12	12	0	26	26	0	5	5	0	24	24	0	9	9	0	13	13	0	10	10	0	9	9
0	3	3	2	8	4	0	1	1	0	5	5	0	2	2	0	4	4	0	4	4	0	5	5
0	2	2	11	23	12	0	2	2	0	18	18	0	1	1	0	21	21	0	5	5	4	16	12
3	5	2	0	10	10	0	1	1	0	11	11	1	0	0	0	1	1	0	5	5	0	3	3
5	25	20	3	25	22	0	23	23	0	19	19	0	19	19	0	18	18	0	16	16	1	18	17
0	15	15	1	22	21	0	9	9	0	14	14	0	13	13	0	12	12	0	16	16	0	11	11
0	11	11				0	9	9				0	6	6				0	4	4			
Mean Improvements																							
10.73			12.44			10.1			13.8			9.85			14.58			9.23			12.15		

Table 2 reported the statistical calculations, computed using STATPAK (1997) software, of students' improvements in uppercase letter naming ability. The number of scores in treatment group X (n_1) was 18. The sum of the scores of group X was 224. The mean of group X (X_1) was 12.44. The sum of squared scores for group X was 3728.0. SS (SS_1) of group X was 940.44. The number of scores in control group Y (n_2) was 22. The sum of the scores of group Y was 236. The mean of group Y (X_2) was 10.73. The sum of squared scores for group Y was 3606.0. SS (SS_2) of group Y was 1074.36. Using the formula provided for a t test of independent variables, STATPAK calculated a t value of $t = 0.74$, for uppercase letter naming improvement. The degrees of freedom were 38.

Table 2.

STATPAK Table of Uppercase Letter Naming Improvement

Statistic	Values
Number of Scores in Group X	18
Sum of Scores in Group X	224.0000
Mean of Group X	12.44
Sum of Squared Scores in Group X	3728.00
SS of Group X	940.44
Number of Scores in Group Y	22
Sum of Scores in Group Y	236.0000
Mean of Group Y	10.73
Sum of Squared Scores in Group Y	3606.00
SS of Group Y	1074.36
t - value	0.74
Degrees of Freedom	38

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{SS_1 + SS_2}{n_1 + n_2 - 2}\right)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

$$t = \frac{12.44 - 10.73}{\sqrt{\left(\frac{940.44 + 3606.0}{18 + 22 - 2}\right)\left(\frac{1}{18} + \frac{1}{22}\right)}}$$

$$t = 0.74$$

Using a t test for independent variables with STATPAK (1997) software, the researcher statistically analyzed the uppercase letter naming data. Table 3 showed that the calculated t value for the upper case letter naming category, t = 0.74, was less than the threshold values provided by Gay, Mills, and Airasian (2006, p 571). No significance was found at any of the three levels of probability therefore the null hypothesis was accepted at all three thresholds. No support for the hypothesis was found at any of the confidence levels.

Table 3.

Distribution of t for Uppercase Letter Naming Improvement

	p		
d f	0.05	0.01	0.001
38	2.042	2.750	3.646

Table 4 reported the statistical calculations, computed using STATPAK (1997) software, of students' improvements in lowercase letter naming ability. The number of scores in treatment group X (n_1) was 20. The sum of the scores of group X was 276. The mean of group X (X_1) was 13.8. The sum of squared scores for group X was 4590. SS (SS_1) of group X was 1141.2. The number of scores in control group Y (n_2) was 20. The sum of the scores of group Y was 202. The mean of group Y (X_2) was 10.1. The sum of squared scores for group Y was 3148. SS (SS_2) of group Y was 1197.80. Using the formula provided for a t test of independent variables, STATPAK calculated a t value of t = 1.52, for lowercase letter naming improvement. The degrees of freedom were 38.

Table 4.

STATPAK Table for Lowercase Letter Naming Improvement

Statistic	Values
Number of Scores in Group X	20
Sum of Scores in Group X	276.0000
Mean of Group X	13.8
Sum of Squared Scores in Group X	4590.00
SS of Group X	1141.20
Number of Scores in Group Y	20
Sum of Scores in Group Y	202.0000
Mean of Group Y	10.10
Sum of Squared Scores in Group Y	3148.00
SS of Group Y	1197.80
t - value	1.52
Degrees of Freedom	38

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{SS_1 + SS_2}{n_1 + n_2 - 2}\right)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

$$t = \frac{13.8 - 10.10}{\sqrt{\left(\frac{1141.00 + 1197.80}{20 + 20 - 2}\right)\left(\frac{1}{20} + \frac{1}{20}\right)}}$$

$$t = 1.52$$

Using at test for independent variables with STATPAK (1997) software, the researcher statistically analyzed the lower case letter naming data. Table 5 showed that the calculated t value for the lower case letter naming category, t = 1.52, was also less than the threshold values provided by Gay, Mills, and Airasian (2006, p 571). No significance was found at any of the three levels of probability therefore the null hypothesis was accepted at all three thresholds. No support for the hypothesis was found at any of the confidence levels.

Table 5.

Distribution of t for Lowercase Letter Naming Improvement

	p		
d f	0.05	0.01	0.001
38	2.042	2.750	3.646

Table 6 reported the statistical calculations, computed using STATPAK (1997) software, of students' improvements in letter/sound correspondence. The number of scores in treatment group X (n_1) was 19. The sum of the scores of group X was 277. The mean of group X (X_1) was 14.58. The sum of squared scores for group X was 5381. SS (SS_1) of group X was 1343.63. The number of scores in control group Y (n_2) was 20. The sum of the scores of group Y was 197. The mean of group Y (X_2) was 9.85. The sum of squared scores for group Y was 2729. SS (SS_2) of group Y was 788. Using the formula provided for a t test of independent variables, STATPAK calculated a t value of t = 1.94, for letter/sound correspondence improvement. The degrees of freedom were 37.

Table 6.

STATPAK table for Letter / Sound Correspondence Improvement

Statistic	Values
Number of Scores in Group X	19
Sum of Scores in Group X	277.00
Mean of Group X	14.58
Sum of Squared Scores in Group X	5381.00
SS of Group X	1343.63
Number of Scores in Group Y	20
Sum of Scores in Group Y	197.00
Mean of Group Y	9.85
Sum of Squared Scores in Group Y	2729.00
SS of Group Y	788.00
t - value	1.94
Degrees of Freedom	37

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{SS_1 + SS_2}{n_1 + n_2 - 2}\right)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

$$t = \frac{14.58 - 9.85}{\sqrt{\left(\frac{1343.6 + 788.0}{19 + 20 - 2}\right)\left(\frac{1}{19} + \frac{1}{20}\right)}}$$

$$t = 1.94$$

Using a t test for independent variables with STATPAK (1997) software, the researcher statistically analyzed the letter/sound correspondence data. Table 7 showed that the calculated t value for the letter / sound correspondence category, t = 1.94, was less than the threshold values provided by Gay, Mills, and Airasian (2006, p 571). No significance was found at any of the three levels of probability, therefore the null hypothesis was accepted at all three thresholds. No support for the hypothesis was found at any of the confidence levels.

Table 7.

Distribution of t for Letter / Sound Correspondence Improvement

	p		
d f	0.05	0.01	0.001
37	2.042	2.750	3.646

Table 8 reported the statistical calculations, computed using STATPAK (1997) software, of students' improvements in beginning letter/word association. The number of scores in treatment group X (n_1) was 20. The sum of the scores of group X was 245. The mean of group X (X_1) was 12.15. The sum of squared scores for group X was 4165. SS (SS_1) of group X was 1212.66. The number of scores in control group Y (n_2) was 22. The sum of the scores of group Y was 203. The mean of group Y (X_2) was 9.23. The sum of squared scores for group Y was 2395. SS (SS_2) of group Y was 521. Using the formula provided for a t test of independent variables, STATPAK calculated a t value of t = 1.44, for beginning letter/word association. The degrees of freedom were 40.

Table 8.

STATPAK Table for Beginning Letter / Word Association Improvement

Statistic	Values
Number of Scores in Group X	20
Sum of Scores in Group X	245.00
Mean of Group X	12.15
Sum of Squared Scores in Group X	4165.00
SS of Group X	1212.66
Number of Scores in Group Y	22
Sum of Scores in Group Y	203.00
Mean of Group Y	9.23
Sum of Squared Scores in Group Y	2395.00
SS of Group Y	521.00
t - value	1.44
Degrees of Freedom	40

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{SS_1 + SS_2}{n_1 + n_2 - 2}\right)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

$$t = \frac{12.15 - 9.23}{\sqrt{\left(\frac{1212.66 + 521.00}{20 + 22 - 2}\right)\left(\frac{1}{20} + \frac{1}{22}\right)}}$$

$$t = 1.44$$

Using a t test for independent variables with STATPAK (1997) software, the researcher statistically analyzed the beginning letter / word association data. Table 9 showed that the calculated t value for the beginning letter / word association category, t = 1.44, was less than the threshold values provided by Gay, Mills, and Airasian (2006, p 571). No significance was found at any of the three levels of probability, therefore the null hypothesis was accepted at all three thresholds. No support for the hypothesis was found at any of the confidence levels.

Table 9.

Distribution of t for Beginning Letter / Word Association Improvement

	p		
d f	0.05	0.01	0.001
40	2.021	2.704	3.551

Findings

Using STATPAK software, a t test for independent variables calculated a t value of 0.74 for upper case letter naming, 1.52 for lower case letter naming, 1.94 for letter / sound correspondence, and 1.44 for beginning letter word association. As demonstrated in Tables 2 through 9, according to the threshold values provided by Gay, Mills, and Airasian (2006, p 571), these t values demonstrated no significant difference for any level of probability, $p \geq 0.05$, 0.01, and 0.001, between the experimental and control groups in any early literacy category.

Based on the careful analysis of the corresponding data and the testing of the null hypothesis, the researcher concluded that there was no significant difference in early literacy category of alphabet knowledge at any level of probability between preschool students who were taught using literacy rich teacher designed thematic units and those who were taught with Open Court reading curriculum in addition to thematic units. Therefore, the null hypothesis was accepted. No support was found for the hypothesis. Open Court reading curriculum had no significant effect on preschool students' conceptual letter knowledge in any of four alphabetic principle categories.

Discussion

The results of this study provided no support for the original hypothesis: preschool student's letter / sound recognition improved as a result of using Open Court reading curriculum. These findings were consistent with researcher

expectations and research on developmentally appropriate practices for facilitating growth in emergent literacy. As concluded in Chapter 2, effective early literacy training included a balance between direct instruction and play based learning as well as balanced phonics and whole language approaches. As cited in Chapter 2, Open Court reading curriculum incorporated a large amount of direct instruction with little play-based learning.

Summary

The researcher provided an overview and statistical analysis of the study. The outcome of the analysis led the researcher to conclude that there was no significant difference in the number of letters and sounds learned by two similar groups of students receiving different types of literacy instruction. There was no support for the original hypothesis. The addition of the Open Court reading curriculum did not improve students' learning of alphabetic principle.

CHAPTER 5

Summary, Conclusions and Recommendations

Introduction

The researcher summarized and discussed the conclusions of the project. Recommendations for future consideration were included.

Summary

Effective learning in the preschool years was imperative to reading acquisition. However, many students in rural community of Wapato, where there was a highly impoverished minority population, did not receive adequate early learning experiences.

In an effort to improve kindergarten readiness skills for these students, the WSD preschool program adopted Open Court reading curriculum as part of an Early Reading First grant. The teachers wondered if the new curriculum was helping to improve important emergent literacy skills like phonemic awareness and alphabetic principle. At the root of the teachers' frustration was the age-old debate of whole language versus phonics instruction. Research revealed that developmentally appropriate practices in preschool included a balance between direct instruction of phonological awareness and alphabet knowledge incorporated into play based learning environments.

To determine the effectiveness of Open Court reading curriculum, the researcher compared pre and post alphabetic principle test data from two cohorts

of convenience sampling selected preschool students. The students in the 2004-2005 classes received literacy embedded play-based instruction through teacher designed thematic units. The students in the classes of 2006-2007 received similar thematic unit instruction with the addition of Open Court reading curriculum. In this experimental design, self referenced improvement scores were analyzed using a t test for independent variables. No significant difference was found in the students' alphabetic principle knowledge. Therefore, the original hypothesis, preschool student's letter / sound recognition improved as a result of using Open Court reading curriculum, was not supported.

Conclusions

Based on statistical analysis of research data, the researcher found no significant difference between the two groups of students in this study. The null hypothesis was accepted. No support was found for the hypothesis. Open Court reading curriculum had no significant effect on the letter knowledge of students enrolled in the WSD preschool program. This conclusion concurred with the research on developmentally appropriate practices for young students. Instruction needed to be eclectic in nature, a balance of direct instruction and play based learning.

Recommendations

The researcher recommends that future studies of this nature incorporate more than one aspect of reading acquisition. This study analyzed only alphabetic

principle, an important but not exclusive component of emergent literacy. Future analysis should include measures for phonological awareness, concepts of print, and comprehension to name only a few. Likewise, future studies should include a larger random sampling of participants to better ensure generalizibility to the greater population. Finally, the study should span a longer duration of time, perhaps following students through successful complete reading acquisition.

APPENDIX 1

LITERACY LINKS

Student Alphabet Chart

A	E	X	M	Q	U	G
B	F	J	T	R	V	N
C	Y	K	O	I	W	D
L	S	P	Z	H		
a	e	x	m	q	u	g
b	f	j	t	r	v	n
c	y	k	o	i	w	d
l	s	p	z	h	a	g

Guided Reading: Making It Work Scholastic Professional Books

Figure 4–6. Student Alphabet Chart

APPENDIX 2

Alphabet Recognition Sheet

Name_____ Date_____

✔ = correct response for letter name, letter sound or word
• = incorrect response

	letter	sound	word		letter	sound	word
A				a			
E				e			
X				x			
M				m			
Q				q			
U				u			
G				g			
B				b			
F				f			
J				j			
T				t			
R				r			
V				v			
N				n			
C				c			
Y				y			
K				k			
O				o			
I				i			
W				w			
D				d			
L				l			
S				s			
P				p			
Z				z			
H				h			
				a			
				g			
Total Correct: _____				Total Correct: _____			
Comments:							

Adapted from *An Observation Survey* by Marie Clay

Guided Reading: Making It Work Scholastic Professional Books

Figure 4–5. Alphabet Recognition Sheet

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