

**Reading Rocks Junior: A Mixed-Methodological Study of the Efficacy and
Accessibility of an Emergent Literacy Intervention**

by

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Abstract

This thesis explored early literacy development in young vulnerable readers. More specifically, this thesis examined an emergent literacy program called Reading Rocks Junior offered by the Learning Disabilities Association of Niagara Region to children four- to six-years of age living in low socioeconomic status communities. Three methodologies were combined to create a rich and complete picture of an effective and accessible literacy program. First of all, a description of the Reading Rocks Junior program is outlined. Secondly, quantitative data that was collected pre- and post-program was analyzed to demonstrate achievement gains made as a result of participating in the program. Finally, qualitative interviews with the program coordinator, the convener of the agency that funded Reading Rocks Junior and three parents whose children participated in the program were analyzed to determine the contextual factors that make Reading Rocks Junior a success.

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CHAPTER 1: INTRODUCTION

Over the past three decades research has clearly elucidated the predictive relationship between a number of component literacy skills and proficient reading (Adams, 1990; Philips, Clancy-Menchetti, & Lonigan, 2008). For example, children who experience difficulty with letter recognition, letter-sound association, and/or phonological awareness are particularly at-risk for later reading failure (Snow, Burns & Griffin, 1998). This may be due to the hierarchical relationship between lower order emergent literacy skills such as letter recognition or phonological awareness and higher order reading skills such as decoding, fluency and comprehension. Assuming this relationship, strong emergent literacy skills set the foundation for reading-based academic achievement as children begin schooling. However, research has found that approximately 20% of young children enter the education system lagging behind their typically developing peers in their emergent literacy skills (Bender, 2008).

Historically, it was often assumed that *schools* built strong readers. However, more recently, stakeholders concerned with children's literacy have realized that the discrepancy between good and poor readers may emerge prior to formal education. This idea has been seen in project such as "The 90% Reading Goal" where a region-wide initiative in Washington state found that only 50% of children entering kindergarten were scoring at age-appropriate levels in literacy and language skills (Fielding, Kerr, & Rosier, 2007). Furthermore, the project found that approximately half of the children entering kindergarten were already two or three years behind average kindergarten readers on the first day of school. The conclusions drawn from projects such as the 90% Reading Goal were that schools did not create the achievement gap seen in kindergarten but rather, "the

children came with it”. Following such studies, it becomes important to explore the “pre-school” environment to clarify the factors that both support strong pre-readers and hinder disadvantaged pre-readers.

The developmental period occurring from birth to age six when pre-school literacy develops has been termed emergent literacy. Emergent literacy has been proposed to define this period when children are in the process of becoming literate (Teale & Sulzby, 1986). Emergent literacy includes various skills that set the foundation for the development of more complex reading skills including print awareness, letter-sound understanding, and phonological awareness (Teale and Sulzby, 1986).

Print awareness may be conceptualized as a child’s emerging ability to understand the form and function of written language (Justice & Ezell, 2001). This includes understanding the left-to-right and top-to-bottom directionality of print, as well as understanding and recognizing letters, words and symbols as they appear in written language. Letter-sound understanding refers to a child’s ability to recognize the graphic symbols, the name, and the sound(s) associated with each letter (Foulin, 2005). The final skill within emergent literacy is phonological awareness or the ability to focus on and manipulate sounds in spoken language (Castles & Coltheart, 2004; National Reading Panel, 2000). Phonological awareness is comprised of various skills beginning with basic speech unit sounds—phonemes—as well as larger units such as oral rhyming and alliteration and working toward the ability to manipulate sounds in words through blending and segmenting. Research indicates that achievements in emergent literacy skills during preschool and kindergarten are associated with later reading success (Adams, 1990; Snow, Burns & Griffin, 1998). Therefore, emergent literacy programs are

important as they allow for early identification and intervention for those at-risk for reading failure.

In addition to understanding the importance of emergent literacy it is also necessary to understand the contextual factors associated with the discrepancy between strong and vulnerable emergent readers. One such factor is the home-based literacy environment during the pre-school years. Research has suggested that children who have meaningful pre-school literacy experiences such as daily-shared reading are at a significant advantage when compared to children with limited experience with language and print (Pullen & Justice, 2003). More specifically, children who have fewer literacy-rich experiences (Evans, 2004; Lee & Burkam, 2002; Rothstein, 2004), or have fewer books and educational toys in the home (Bradley et al., 2001; Brooks-Gunn & Duncan, 1997; Lee & Burkam, 2002; Whitehurst & Lonigan, 1998) tend to be at increased risk for language and literacy deficiencies. As such, children who enter kindergarten without literacy-rich experiences, particularly those from low socioeconomic status backgrounds, are at increased risk for future reading difficulties (Adams, 1990; Hart & Risley, 1995; Whitehurst & Lonigan, 1998).

Another compounding contextual factor that contributes to the risk status of young vulnerable readers is socioeconomic status. Socioeconomic status (SES) has been acknowledged in the literature as a unique contributor to academic achievement (Duncan & Brooks-Gunn, 2000; Duncan & Raudenbush, 1999; Duncan, Yeung, Brooks-Gunn, & Smith, 1998; Hart & Risley, 1995; Raudenbush, 2004). Research consistently demonstrates that children from lower-SES homes begin school at a significant disadvantage when compared to their higher-SES peers in regards to their language and

literacy skills (Entwisle & Alexander, 1993; Hart & Risley, 1995). As such, children from low SES families are at particular risk for deficient emergent literacy skills and future reading difficulties. Unfortunately, many emergent literacy programs that are said to target this population of at-risk children are not accessible to low-SES families. In particular, program developers have ignored the necessity of providing programs within the communities of those who require the support, at little to no cost, and in collaboration with neighbourhood schools.

In general, supporting children at-risk for reading difficulties is of growing concern in the field of education. Where the issue was once how to remediate reading failure, the focus has more recently shifted to preventing it altogether (Torgesen, 2004). To do so, many in the field are calling for screening procedures to identify those at-risk earlier—to prevent reading issues before they become problematic. Shaywitz & Shaywitz (2004) explain that children who receive support when they are two or three years behind their peers have a diminished likelihood of ever catching up. They also indicate that reading remediation after a two year discrepancy is very costly, time consuming and ultimately ineffective. Programs that identify and support children in kindergarten when the discrepancy is minimal are not only more cost efficient but are more effective in reducing the reading gap between struggling and proficient readers (Fielding, Kerr, & Rosier, 2007).

The primary goal of this study was to design and test the efficacy of an emergent literacy program, Reading Rocks Junior that provides comprehensive support for the development of preliteracy skills in children four-to-six years of age who have been identified as being at-risk for reading failure. The current study also considered important

contextual variables associated with emergent literacy including factors associated with low socioeconomic status such as home-based literacy environments, program affordability, and accessibility. This study also represents a partnership between a number of stakeholders concerned with supporting young vulnerable readers. Specifically, the study brings together researchers from Brock University, a non-profit organization in the Learning Disabilities Association of Niagara Region, and a regional initiative in the Niagara Prosperity Initiative. The data collected in this study represents these three different stakeholders.

In general, it was hypothesized that the empirical data collected in this study would show that as a result of participating in the Reading Rocks Junior program, children would demonstrate significant increases in emergent literacy scores. Furthermore, due to the structure and delivery of the Reading Rocks Junior program it was hypothesized that children's emergent literacy skills would not only improve over the course of the program, but would improve to a point whereby their post-test scores would be within achievement levels commensurate with typically achieving children of the same age. In addition to understanding the empirical validity of the Reading Rocks Junior program, it was also essential to understand the barriers that exist to accessing various programs for families from low SES communities, and how these barriers could be alleviated to provide accessible support. Following this, it was hypothesized that caregivers could offer invaluable insight into the importance of providing interventions within low SES communities, at no-cost, and through a community/school partnership. As such, qualitative interview-based data was collected from three sources – policy makers, program developers, and parents. It was hypothesized that complementing the

empirical data with rich qualitative data would provide a more complete understanding of the efficacy and accessibility of the Reading Rocks Junior program.

CHAPTER TWO: REVIEW OF THE LITERATURE

Literacy Defined

One of the most essential and valuable skills in our society is the ability to read. Strong literacy skills set the foundation for academic achievement and success as children begin schooling. While many children acquire the skills of reading without much difficulty, approximately 20% of young children enter the education system lagging behind their typically developing peers (Bender, 2008).

Traditionally, it was believed that children did not have the mental capacity to acquire the complex prerequisite skills needed for reading until formal schooling began (Teale & Sulzby, 1986). As such, children were often not taught how to read until they were six years of age, and entering the classroom. However in the 1920's, the understanding of literacy acquisition began to shift and educators started looking more closely at the early years of childhood as a time of reading preparation (Teale & Sulzby, 1986). This period, referred to as *reading readiness*, became an important concept from the 1920's through the 1960's.

Research on *reading readiness* investigated children who began school with the ability to read intact. One of the seminal researchers who studied *reading readiness* was Dolores Durkin. Durkin (1964) conducted two studies examining children who could read prior to entering grade one. In the first study (1958) Durkin investigated all of the children entering first grade in the public education system in Oakland California. Following individual testing, forty-nine children were identified as having some ability to read. These children's reading abilities were tested over the course of their elementary schooling. A control group of 201 children who began school at the same time but were

unable to read before their first day of school, were introduced to the study two years later. Durkin found that the most significant predictor of group differences was the amount of time that parents spent reading to their children. In her second study, Durkin (1961) explored early reading abilities in 4465 children enrolled in New York public schools. Durkin assessed all children to screen and identify those who demonstrated early reading ability. One hundred and eighty children were identified as early readers and tested further on word recognition and paragraph reading abilities. The early readers were then compared with a sample of first grade students who began school with no prior reading ability, but were comparable in their intelligence. Durkin found that the primary difference between these two groups was parental engagement during the preschool years. Both studies revealed that the amount that parents read to their children before school entry was predictive of later reading ability. The parents of the non-readers reported that they felt inadequate in teaching their children to read, and that literacy instruction should be done by trained professionals. Overall, Durkin discovered the importance of supporting parents to ensure the formation of *reading readiness* skills prior to formal schooling. This period, from birth through age six, was referred to as the period of emergent literacy.

Emergent literacy

Emergent literacy may be defined as the developmental period from birth through age six (Pullen, & Justice, 2003; Teale & Sulzby, 1986). As there has been an increasing focus on literacy among young children, many researchers have agreed that there is not a specific point in life that literacy begins, but that at any point, children are *in the process of becoming literate* (Senechal et al., 2001; Snow, Burns & Griffin, 1998; Teale &

Sulzby, 1986). Emergent literacy is a relatively recent approach to understanding the development of reading stemming from the recognition that the development of oral language, reading, and writing develop interdependently in the years prior to formal reading and writing instruction (Cabell, Justice, Konold, & McGuinty, 2010). During the past two decades, the acceptance of the emergent literacy perspective by researchers has made an important contribution to our understanding of literacy development (Whitehurst & Lonigan, 1998). A number of studies centered on emergent literacy have provided evidence that suggests that children are engaging with literacy in a variety of ways during the early years (Hay & Fielding-Barnsley, 2009). In general, while preschoolers are not formally reading, they are acquiring the necessary skills to become proficient readers.

The Importance of Emergent Literacy

An important idea around emergent literacy is that not only is preschool an important developmental period; it is also a time when individual differences in emergent literacy begin to become apparent. As such, assessing emergent literacy skills provides stakeholders with an opportunity to identify and prevent deficits in literacy acquisition (de Lemos, 2005; Lonigan, 2006). In essence, the developmental period of emergent literacy is a time to consider early identification and prevention programs aimed at supporting vulnerable children. Research has elucidated that children's emergent literacy achievement in preschool and kindergarten are significant predictors of their later formal reading success (Adams, 1990; Snow et al., 1998). Specifically, emergent literacy skills that are most predictive of later reading include letter-sound understanding, phonological, and print awareness (Snow et al., 1998). For example, in a retrospective study, Olofsson & Niedersoe (1999) examined 205 children in grade four to explore whether early

language development and kindergarten phonological awareness were predictive of later reading problems. All participating children had available speech and language achievement records from three years of age, as well as language comprehension and linguistic awareness data from kindergarten. Olofsson & Niedersoe (1999) also examined word decoding assessments in grade two and grade three. Results indicated that there were statistically significant relationships between preschool language variables and later grade-level decoding and sentence reading ability. Furthermore, there were significant relationships between early language variables and word-level decoding abilities several years later. Of primary importance, Olofsson & Niedersoe (1999) demonstrated the significance of examining various component skills of emergent literacy and their relationship to later reading ability.

Component Skills of Emergent Literacy

Emergent literacy is often hypothesized to consist of three essential components; letter-sound understanding, phonological awareness, and print awareness (Adams, 1990; Snow et al., 1998; Teale & Sulzby, 1986). Each skill-set has a unique and predictive ability of later reading proficiency.

Letter-Sound Understanding

Letter-sound understanding consists of two skills: letter recognition and letter-sound association. The ability to associate letter names with lowercase and uppercase graphemes is referred to as letter-recognition, and research consistently demonstrates that it is the most predictive pre-reading skill on later reading achievement (Catts, Fey, Zhang, & Tomblin, 2001; Chall, 1967). For example, Stevenson & Newman (1986) assessed the emergent literacy skills of 255 children in kindergarten and followed them through grades

1, 2, 3, 5, and 10 to determine whether early literacy skills had the ability to predict academic achievement throughout education. They found that the number of letters known at kindergarten entry correlated .52 with reading achievement in high school (Stevenson, & Newman, 1986): indicating the importance of letter instruction prior to kindergarten entry.

Letter-sound association refers to a child's ability to associate the graphic symbols with the sound(s) each letter makes (Foulin, 2005). Letter recognition is crucial in developing the ability to link letters and groups of letters with their associated sound(s). Research elucidates the predictive ability of early letter-name recognition and letter-sound understanding on later spelling abilities (Pennington, & Lefly, 2001) and enduring reading achievement throughout elementary school (Blatchford and Plewis, 1990; Juel, 1991). Catts, Fey, Zhang, & Tomblin (2001) examined the relationship between letter identification in kindergarten and later reading achievement in grade two. A battery of assessments that measured emergent literacy skills such as letter identification and phonological awareness were given to 604 children in kindergarten. Participating children were followed until grade two when they were administered assessments of reading and reading comprehension. Five emergent literacy skills were identified as having predictive ability for reading difficulties in grade two; sentence imitation, deletion task, letter identification, rapid naming and mother education (Catts et al., 2001). However, the most statistically significant predictor of later reading difficulties in grade two was a child's ability to identify their letters and letter sounds in kindergarten.

Phonological Awareness

Phonological awareness refers to one's degree of sensitivity to the sound structure of oral language (Anthony & Francis, 2005). Examples of different phonological awareness skills include blending sounds together, separating (segmenting) words into their constituent sounds, recombining sounds of words, and judging whether two words have some sounds in common. Oral language plays an important role in the development of phonological awareness, as early forms begin to develop prior to any formal reading instruction (Anthony & Lonigan, 2004). However, literacy instruction and exploration of written language is very important to understand and develop more complex forms of phonological awareness, including phoneme awareness. Phonological awareness is a necessary prerequisite to successful reading as it enables an understanding of how words in our language are represented in print. When children enter school, they begin the reading process by learning about the alphabetic principle and the way that words are represented in print at the level of phonemes (Torgesen & Matheson, 2000). Therefore, children must master phonological principles in order to become proficient readers, and those who do not often become poor readers (Torgesen, 1997).

Plenty of research has investigated the development and predictive ability of early phonological capabilities (Olofsson, & Niedersoe, 1999; Torgesen, Wagner, & Rashotte, 1994). Anthony & Lonigan (2004) found highly stable differences from late preschool through the primary grades. Research has indicated that phonological awareness is significantly predictive of later reading, and furthermore, it has been suggested that problems forming and applying phonological awareness capabilities are at the core of most children's reading difficulties (Philips, Clancy-Menchetti, & Lonigan, 2008).

Essentially, most children who have difficulty detecting or manipulating sounds in oral language will struggle with learning to read (Anthony & Francis, 2005).

For instance, in a seminal study of emergent literacy, Lonigan, Burgess & Anthony (2000) examined the joint and unique predictive significance of emergent literacy skills for post-emergent literacy skills and formal reading in two samples of preschoolers. Results of this study indicated that children's developmental origins of reading skills in kindergarten and grade one can be found in the preschool period. Emergent literacy skills (i.e. phonological sensitivity and letter knowledge) present during preschool reflect highly stable individual differences and have substantial unique predictive relations with later reading abilities. Together, phonological sensitivity and letter knowledge accounted for 54% of the variance in kindergarten and first-grade children's decoding abilities. These findings highlight the developmental continuity between emergent literacy and later reading from the early preschool period to the early elementary school period.

Print Awareness

Print awareness may be conceptualized as a child's emerging ability to understand the form and function of written language (Justice & Ezell, 2001). This includes understanding the left-to-right and top-to-bottom directionality of print, as well as understanding and recognizing letters, words and symbols as they appear in written language. Print awareness is a foundational skill that gradually develops in the preschool years, and is an excellent predictor of later reading achievement (Justice & Ezell, 2001).

A child's awareness and sensitivity to print is an important beginning step in the early reading process (Snow et al., 1998). Research has consistently demonstrated the importance of children's print knowledge. Adams (1990) suggests that while the

acknowledgement of pictures in books is useful, it is the familiarity with letters that is critical to reading success. Young children from the time of birth begin to gain print awareness through the exposure to print concepts in their environment (Snow et al., 1998). Justice and Ezell (2001) studied young children's print awareness through a home-based parent intervention program. Twenty-eight parents and their four-year old children participated in the study. Parents were randomly assigned to an experimental and control group who both received training in the use of print-referencing behaviours that they could use at home. However, the control group received only reading materials and was asked to read the books in the same manner as usual. Justice and Ezell (2001) concluded that the children in the experimental group outperformed the children in the control group on four of the five emergent literacy subtests, the exception being alphabet knowledge. Significant differences were found between the groups on tests of words in print, print concepts and word segmentation: indicating that instruction in specific print-reference techniques is very beneficial for promoting print awareness in young children (Justice & Ezell, 2001).

The importance of these early skills can hardly be overstated. The research clearly shows that incidental instruction of basic literacy skills, while surely beneficial, is not sufficient. This holds especially true for populations of vulnerable children, including English language learners, children with cognitive processing problems and children from low socioeconomic status homes.

Vulnerable Children

Although most children learn to read without unusual problems, there are a number of populations that are particularly at-risk for academic difficulties and require

additional support to ensure a trajectory to proficient reading and educational success. Whether the reason for being at-risk is due to learning English as a second language, cognitive processing problems or low socioeconomic status, research shows that vulnerable children are less likely to have exposure to literacy-rich environments than more fortunate students (Entwisle & Alexander, 1993). Country-wide data from the Early Development Instrument shows that one in four children arrive at kindergarten with vulnerabilities (Offord Centre for Child Studies, 2008). In a study on the Early Development Instrument, Janus & Duku (2007) found that coming from a family with low income contributes strongly to the vulnerability of children at school entry. As such, it is important to examine socioeconomic status as an important variable in emergent literacy interventions.

Socioeconomic Status

Socioeconomic status (SES) has been acknowledged in the literature as a unique contributor to academic achievement (Duncan & Brooks-Gunn, 2000; Duncan & Raudenbush, 1999; Duncan, Yeung, Brooks-Gunn, & Smith, 1998; Hart & Risley, 1995; Raudenbush, 2004). Research consistently demonstrates that children from lower-SES homes begin school at a significant disadvantage when compared to their higher-SES peers in regards to their language and literacy skills (Entwisle & Alexander, 1993; Hart & Risley, 1995). The reasons for this relative disadvantage are complex, but the most important contributing factor may be that students from low-SES backgrounds have less-developed oral language skills than students from middle-class backgrounds (Beck & McKeown, 2007; Hay & Fielding-Barnsley, 2009). This could certainly stem from the fact that children from lower-SES families tend to have fewer literacy-rich experiences

(Evans, 2004; Kozol, 1991; Lee & Burkam, 2002; Rothstein, 2004), have fewer books and educational toys in the home (Bradley et al., 2001; Brooks-Gunn & Duncan, 1997; Evans, 2004; Lee & Burkam, 2002; Vernon-Feagans, Hammer, Miccio, & Manlove, 2002; Whitehurst & Lonigan, 1998), and attend lower-quality preschools (McCoach, O'Connell, Reis, & Levitt, 2006).

Parents' educational attitudes and expectations also differ with SES (Battin-Pearson et al. 2000), as do parents' educational behaviors such as early reading and attention to language (NRP, 2000). Whitehurst & Lonigan (1998) have demonstrated links between early shared reading, emergent literacy development and later academic achievement. Supporting this relationship, Adams (1990) found that children from low-SES families may receive, on average, a total of only 25 hours of one-on-one picture book reading by school entry, compared to 1000 to 1700 hours for middle-class children.

Students' socioeconomic background not only influences early academic outcomes but it also influences the sustainability of average and above-average achievement throughout school (Duncan et al., 1998; Wyner, Bridgeland & DiIulio, 2007). On national literacy assessments, children raised in lower-SES homes continue to score lower than children raised in homes that do not qualify for free lunch programs (Lee, Griggs, & Donahue, 2007). Furthermore, students who are not at grade level upon completion of first grade have dramatically lower chances of being at or above grade level throughout elementary school (Spira, Bracken, & Fischel, 2005; Wyner et al., 2007). Taken together, these factors may contribute to the high incidence of failure and delayed literacy skill acquisition among elementary and secondary school children living in lower-SES communities. This result may be confounded by the fact that children from

low-SES communities often attend schools with fewer resources (Connor, Son, Hindman, & Morrison, 2005) and have less experienced teachers (Haycock, 2000).

Molfese, Modglin and Molfese (2003) studied the influence of environmental factors on intelligence scores by exploring children's preschool period environment, their primary-grade reading level, and the links to performance on reading achievement tests in grade four. A total of 113 participating children were assessed at age three, eight and ten on reading achievement tests and the children's environments (i.e. socioeconomic status and Home Observation for Measurement of the Environment (HOME)). Results showed that for the poor reading group, both SES and the HOME measures were significant predictors of reading achievement scores at eight years of age (Molfese et al., 2003). In this study, participating children were from two lower-income communities, providing evidence that SES plays a role in children's reading difficulties.

Research in the field of literacy development has suggested that emergent literacy skills set the foundation for skilled and proficient reading. Furthermore, it is suggested that children's emergent literacy achievement in preschool and kindergarten are significant predictors of their later formal reading success (Adams, 1990; Snow, Burns & Griffin, 1998). As such, it is possible to assess children's emergent skill level and determine whether or not they will require extra support to become commensurate with typically achieving children of the same age.

Effective Intervention

In general, research over the past two decades has suggested that children at-risk for reading difficulties can be identified and supported before formal schooling begins (Catts et al., 2001). Specifically, it is the developmental period of emergent literacy that

is critical in supporting vulnerable learners. There are three particularly effective principles for supporting students at educational risk: the use of a combination of embedded and explicit learning experiences; the development of a systematic learning plan; and the use of small-group and one-on-one learning contexts (Pullen, & Justice, 2003; Justice & Kaderavak, 2004; Moore & Hammond, 2011). Furthermore, effective programs should provide direct instruction in phonological awareness, print awareness, vocabulary and phonics principles through developmentally appropriate activities. Finally and particularly for children from low-socioeconomic status backgrounds, is the inclusion of shared storybook reading. The following sections will outline each of the abovementioned elements of effective interventions.

An Embedded and Explicit Approach

Justice and Kaderavek (2004) have argued that effective early intervention programs for students at-risk need to encompass a combination of embedded and explicit learning experiences. Embedded learning experiences provide children with opportunities to engage in meaningful and purposeful literacy practices. Explicit learning experiences allow teachers to plan for intensive and focused learning of crucial literacy skills. When instruction is embedded and explicit children are able to scaffold upon early literacy concepts to maximize student learning and potential (Justice & Kaderavek, 2004).

Systematic Instruction

A systematic approach to early literacy instruction includes a clearly identified and sequenced plan. Using a systematic approach is crucial to ensure that instructional activities are of optimal efficiency (Moore & Hammond, 2011). Systematic and intensive learning experiences are particularly beneficial for students who are at highest risk for

reading failure (Moore & Hammond, 2011; Simmons et al., 2007). Systematic approaches to literacy instruction have been recommended by the Report of the National Reading Panel (2000), by the Independent review of the teaching of early reading (Rose, 2006) and by the report of the National Inquiry into the Teaching of Literacy (2005).

Small Group and One-on-One Instruction

Another important consideration is the size of the instructional group. Previous research indicates that small-group instruction is more effective than individual and whole class instruction (Ehri et al., 2001) and is more efficient in terms of time and resources (Hatcher et al., 2006). Vaughn, Hughes, Moody and Elbaum (2001) argued that, in general, smaller groups provide a better context for effective instruction than large groups. They suggest that small-group instruction is beneficial for both students with learning disabilities and typically developing children. Small group instruction not only provides opportunities for multiple interactions between teacher and students but allows for meaningful interactions between students. Vaughn et al. (2001) suggest that the ideal size for student groupings is three-six children. Research on at-risk populations also advocates for one-on-one instruction. It is suggested that while small group instruction is beneficial, some children require one-on-one support to master early literacy skills. For example, in a meta-analysis of individual instruction, Elbaum, Vaughn, Hughes and Moody (2000) found that on average, students who received individual instruction performed two standard deviations higher than comparison groups on standardized measures. However, when teachers implement well-designed small group interventions, the academic benefit can be the same.

Shared Storybook Reading

Shared storybook reading (SSR) is the interaction that occurs between a child and an adult when they share a storybook (Ezell and Justice, 2005). The relation between frequency of SSR and reading achievement is largely mediated through children's language and emergent literacy abilities (Senechal et al., 1998; Whitehurst et al., 1994). Interactive storybook reading, where the teacher engages in open-ended questioning throughout the reading, is particularly beneficial for vocabulary enhancement in preschoolers (Beck & McKeown, 2001; Whitehurst et al., 1994). Senechal et al. (1998) argued that SSR activities would have even more impact if explicit instruction on print-related skills was incorporated. Ezell and Justice (2005) convincingly argued that, unlike socioeconomic background, the amount of SSR children receive can be easily influenced by reading programs in educational and home settings. However, low income families often have fewer literacy resources and books in the home, and cannot afford or access emergent literacy programming (Neuman & Celano, 2001).

While the abovementioned elements are suggested for effective early intervention, what is largely absent is the importance of implementing emergent literacy programs within low-SES communities. Many interventions that are said to target at-risk populations are inaccessible to the families who require the support. Therefore, in order to create a program that is beneficial for at-risk children, programs need to be accessible.

Accessibility

There are numerous interventions that have been designed and implemented to support the development of emergent literacy skills. A subset of these programs have been created to support children from low socioeconomic status backgrounds who have been identified as particularly at-risk for reading difficulties. Many of these programs

have been found to be effective in increasing letter recognition, letter-sound association, phonological awareness and oral language capabilities. However, it may be that those who attend these programs and those who require the additional support most are two separate populations of children. This discrepancy could be due to a number of factors that limit the accessibility of programs to families in financial distress: including the cost, location, and inclusion of community partnerships.

Program cost

In 1989, the Canadian government made a pledge to eradicate poverty by the year 2000 (Conference Board of Canada, 2009; Campaign 2000, 2009). However, the president and CEO of UNICEF Canada, David Morley recently stated that “there has been no change in 15 years in Canada, even in strong economic times” (UNICEF Report, 2012). Recent statistics (2007) indicate about 1 in 10 children live in poverty in Canada (Campaign 2000, 2009), often resulting in increased risk of learning difficulties for children, underachievement at school, lower levels of educational attainment, decreased accessibility of services and limited involvement and engagement in community life (Best Start Resource Centre, 2010; Conference Board of Canada, 2009; Community Social Planning Council of Toronto et al., 2009).

It is clear that children from low SES backgrounds require additional support, however, many emergent literacy programs are offered to these families at a cost, one that decreases the likelihood of providing the necessary help. The Early Years Study suggested that for programs to reach the target population of families, they need to be affordable, unfortunately, many programs offered in Canada are provided at a premium (McCain, Mustard, & McCuaig, 2011). A study by Best Start (2010) interviewed low-

income parents on what services made a big impact on their families. Overall, parents appreciated the availability of a variety of free and low-cost supports and services. One parent stated “I started going there [to service] a year ago, for free, which makes a big difference for me. There wasn’t the barrier of having to pay.” (p. 46). Unfortunately, the barrier of cost is one that stands in the way of many low-SES families receiving services and supports. Therefore, educators and stakeholders who are interested in programs that will decrease the emergent literacy gap between children from low-SES and high-SES backgrounds should consider subsidizing their programs. It is believed that offering programs at little to no cost will eliminate the financial burden and ensure that those families who require additional literacy support will be able to receive it.

One specific barrier to offering programs at little to no cost is a lack of funding. Lack of ongoing core funding impacts an organization’s ability to provide responsive, stable programming (Best Start Center Resource, 2010). When funding is geared to short-term projects or the funding does not adequately meet the true cost of providing the program, then organizations are unable to implement the program without charging some cost for attendance.

Program location

To ensure that families can access early literacy programming, location must be a fundamental consideration. Increasingly, schools are being used as program sites because it is a logical access point for those who live in the community (Dryfoos, 1994, 1995). As such, it is important for community organizations to develop strong relationships with schools and vice versa to meet the needs of struggling students (Adelman & Taylor,

1997). Stationing community programs within schools allows easier access for students and families—especially in areas with underserved and hard-to-reach populations.

Not only is it more accessible for families when programs are implemented within schools, but more importantly, programs should be situated within low-SES communities. Research clearly elucidates the relationship between low-SES and reading difficulties, however, programs are often implemented in locations where public transportation is not available or walking is not an option. Transportation is vital to access the services that are available to support families with young children living in low-SES families. Outside of urban areas, transportation might be too expensive, options may be limited, or unavailable altogether (Best Start Resource Center, 2010). This is a particular issue when programs and services are implemented exclusively in one school. Services and programs should grow from an understanding of the needs of children and families in the contexts in which they live and not from the organizational advantages of an established agency or institution (Chaskin & Richman, 1992).

Various initiatives set out to link the school and community in prevention programs for struggling students, and are split into two main categories: school-linked and school-based services (Adelman & Taylor, 1997). School-linked services indicate off-campus activity with formal connections to a school site, while school-linked refers to programs that are carried out on a school campus (Adelman & Taylor, 1997). The movement toward school-linked services is aimed at enhancing access to services, coordinating resources, and increasing efficacy. This is often done by creating community programs and implementing some of them on school sites. While this does

promote program accessibility, it downplays the need to weave community resources and school resources together to meet the needs of at-risk students.

Integration of community agencies and the school boards

There are a number of interventions that are said to be effective in supporting struggling students: some of which are offered within the classroom, and some within various community agencies. This divide between schools and community create obstacles to student learning, and as such various system reforms have been recommended to address these barriers. Although educators and school boards are not expected to operate programs outside of school hours, it is commonplace for educators to promote services to support learning-based needs outside of the classroom. As such, an integration of school and community agencies would decrease the barriers and provide a consistent environment for student learning. Adelman & Taylor (1997) suggest that there are three fundamental components to creating a comprehensive approach to school and community reform. First of all, there needs to be a weaving together of what is available at school, second, it needs to be expanded by integrating school and community resources, and third, access to community programs and services need to be enhanced by linking as many as possible to programs provided by the school. By combining school and community initiatives, researchers and educators can create a platform to formulate and change policy.

It is unlikely that most attempts at implementing programs will survive unless there is long-term planning and adjustment of the program model to become integrated with other programming already ongoing in schools (Adelman & Taylor, 1997). It has been suggested that the focus of interagency models should shift from cooperative

arrangements among agencies to collaborations focused on joint service delivery between schools and community programs (Melaville & Blank, 1991). School-community collaboration will provide a promising direction for emergent literacy interventions. What the school has that a community organization might not, is direct access to more children than any other institution in the community, an understanding of their individual needs, and a central location with literacy-rich environments. What the community agency might provide are the resources, funding, empirically-supported literacy programs, and program facilitators and volunteers. As such, this relationship between school and community is mutually beneficial for all parties—particularly those families who require the support and live in the neighbourhood. As suggested from previous research, providing multiple access points that span the district and provide options for families is an important aspect of program design and implementation.

Overall, the current state-of-the-art indicates that children from low socioeconomic status communities are particularly vulnerable to deficits in emergent literacy skills, and subsequently, future reading difficulties. Compounding this issue is the fact that many emergent literacy interventions are inaccessible to the families they seek to support. As such, it is important to consider effective emergent literacy programs within the context they are provided in. An important element to emergent literacy programs is implementing them within low socioeconomic status communities. Literacy programs that are offered to families within their neighbourhood schools, at no-cost, and offered through a community/school partnership will be more accessible and more effective than those that do not. A final consideration is whether potential gains achieved by literacy programs are within reading levels of typically achieving children of the same

age regardless of socioeconomic status. The current thesis aims to address all of these issues.

The Present Study

The current thesis study examined the efficacy of an emergent literacy program designed to enhance foundational literacy skills for young vulnerable children. This thesis poses the following two related research questions:

1. Will children demonstrate significant achievement gains as a result of participating in Reading Rocks Junior?
 - a. Will children demonstrate clinically significant gains, whereby post-test scores are within achievement levels of typically achieving four-to-six year old children?
2. What are the contextual factors that reinforce the potential gains achieved in the program?

In regards to the first research question, it was hypothesized that providing emergent literacy support would increase emergent literacy scores from pre- to post-test for children participating in the Reading Rocks Junior program. Overall, research demonstrates the importance of strong emergent literacy skills for future reading success, and the need to support children who demonstrate deficits in emergent literacy development. The emergent literacy program adopted in this study was aimed at supporting specific emergent literacy skills. It was speculated that by augmenting such skills over the course of the program, achievement gains in emergent literacy skills would be seen in the post-test results obtained immediately after the program's conclusion. Furthermore, it was hypothesized that children's emergent literacy skills would not only

improve over the course of the program, but would improve to a point whereby children's post-test scores were within achievement levels of typically achieving children of the same age. In general, it was thought that providing an emergent literacy intervention for young vulnerable children would be effective in closing the gap that exists between low and high socioeconomic status children's literacy skills.

Numerous emergent literacy interventions exist that enhance vulnerable children's foundational literacy skills. A subset of these studies target children at-risk for reading failure due to low socioeconomic status. However, largely absent from such interventions is the importance of context. As such, it was essential to understand the barriers that exist to accessing various programs for families from low SES communities, and how these barriers can be alleviated to provide accessible support. Following this, it was believed that the program coordinator, the convener of the funding agency, and caregivers could offer invaluable insight into the importance of providing interventions within low SES communities, at no-cost, and through a community/school partnership. In general, it was believed that implementing an emergent literacy intervention within a low SES community would provide support to families who might not attend programs due to the cost and location it was provided in.

CHAPTER THREE: METHODS

Overview

This research study adopted a mixed-methodological approach that focused on examining the effectiveness of the Learning Disabilities Association of Niagara Region's emergent literacy program called Reading Rocks Junior. To achieve the research objectives described in the conclusion of Chapter two, the research protocol included three broad components. The first step was to thoroughly describe the Reading Rocks Junior program. Describing the various components and structure of the program is important as understanding the foundations upon which Reading Rocks Junior was designed is fundamental to the current study.

The second component included a pretest-posttest research protocol to determine whether children made statistically significant increases in their emergent literacy skills. Specifically, all participating children were assessed on the first and last evening of the program, using a standardized battery of emergent literacy assessments. Following this, children's standardized scores were converted to percentile rank scores to determine whether increases in emergent literacy skills were increased to levels commensurate with typically achieving four-to-six year old children.

The third component of the study included a series of interviews with the various stakeholders involved in the design, delivery, and utilization of the Reading Rocks Junior program. Specifically, interviews were conducted with the Program Coordinator from the Learning Disabilities Association of Niagara Region, the Convener of the Niagara Prosperity Initiative, and the parents of children who participated in the Reading Rocks Junior program. The purpose of these interviews was to uncover the contextual factors that contributed to the program's success, specifically the accessibility of the program.

This multi-lens approach to exploring the program enabled a thorough understanding of not only the achievement associated with the program, but also the contextual factors associated with delivering this type of intervention.

Quantitative Component

Participants

A total of 37 four- to six-year old children participated in the current study. The mean age of children was 62 months ($SD = 1.1$) and there were 20 boys and 17 girls. The Learning Disabilities Association of Niagara Region used a standardized screening protocol to determine study eligibility. In general, study eligibility is determined based on school-based emergent literacy achievement and the absence of co-morbid disorders or low-incidence disabilities (i.e. severe intellectual impairments). Children were either referred by their principal, classroom teacher, or self-referred by their primary caregiver. The program was provided in four lower socioeconomic status neighbourhoods in Southern Ontario. Each neighbourhood was identified as high-needs based on the socioeconomic status index measured by the Regional Early Years Neighbourhood Mapping Tool (http://www.becniagara.ca/files/Niagara_Region_Mapping_2009-06-17.pdf). The Reading Rocks Junior program was offered at no cost in eight school locations within the four neighbourhoods. To determine eligibility for the program, caregivers completed a Program Application Form, which was then screened by the LDANR staff. Once their child was deemed eligible for the program, the families were notified of their child's acceptance by the LDANR. Following this process, each child was assigned to a location that was most easily accessible to the participating families.

Psychoeducational Assessments

The psychoeducational assessments used in this study were adopted based on their theoretical underpinnings associated with the concept of emergent literacy. As described in the literature review, emergent literacy is thought to consist of phonological and print awareness as well as letter-sound understanding. The following measures reflect these skills.

(1) *The Test of Preschool Early Literacy (TOPEL)*. The Test of Preschool Early Literacy (Lonigan, et al., 2007) is a theoretically sound instrument for identifying preschoolers who are at risk for literacy problems, therefore, allowing early intervention. The *TOPEL* provides valid and reliable raw and standard scores. The normative sample consists of 842 preschool-aged children (three to five years). The current study used two *TOPEL* subtests – print knowledge (36 items) and phonological awareness (27 items).

a. Print Knowledge. This subtest has 36 items and measures alphabet knowledge and early knowledge about written language conventions and form. The child was asked to identify letters and written words, point to specific letters, names specific letters, identify letters associated with specific sounds, and to say the sounds associated with specific letters. Reliability coefficients for the *TOPEL* Print Knowledge for four-year old children was ($\alpha = .96$)

b. Phonological Awareness. This subtest has 27 items and measures word elision and blending abilities. The child was asked to say a word, and then say what was left after dropping out specific sounds (elision) for the first 12 items. The child was asked to listen to separate sounds and combine them to form a word (blending) for the

remaining 15 items. Reliability coefficients for the TOPEL Print Knowledge for four-year old children was ($\alpha = .88$)

- (2) *Letter Recognition*. Letter recognition clearly taps into something of critical importance in early reading (Juel & Meier, 1999). The major task of letter naming is mapping a visual symbol to a phonetic representation. Letter recognition was assessed using a non-standardized measure, where children were shown all twenty-six lower-case letters and twenty-six upper-case letters of the English alphabet and asked to give the letter name. Students were scored as correct if they responded with the appropriate letter name. The total maximum score for Letter Recognition was 54.
- (3) *Letter Sound Association*. Letter-sound tasks requires associating symbols with discrete sounds, which may be more challenging, because it requires isolating individual phonemes. Research has demonstrated that this skill has a significant causal effect on subsequent development of phonological skills (Juel & Meier, 1999). Letter-sound association was assessed using a non-standardized measure, where children were shown lower-case letters and asked to give the corresponding sound. If students responded with a letter's corresponding soft sound (ex. /c/ as in race), they were prompted to think about another sound. The target sound was the hard consonant or short vowel sound. Students were scored as correct if they responded with the appropriate letter sound. The total maximum score for Letter-Sound Association was 26.

Procedure

Reading Rocks Junior was offered twice a year, once from October - December and again from February – April, from October 2011 – April 2013, for a total of five

program offerings. Data was collected and analyzed from three of these offerings. The program was implemented in two schools in each of the four target neighbourhoods. As such, the program was provided in eight neighbourhood locations for each program session (except for the first session, when the program was offered in only two locations).

The research protocol involved a pre- posttest design where participating children were administered four assessments on the first and last evening of the program. Research assistants were trained in the four emergent literacy assessments before the pre-test administration and again before the post-test administration for each program session.

Qualitative Component

Participants

Three stakeholder groups were interviewed within this study. These included the Reading Rocks Junior program coordinator, the convener of the Niagara Prosperity Initiative, and three parents whose children participated in Reading Rocks Junior. Recruitment for these interviews followed a standard process whereby brief, initial emails were sent to potential interviewees providing information regarding the study. A letter of invitation and consent form for participation in the study were sent to all participating in the interviews.

Interviews

A series of interviews with various stakeholders associated with Reading Rocks Junior were conducted. Interviews, which are based on verbal interchanges between the interviewee and interviewer (Varga-Atkins & O'Brien, 2009), are a valuable methodology as they enable the researcher to gain a deeper understanding of the themes of the daily world from the perspective of the subjects (Tanggaard, 2009). Interviews

provide personal meaning for individuals and as a result, there is no one stable and true story about participants. The main objective of the interviews was to determine the barriers that exist to accessing programs, and the importance of implementing Reading Rocks Junior at no cost, within low socioeconomic status communities.

The interviews were conducted in a conversational and relaxed manner. As the Principal Investigator of this study, I made a conscious effort to monitor and restrict my input so as to avoid dominating the process (Seibold, 2000). Each interview lasted for 30-60 minutes and was either conducted in a quiet room within the school where the program took place, or on the phone. I conducted all interviews and was the only one present during the interview and transcription. The interviews began by explaining to the participants that the audiotapes would be kept in a locked drawer and erased upon completion of the study. I informed the participants that in order to maintain confidentiality and anonymity, pseudonyms would be utilized when transcribing the data. They were also informed that they could withdraw from the study at any point without penalty.

In-depth, semi-structured interviews (Miles & Huberman, 1994) using open ended questions were used in this study in order to ‘respond to the emerging world view of the respondent and to new ideas on the topic’ (Merriam, 1998, p. 74). Each of the parent-interviews began with a series of introductory, ice-breaker questions regarding the child’s general experiences and attitudes towards school and literacy before moving towards more specific questions regarding aspects of the program and its accessibility. Two additional interviews, one with the convener of the Niagara Prosperity Initiative and one with the program coordinator, also followed this format. The general to specific format

was viewed as the ideal format for an interview as it provided participants with an opportunity to become comfortable with the interview process before being asked particular questions regarding the main focus of the interview (Esterberg, 2002). There were roughly 20 questions prepared in advance (see Appendix C) and other questions arose from participants' comments and responses. These questions were prepared out of the necessity to inform educators and program coordinators of the importance of situating programs within low SES neighbourhoods and gaining insight into the elements of the program that contributed to its success. The interviews were audio recorded and transcribed in their entirety for analysis.

The program coordinator was interviewed directly following the program's completion. The interview questions were designed to elicit dialogue on program design, implementation, perceived efficacy, and important factors that contributed to the program's success. Specific questions included: What are some important factors in the design and implementation of Reading Rocks Junior? What does a typical evening in the program look like? And what factors make Reading Rocks Junior a success? These questions were designed to create an understanding of the program's design and implementation and to create a bridge between parent's responses of participating in the program, and the Niagara Prosperity Initiatives responses on a more regional level.

The interview with the convener of the Niagara Prosperity Initiative took place just after he had witnessed one session of the Reading Rocks Junior program. The interview questions were designed to elicit dialogue on the initiative, the regional mandate for supporting low socioeconomic status communities, the importance of providing services in these neighbourhoods, and the reason for funding Reading Rocks

Junior. The specific questions included: Can you speak about the importance of addressing poverty in Niagara? What types of programs are supported by the Niagara Prosperity Initiative? And how do you see programs like Reading Rocks Junior fulfilling the mandate you just described?

The three participating parents were interviewed directly after the 6 weeks of Reading Rocks Junior, which was ideal, as the parents' experiences of the program were current and fresh in their minds. The interview questions were designed to discuss the importance of program accessibility and affordability for their families, and their perceived efficacy of the Reading Rocks Junior program. Specific questions included: What were key elements of the program (specific examples) that contributed to your child's success or appreciation of the program? What are some of the barriers to accessing programs for your family? The Learning Disabilities Association of Niagara Region tries to offer programs within the communities of the families that will access them. Has this helped you? And the Learning Disabilities Association of Niagara Region has a grant that enables them to offer programs at little cost. How important is this to you? These questions were asked to determine the contextual factors that make Reading Rocks Junior a success.

The interviews adhered to Brock University's Research Ethics Board standard protocol. Ethical clearance is attached in appendix A.

CHAPTER FOUR: READING ROCKS JUNIOR PROGRAM DESCRIPTION

Reading Rocks Junior is an emergent literacy program offered by the Learning Disabilities Association of Niagara Region (LDANR). The program was recently designed by the LDANR in an attempt to catch reading disabilities before children fall significantly behind their peers. The initial design and offering of Reading Rocks Junior was also supported by a grant from the Niagara Prosperity Initiative – responding to a region-wide call to support young children in low socioeconomic status neighbourhoods. Following this, between September 2011 and April 2013 Reading Rocks Junior was offered in eight high-needs locations, within neighbourhood schools to children ranging from four- to six-years of age and who were demonstrating difficulties in their emergent literacy development. Each program location was staffed with two program facilitators who were responsible for running the program site and three program volunteers who assisted with the program's implementation. All program facilitators and volunteers underwent two training sessions and an orientation session to prepare them for the program's execution.

Each of the 12 program sessions was designed by the program coordinator of the LDANR. As such, each program location received consistent training, curriculum, and delivery plan. Each site offered the program two nights a week from 6-7pm for a total of six weeks. The first and last night of the program were reserved for emergent literacy assessments to determine the efficacy of the program, and the individual needs of each participating child. Ten children were admitted to each program site, providing a ratio of two children to each adult. One facilitator was trained to work one-on-one with each of

the participating children at their location, while the other program facilitator kept an eye on the program, ran the “book crawl” and worked at one of the emergent literacy stations.

Effective pedagogical approaches

Reading Rocks Junior was designed on the principles that there are three particularly effective strategies for supporting young vulnerable children’s emergent literacy development: instruction should include a combination of embedded and explicit learning experiences, include a systematic and scaffolded learning plan, and use small group and one-on-one learning contexts (Justice & Kaderavek, 2004; Simmons et al., 2007).

Justice and Kaderavek (2004) have argued that effective emergent literacy intervention, especially for children at-risk for reading failure, should include a combination of embedded and explicit learning experiences. Embedded experiences provide children with socially embedded opportunities to engage in meaningful and purposeful literacy practices. Adults are seen as facilitators of children’s learning, as they foster and ground literacy instruction within socially embedded experiences and interactions (Justice & Kaderavek, 2004). Specifically, adults mediate play involving literacy-related artifacts such as lists or signs, interact with contextualized print in the environment, and scaffold exchanges with the oral and written language of storybooks. Reading Rocks Junior included embedded literacy experiences through literacy-enriched play settings that were infused with literacy materials, such as signs, labels, and functional print items. Furthermore, the program took place in a print-rich kindergarten classroom that provided increased exposure to and interactions with written language in the form of storybooks, notes, directions, and schedules. Finally, and perhaps most

importantly for children from low socioeconomic backgrounds, was the inclusion of adult-child shared storybook reading that facilitates vocabulary acquisition, comprehension, and an understanding of print concepts.

While embedded practices target literacy development through informal, naturalistic and contextualized interactions with literacy using a whole language approach, explicit practices emphasize the direct teaching of discrete emergent literacy skills through teacher-led instructional practices that are scheduled on a regular basis (Justice & Kaderavek, 2004). In explicit literacy practices adults take on more control, exposure to literacy is planned with particular goals in mind, and includes the use of materials that direct a child's attention to a particular emergent literacy skill. Unlike embedded approaches that emphasize the meaning of particular literacy behaviours, explicit models take a direct route to enhance basic skills. These instructional opportunities feature adult modeling, demonstration, targeted elicitation, and repeated guided practice (Justice & Kaderavek, 2004). Explicit approaches to emergent literacy development, particularly for those at-risk for reading difficulties, are premised on the notion that instruction should be repetitive, systematic, and scaffolded for difficult concepts to be acquired. Reading Rocks Junior employs a direct and explicit approach to letter recognition, sight word vocabulary, and phonetic principles. Children in the program respond to this technique and when it's combined with the embedded nature of consolidation activities and interactive games, promotes an increase in all emergent literacy skills targeted in the program.

To become a proficient reader, one must understand the relationship between phonemes, syllables and words. As such, interventions should be systematic and engage

learners in part-to-whole word learning, by making connections between acquired skills and skills that children have yet to master. Instruction should be carefully prepared with clearly identified and sequenced teaching points. Research suggests that children who are at highest risk benefit the most from systematic and intensive learning experiences (Simmons et al., 2007). Systematic instruction is most often discussed in regards to phonics; however, it can be applied to all literacy instruction. According to the National Reading Panel (2000)'s report, systematic phonics instruction produces significant benefits for children in kindergarten through grade six and for children at-risk for reading disabilities, regardless of socioeconomic status. Furthermore, research has supported that systematic phonics instruction is most effective during kindergarten and first grade (Snow et al., 1998).

One particular way to provide systematic instruction is through scaffolding. Scaffolded instruction involves finely tuned interactions between teacher and child that provide the child with the necessary support to accomplish a difficult task (Stone, 1989). Scaffolded instruction can be accomplished in two ways. One includes carefully sequencing instruction so that skills build in a deliberate and gradual way – skills are taught systematically and practiced until the skill is mastered (Swanson, 1999). In Reading Rocks Junior, this method of scaffolded instruction is implemented within the small-group stations that target each emergent literacy skill. The second way involves student-teacher dialogue that leads the child to success in a task. This type of scaffolding is a process. It begins with assigning a task (for example, spelling the word slam), and when the child provides an incorrect response (ie. the child spells sam), the teacher then asks a question that leads the child to a strategy or focuses the child's attention on the

first step in the solution process (for example, “you’re right that the word begins with the /s/ sound, but what do you hear after the /s/ sound in the word slam?”), and finally, the child responds with a different answer (for example, I hear the sound /l/). This process continues until the child has successfully completed the task (Foorman & Torgesen, 2001). For Reading Rocks Junior, children are not necessarily spelling, however, this process of teacher-child dialogue and deliberate and gradual instruction is implemented in all aspects of the program.

Another important consideration is the size of the instructional group. While many children can succeed in reading without a direct focus or individual support, children at-risk for reading failure often require one-on-one or small group instruction. Previous research indicates that small-group instruction is more effective than individual and whole class instruction (Ehri et al., 2001) and is more efficient in terms of time and resources (Hatcher et al., 2006). Vaughn, Hughes, Moody and Elbaum (2001) argued that, in general, smaller groups provide a better context for effective instruction than large groups. They suggest that small-group instruction is beneficial for both students with learning disabilities and typically-developing children. Small group instruction not only provides opportunities for multiple interactions between teacher and students but allows for meaningful interactions between students. As such, Reading Rocks Junior provides embedded, explicit and systematic instruction in small group settings that focus on each of the emergent literacy skills targeted in the program. Research suggests that the ideal group size is three-to-six children with one teacher. Thus, Reading Rocks Junior separates the ten attending children into three groups of three or four children, who rotate through the literacy stations together. Another instructional size supported by the

literature on at-risk populations, is the use of one-on-one support. As children in Reading Rocks Junior rotate through the stations, they are taken aside one-by-one to receive individualized support. On the first night of the program, children are assessed on each emergent literacy skill, and research assistants make notes on what areas need support, and strategies that the children employ when they do not know an answer. These notes are given to the program facilitators and children work explicitly on these skills during their one-on-one time.

Shared storybook reading (SSR) is the interaction that occurs between a child and an adult when they share a storybook (Ezell and Justice, 2005). Interactive storybook reading, where the teacher engages in open-ended questioning throughout the reading, is particularly beneficial for vocabulary enhancement in preschoolers (Beck & McKeown, 2001; Whitehurst et al., 1994). Senechal et al. (1998) argued that SSR activities would have even more impact if explicit instruction on print-related skills were incorporated. Reading Rocks Junior incorporates SSR in the form of a daily “book crawl”. Each session has an assigned storybook, with assigned questions related to print knowledge (Where is the title? Which way do we read the book?), prediction questions (What do you think this story will be about? Why do you think that?), alphabet knowledge (Do you see any letters that you know? What other words start with that letter?) and vocabulary building (Does anyone know what this word means? Should we add it to our word wall?). These questioning techniques are supported by the previous literature in the study of SSR (Mol, Bus, de Jong, 2009; Beck & McKeown, 2001), and build skills that are often weak in children from low socioeconomic status backgrounds (Ezell & Justice, 2005).

A typical evening of Reading Rocks Junior

Kyle is a five-year old boy in senior kindergarten who has consistently demonstrated difficulties with his pre-reading skills. His teacher was aware of the Reading Rocks Junior program and recommended the program to Kyle's parents. They applied to the program and were admitted to the fall session of Reading Rocks Junior.

On the first evening, Kyle arrived and was met by the program facilitators, volunteers and research assistants. He made a name tag, and joined the other participating children on the carpet. One-by-one the children were taken next door to be assessed on four emergent literacy skills, letter-recognition, letter-sound association, phonological and print awareness. When Kyle's turn approached, he went next door with a friendly research assistant, Tamara. Kyle was asked to perform many tasks including saying the name of the letter that Tamara pointed to, distinguishing whether moon and more begin with the same sound, and identifying the sound that each letter made. Once he completed each assessment, Kyle returned to the group to play some "getting to know you" games and discussed the program's rules and expected behaviour. Kyle learned that each evening begins with a "book crawl" on the carpet, followed by rotating around stations just like he does in his Kindergarten class, and that on most evenings he will be called to work one-on-one with Sarah in the classroom library. Finally, he learns that he will have the opportunity at the end of each session to share something about himself and what he has learned.

The next time Kyle arrives at Reading Rocks Junior, he remembered to make a name tag and meet the other children and program facilitator, Megan, on the carpet for the days "book crawl". Megan shows the children the cover of the book they will be

reading. Megan has been given instructions on how to run the book crawl and what questions to ask before, during and after the book has been read.

Before starting to read

Ask the children what you are holding in your hand (a book)

Ask the children to point to:

- the title on the cover of the book;
- the cover of the book;
- the back of the book;
- the spine of the book;
- the top and the bottom.

Ask them what we call the person who writes the book (Author). Now name the author of this book

Introduce the book: Alpha Bugs by David A. Carter

Open the book and ask where we should start reading. (What direction do we read? Left to right).

Questions:

- At the beginning ask the children to raise their hand when they hear the first letter in their name called.
- Throughout the book, ask the children if they know what letter will come next.
- Point to a letter before saying it and ask if they know what letter it is and what sound it makes.
- Say a sentence and ask what words start with the letter on the page. For example, Read: B if for those boogie-woogie Bubble Bugs. Ask: What words start with the letter B.
- Feel free to ask your own questions as you go.

After the story had been read, and discussion of the daily questions had finished, children were broken up into three small groups of three-to-four children. Kyle was put into a group with Celene and Eric, children that he knows from his own class. Each group of children was sent to one of three stations: phonological awareness and phonics, sight words and vocabulary building, and printing. They will remain at each station for twelve minutes before rotating to the next one. Kyle begins at the phonics stations. The phonological awareness and phonics station works on letter recognition, letter-sound

association, and other early phonics principles. Children are first taught a skill in a direct and explicit manner (For example, this is the letter “s”, can you say “s”, and this is the letter “h”, can you say “h”?. When you put these letters together they make the sound /sh/, can you say /sh/? There are many words that start with /sh/ such as shop, shampoo, shelter. Can you think of a word that starts with /sh/?) Learning this new sound is consolidated through interactive games and activities. After the game, children are quizzed on the new sound. Sarah is running this station, and has been given a list of materials, and instructions for set-up and how to run each activity.

Materials:

- Alphabet Flash Cards
- Fly Swatters/ or coloured lights
- Letter Bingo

Set up: Have all the alphabet flash cards on the table with each child having a fly swatter or coloured light.

Activity One: SWAT

- Ask the children if they know what letter their name starts with. If they do not know, show them their letter and say its name. Have them repeat the letter. Show it to them again, and ask the name of the letter. Have them repeat it again.
- Have the children (one at a time) find their letter on the table and swat it with their fly swatter. Have them say the sound the letter makes. If they do not know, say this is the letter K, it make the /k/ sound, like Kyle. Can you say /k/? Great, the letter k makes the /k/ sound.
- Mix up the letters, give them time to find their beginning letter and tell the children to find their letter and swat it on the count of three. Repeat having them say their letter name when they swat, and again instead have them say the sound their letter makes when swatting.
- If this is too easy have the children find the first and second letter in their name. Now pick a random letter for the children to find, and repeat the process. Or have the child or children who have mastered their first letter find all of the letters in their name and swat them in the order.

Activity Two: Letter Bingo

- Play Letter Bingo according to the directions.

After the children have finished their first 12 minute station, they proceed to the next station. Kyle, Celene and Eric move on to the sight word station. Melissa has prepared her station with the materials provided and per her set up instructions.

Materials:

- Flash Cards with the words the, to, and, he, a
- Alphabugs book
- Dice
- Roll, Say, Keep game board

Introduce the words for the week.

- Say the first word, the, and point to the flash card. This is the word the, can you say the? Show the word again, and ask “what word is this?” Have the kids repeat it together three times.
- Introduce the word to and point to the flash card. This is the word to, can you say to? Show the word again, and ask “what word is this?” Have the kids repeat it together three times. Go back to the word the, and ask what word is this? Mix up the two words, and show the flash cards alternating five times. Once they group has mastered these two words, move onto and.
- Repeat this process with the five sight words.

See how many of these words you can find in Alphabugs.

Activity: Roll, Say, Keep

- Have each child roll the die. The highest roller goes first.
- Players take turns rolling the die and reading/saying the card in the appropriate space. If the players can read/say the card, he keeps it and replaces the card with another from the pile. (If they do not know the word have them repeat the word after you).

Kyle, Celene, and Eric move onto the printing station next. Lisa, the program facilitator who has been trained to work one-on-one with the children asks if she can hang out with Eric in the library station. Eric will miss the printing station today, and spend time working on his letters b, d, and p (which he would confuse for each other during the assessments on the first day). Lisa will provide various strategies to remember the difference between the letters, such as the bat and ball method or the “bed” method.

Once Eric has found a strategy that works for him, Lisa will use a direct and explicit technique with each letter and show words from Alphabugs that begin with each letter.

Eric will continue to work with Lisa for the remainder of the 12 minute session. Kyle and Celene remain with Samantha to work on their hand-eye coordination and printing.

Samantha has prepared her activities as per instructions.

Materials:

- White board
- Dry erase markers

Activity One: Printing on a white board

- Have the children show you the direction in which you read/print with their finger. Left → Right
- Ask the children if you start printing your letters Top Down or Down Up. Have them show you.
- Have them make vertical lines starting from top to bottom.
- Have them make horizontal lines from left to right.
- Have them make horizontal and vertical zig zags
- Have them make circles. Starting at the top of the circle and going left and down, then up and right, back to the top.

Activity Two: Printing on a white board Part 2

- Show the children how to print the first letter in their name. Have them copy you.
- Have the children print the first letter in their name repeatedly on the white board.
- If children know how to write their whole name, have them practice this. If this is too easy, have them practice their sight words for today.

Once the 12 minutes for the final station are over, Tamara calls the children back to the carpet for sharing and group time. Each session will have a different group activity.

Today, the children will be doing an activity called alphabet soup. Each child, one at a time, is called up to take a letter out of the soup and place it on the bottom in order starting with *a* and ending with *z*. They will be asked to tell the group the letter name, sound, and something that begins with that letter. If the child does not know what letter

comes next, or cannot find the letter, the facilitator will point them in the right direction and provide support. The child will tell the group the name of the letter, and the group can help with the sound and a word that begins with that letter. Once the alphabet is in the proper order, children will one at a time get their coats and meet their parents at the door.

Each session will have a different book and questions to go along with the book including prediction questions, comprehension and vocabulary questions. These questions will scaffold on previous knowledge and consolidate knowledge gained in the previous session. Small groups will always rotate in the same direction; however, the groups will change each session so all children get to work with each other over the course of the program. And finally, three children are called to work one-on-one each day. The facilitator will ensure that children do not miss the same station over the course of the program, and that skills are consistently being worked on in all areas of the program (not just during one-on-one time).

CHAPTER FIVE: RESULTS

The overall goal of this study was to explore Reading Rocks Junior from multiple perspectives. The previous chapter outlined the Reading Rocks Junior program, and was essential as it provided an understanding of the program, the principles on which it was designed, its structural components, and how it was delivered. Traditionally, research examining the efficacy of literacy programs adopts quantitative data analyses protocols to uncover any statistically significant achievement gains as a result of participating in the program. This is an important aspect of program evaluation, and as such was included in the current analysis.

Quantitative analysis

A pre- posttest analysis of emergent literacy score means was conducted to determine if there were significant differences in achievement. Pre-test data was collected from Reading Rocks Junior program sites in October 2011, February 2012 and October 2012 and the corresponding post-test data was collected in December 2011, April 2012 and December 2012. Following data collection, four paired samples *t*-tests were computed corresponding to the four emergent literacy measures used in this study. Raw mean scores and standard deviations for all four measures are shown in Table 1.

Table 1

Pre- and Post-Test Descriptive Statistics for Emergent Literacy Measures

Test (total score)	Pre-Test Means (SD)	Post-Test Means (SD)
Letter Recognition (54)	32.84 (17.90)	40.35 (14.33)*
Letter-Sound Association (26)	10.35 (9.21)	14.35 (7.81)*
Phonological Awareness (27)	17.46 (6.55)	20.57 (6.26)*
Print Awareness (36)	24.81 (9.96)	28.78 (7.96)*

Note. N = 37. * $p < .001$

A paired samples t -test for letter recognition was found to be significant [$t(36) = -5.59, p < .001$], indicating that participating children improved their ability to recognize and identify the alphabet from the pre-test ($M = 32.84, SD = 17.90$) to the post-test ($M = 40.35, SD = 14.33$). A paired samples t -test for letter-sound association was found to be significant [$t(36) = -5.08, p < .001$], indicating that participating children improved their ability to associate the letters of the alphabet with their corresponding sound from the pre-test ($M = 10.35, SD = 9.21$) to the post-test ($M = 14.35, SD = 7.81$). A paired samples t -test for phonological awareness was also found to be significant [$t(36) = -3.70, p = .001$], indicating that participating children improved their ability to blend and segment sounds in oral language from the pre-test ($M = 17.46, SD = 6.55$) to the post-test ($M = 20.57, SD = 6.26$). And the final paired samples t -test for print awareness was found to be significant [$t(36) = -4.45, p < .001$], indicating that participating children improved their ability to recognize and understand print in their environment from the pre-test ($M = 24.81, SD = 9.96$) to the post-test ($M = 28.78, SD = 7.96$). Achievement gains are presented in figure 1.

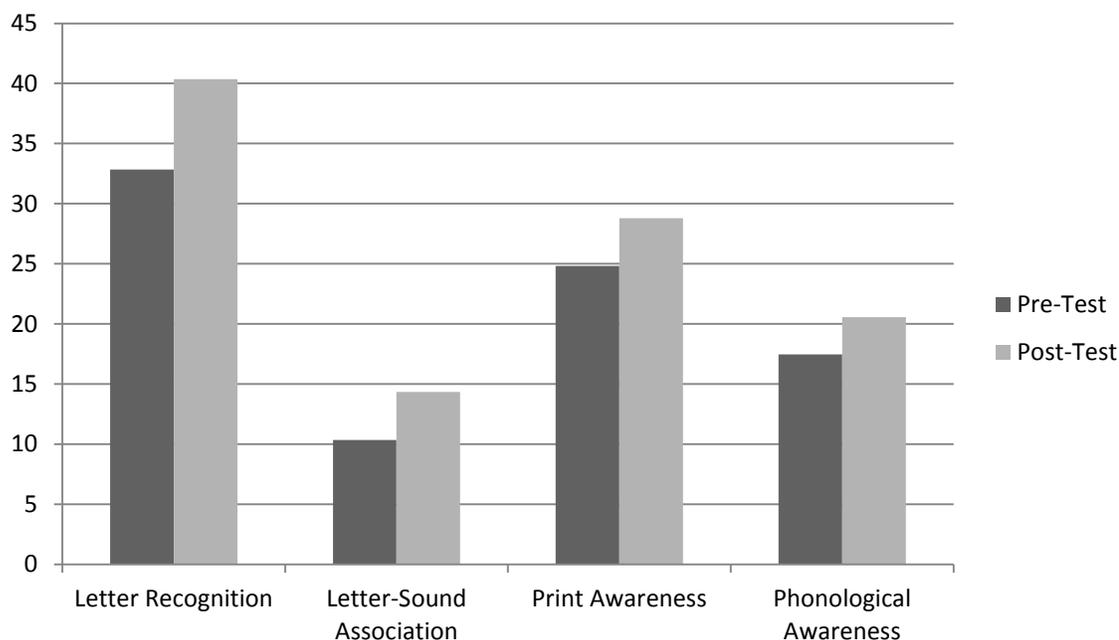


Figure 1: Mean pre- and post-test data for letter recognition, letter-sound association, print and phonological awareness.

In addition to determining that all four emergent literacy skills improved after children participated in the program, it was also important to explore the magnitude of the program effect for each of the four emergent literacy measures. In order to examine the magnitude of the program effects, Cohen's d were computed taking into account the correlations between pre- and post-test measures to determine the effect size for each of the emergent literacy skills (Morris & DeShon, 2002). According to Cohen (1988), an effect size of 0.8 is large, 0.5 is medium, and 0.2 is small. Letter recognition had the largest effect size $d = 0.99$, followed by letter-sound association $d = 0.86$, print awareness $d = 0.78$ and finally, phonological awareness $d = 0.61$. Therefore, by comparing the magnitude of each effect, the effects for letter recognition appeared to be larger than the

effects for letter-sound association, print and phonological awareness. Furthermore, letter recognition and letter-sound association both fall within the margin of a large effect size.

Clinical Significance

Although pre- and posttest analyses revealed statistically significant increases for all four measures, these results cannot demonstrate whether the increases are clinically significant. In other words, it is important to determine whether the increases made by participating children result in emergent literacy achievement that is commensurate with achievement levels of typically-achieving four- to six-year old children. To do this, pre- and posttest TOPEL mean scores were converted into percentile rank scores for each age group and compared to norm-referenced percentile rank scores reported in the TOPEL technical data. Pre- and post-test clinical gains are presented in table 2.

Table 2

Pre- and Post-Test Percentile Rank Scores for Phonological and Print Awareness

	Pre-Test Percentile Rank	Post-Test Percentile Rank
4-Year Old Phonological Awareness	25	65
4-Year Old Print Awareness	47	75
5-Year Old Phonological Awareness	47	68
5-Year Old Print Awareness	35	73
6-Year Old Phonological Awareness	45	61
6-Year Old Print Awareness	58	77

At the pre-test, four-year old children had a TOPEL print awareness mean score of 13.27 which was converted to a percentile rank score of 47. Posttest mean scores for the same group for print awareness were 20.73 which correspond to a percentile rank score of 75. These results indicate that participating four-year old children not only demonstrated a statistically significant increase in print awareness as a result of the

program, but that these increases were within achievement levels of typically achieving four-year old children. A similar trend emerged for five- and six-year old children. Five-year old children had a TOPEL print awareness mean score of 27.27 which was converted to a percentile rank score of 35. Posttest mean scores for the same group for print awareness were 30.36 which correspond to a percentile rank score of 73. Similarly, six-year old children had a mean score of 31.47 prior to the program, corresponding to a percentile rank score of 58. Posttest mean scores for the same group for print awareness were 33.53, corresponding to a percentile rank score of 77. Therefore, print awareness increased to a level that was equal to typically-achieving four- to six-year old children as a result of the program.

A similar trend emerged for TOPEL phonological awareness. Pre-test mean scores for four-year old children for phonological awareness were 11.64 which converted to a percentile rank score of 25. Posttest mean scores for phonological awareness were 17 corresponding to a percentile rank score of 65. These results indicate that participating four-year old children not only demonstrated a statistically significant increase in phonological awareness as a result of the program, but that these increases were within achievement levels of typically achieving four-year old children. A similar trend emerged for five- and six-year old children. Five-year old children had a TOPEL phonological awareness mean score of 18.36 which was converted to a percentile rank score of 47. Posttest mean scores for the same group for print awareness were 21.09 which correspond to a percentile rank score of 68. Similarly, six-year old children had a mean score of 21.07 prior to the program, corresponding to a percentile rank score of 45. Posttest mean scores for the same group for print awareness were 22.80, corresponding to

a percentile rank score of 61. These results indicate that participating children demonstrated both statistically significant and clinically significant increases, whereby posttest scores were within achievement levels commensurate with typically-achieving four- to six-year old children.

Clinically significant analyses were not possible to conduct for letter recognition and letter-sound correspondence, as there are no established benchmarks for kindergarten letter knowledge. It is important to note, that the largest statistical gain was letter recognition. Mean scores for letter recognition increased from 32.84 to 40.65 after participating in the program. This trend was not as large for letter-sound correspondence (increased from 10.35 to 14.35); however this skill is developmentally more complicated for children just completing kindergarten.

A goal of the thesis was to determine whether Reading Rocks Junior was an effective emergent literacy intervention for children four- to six-years of age, measured by the TOPEL for print and phonological awareness and two standard assessments of letter recognition and letter-sound association. The research question was answered using a paired samples *t*-test. Based on the results of the paired samples *t*-tests it was determined that there was a significant increase in children's emergent literacy skills as a result of participating in Reading Rocks Junior. It is also important to mention, that the achievement gains made as a result of the program, put once struggling readers within achievement levels of typically-achieving children of the same age. These results provide support for the efficacy of Reading Rocks Junior, as emergent literacy scores were significantly higher after children participated in the program.

Qualitative Analysis

As mentioned previously, the quantitative analysis described above is a typical method for measuring the success of literacy program. However, largely absent from previous research in this area is qualitative analyses of the contextual factors associated with program design and delivery. As such, the current study adopted a mixed-methodological approach whereby quantitative analyses were complimented by qualitative interviews of the stakeholders involved in this project. I audio recorded each interview and transcribed them verbatim. I then analyzed transcripts using a content analysis approach by highlighting significant statements and arranging them into themes. By exploring the program through qualitative interviews, a more complete picture of Reading Rocks Junior emerged.

As described in the methods chapter, interviews were conducted with Chantelle Key, the program coordinator from the Learning Disabilities Association of Niagara Region, Rick Merritt, the Convener of the Niagara Prosperity Initiative, and three parents whose children participated in the Reading Rocks Junior program. Parent interviews included Silvia whose two daughters Jessica (age 4) and Stephanie (age 6) attended the program, Melissa whose son Aidan (age 5) attended the program, and Megan whose son Harrison (age 6) attended the program (pseudonyms for parents are used).

From the 5 verbatim transcripts, 42 significant statements were extracted. Arranging the statements into clusters of meaning resulted in 3 main themes: the perceived efficacy of the program, the importance of cost, and the importance of location when providing programs in low socioeconomic status communities.

Theme 1: Perceived Efficacy and Enjoyment

The first theme that emerged from the data was that parents noticed a significant improvement in their child's reading achievement as a result of participating in the Reading Rocks Junior program. Prior to Reading Rocks Junior, many parents indicated that their children did not want to read in their spare time, were not confident in their reading ability, and demonstrated a lack of enjoyment when reading or being read to. Parents described their children as "avoiding reading at all costs", "showed no interest in reading whatsoever", and "didn't like to read". However, after participating in the program, parents explained the changes they had seen in their children. Silvia explained:

"Our youngest daughter had no interest in reading whatsoever, but after Reading Rocks Junior, she got really into it." She also commented that "with Jessica she had no interest in reading. I have a pretty comical video of us trying to read to her, and she is just avoiding us, asking us questions to change the subject. But now, we just went to the bookstore, and they got themselves some books. And definitely, Stephanie can read all by herself now, she needs very little help. Stephanie just bought a chapter book on the weekend, and she's already finished it!"

Megan explained:

"He doesn't really like to read, per se, I have found that after being in the group, after being in Reading Rocks for the last few weeks, he's more excited to show us what he knows. He'll bring out a book, and say Mom I know all the letters, or he'll be more confident to sound words out when we're doing some homework. Or signs that we see coming to and from school, he'll say look this has those letters in it. So his confidence level is probably the biggest change I've noticed." She also said "Umm.. I think the biggest thing I've noticed is his confidence level, and trying to do stuff on his own, which is a big change from me having to drag it out of him. His confidence level is probably the biggest thing I've noticed, and it's nice to see."

Melissa also noticed a change in confidence and Aidan's ability to read street signs. She says:

"Definitely. Big improvements. Way more confident now, all the signs..he kind of drives me nuts, but in a good way. All the signs, He tries

to read them, or he even knows them. My husband even says, he was reading all the signs, and I'm like yeah I know! Ever since he started the program he's way more confident in sounding things out, and even trying when he doesn't know. When before, it wasn't a common thing at all. The program has made a big difference!"

Parents explained what they thought was the most effective element of the program for their child. Responses ranged from the use of consolidating activities and games, to the importance of the one-on-one instruction. Megan said:

"He's in grade one. But, he was below reading level. Since Reading Rocks Junior... he knows all of his letters now, and he's got 19 of his letter sounds. I think it's kind of a no pressure situation for him. It's more of a fun game thing, I think he doesn't even know how much he's picking up because he's too busy having fun."

Silvia's youngest daughter also enjoyed the activities and games, she explains:

"The way that the teachers interacted with them. It was certainly different from the classroom environment. The one-on-one was definitely a plus. And Jessica just adored the games that they played for letter-sounds and what letters different words began with. I think that was her favourite part. And Stephanie, just enjoyed being able to read, and getting better at reading. She really wanted to read more, and now she can, because they taught her strategies and she is using them. And she is reading longer too. Like I said, she read a whole chapter book in a couple of days."

Finally, each parent explained how much their children enjoyed Reading Rocks Junior.

Megan said:

"He ran in to the class today. He ran from the car, he didn't wait for me, he ran from the car to the doors, to the point where another parent who was outside actually said oh, he must be happy to be coming here. Because he left me in the dust, to get to the class. So he really seems to like it. He never gives me a hard time to come back and you'd think after being here all day, he wouldn't want to come back, but he does!" And "Yeah, he loves coming, so, he even told the kids in his class, I have reading group tonight. So, apparently that was a big deal."

Silvia said “Now that Reading Rocks Junior is finished, they still ask about it, they want to go! They still ask when they will go back.” Overall, the largest changes were evident in children’s confidence levels, reading ability and enjoyment when reading. Although prior to Reading Rocks Junior children were “below grade level”, “not liking reading, per se” and “not wanting to try to sound things out”, parents witnessed large changes in these areas. They believed that the program was a major factor in this change. The program coordinator indicated that “Families are very happy with the program and can’t believe the progress their child has made while participating in the program. A lot of our families want to participate again and state that they would recommend it to family and friends.” Silvia said “Definitely. I have already recommended it actually. One of my friends, her son is having a lot of difficulty with reading, and I recommended it to her!” and “I’ve already signed up!” Megan felt the same way.

“I have [recommended it]! Definitely, I’ll be honest, I rave about you, probably every Wednesday and Friday after Harrison’s been here, at work. And we have mentioned, because I have mentioned it so much in our class, I know our teacher has passed on information to other families, there’s another one coming up in February, so we are trying to get some other families interested from our grade 1 class.” She too has planned to sign up for the next session “Definitely! It’s already in my phone. There’s already a reminder to remind me to sign him up on the right day. So yea, I’m really hoping to get him in.”

Melissa will also be coming back for the program. She explained “Oh definitely, I would want to do that again. You guys did such a wonderful job!”

The Reading Rocks Junior program was successful for a number of reasons. According to the parents who were interviewed, the pedagogical approaches were a large part of the programs efficacy. Specifically, the embedded and explicit nature of the program (providing the program in a literacy-rich environment where facilitators engaged

in meaningful and purposeful literacy practices as well as mediating play involving literacy-related artifacts such as lists or signs, and interacting with contextualized print in the environment), the one-on-one instruction, and the “no pressure zone” allowed children to feel confident, enjoy reading and ultimately improve in their emergent literacy skills. Program coordinators, researchers, and stake holders in early literacy development should consider the use of these elements when designing and implementing emergent literacy programs.

Theme 2: The cost

The second theme that emerged was the cost of programs in low socioeconomic status communities. Parents indicated that their children would not have been able to attend the Reading Rocks Junior program, had it been offered at a large cost. The Learning Disabilities Association of Niagara Region is one agency that is providing programs at little to no cost to ensure that programs are accessible to families in the region. The coordinator of Reading Rocks Junior explains:

“Without funding we would not be able to offer Reading Rocks Junior. We were able to pilot this program because we received the funding to hire a project coordinator, facilitators, and research assistants. With funding we were able to purchase all necessary materials to run an affective program. To offer the program without funding it would be too expensive for most families to afford. With funding, the program can be offered at no charge to families”

The Niagara Prosperity Initiative is the funding agency that has supported the implementation of Reading Rocks Junior in the Niagara Region. Rick Merritt, the Convener of the Niagara Prosperity Initiative, had the opportunity to meet with people living in 12 different low socioeconomic status communities in the Niagara region to

discuss lifestyles, quality of life and what mechanisms are necessary to make large-scale changes in the area. He explains that:

“The whole idea was that if these initiatives are going to be successful, we can’t tell people what they need to improve their lives, we need to get input from them.” And from all of the discussions that took place “The thing that came through loud and clear, we put it in the basket of service delivery. They needed programming, mainly parents worried about kids, they needed programming for their kids and it needed to be affordable, ie. Free and in their neighbourhood.”

In 2007, the Niagara Regional government commissioned a report from Brock University called “A Legacy of Poverty: Living in Niagara”. And really, the thrust of it was how does that impact the children that are living in this community. Rick explains: “It was a great report, very comprehensive, and to the regions credit they followed the recommendations; which were to do some advocacy around poverty issues, programming and services for children were really important and any other programs that effected or improved the social and health determinants of adults and children.” Niagara is a region that has a large population of families living below the poverty line, and therefore, the report would impact many families living in the area. Rick explained that the groups that the Niagara Prosperity Initiative seeks to support are commonly found living in low socioeconomic status neighbourhoods.

“First of all, 15% of the children who live in Niagara are living in a household below the poverty line. I guess the most common demographic groups are children who are living in a single parent home, and typically, if their living in a female lead home, that seems to be more of an issue. The aboriginal community tends to have a higher rate of poverty. New Canadians are a big factor. There are still some, in spite of some the government programs; there still are seniors in poverty. They are a group you would be concerned about. Probably people who don’t have a lot of education. There seems to be a correlation between education, income and poverty.”

In this cluster, the parents spoke of how integral the cost was to their participation in Reading Rocks Junior. Parents explained that had the program not been free, they might not have been able to attend. The cost of programming was seen as a barrier for accessing similar programs in the past, and therefore, the “cost was very important”. Melissa said “Oh definitely! In order to attend, we needed it to be affordable... The cost is very important!” When discussing what factors contributed to her participation in the Reading Rocks Junior program she explained “Cost, location, mainly cost. You can always get to a place it just takes longer, depending on the transportation. But cost, is really important in my case.” The cost was also very important for Silvia. She explained “Yes, definitely the cost! We are a one-income family, and so cost is definitely an issue.” Although Megan explained that in her case, the opportunity to help her child succeed was the reason Reading Rocks Junior was appealing, she explained “I do think the cost is important, I think that you wouldn’t have some families here, if there had been a large cost to it. I mean the economy hasn’t been great in the past few years, so I definitely think that is important to families to be able to come here without worrying about the cost.” It is evident that when providing programs that seek to support young vulnerable readers, particularly due to low socioeconomic status, it is important to remember that the families who require such services might not be able to afford costly programs. As such, by receiving funding from community agencies, the Learning Disabilities Association of Niagara Region was able to implement a program that made large-scale changes in children’s reading ability at no-cost to the families. Other programs, who seek to support vulnerable families and communities, should consider the affordability of their programs and seek funding to subsidize program costs.

Theme 3: Location

The final theme that emerged in the data was the importance of program location for the families who attended Reading Rocks Junior. The targeted neighbourhoods where Reading Rocks Junior was implemented were within eight “priority neighbourhoods”. Rick explained that “each project [that was funded], initially had to touch at least one of the four recommendations of *The Legacy of Poverty* report, and be in a targeted neighbourhood. And that was another huge support that the region had, and we were way ahead of anyone else, they mapped out, that’s GIS mapping, we identified, out of the 74 neighbourhoods in Niagara, about 25 as priority.” He explained that these neighbourhoods were identified by the “percentage where both parents don’t have a high school diploma, low EDI, low birth weights, percentage of households with government assistance, and percentage of renters.” From the 25 priority neighbourhoods, Reading Rocks Junior was held in eight neighbourhood schools within four of the target neighbourhoods mapped out by the GIS mapping tool.

Providing the programs within schools in each of the neighbourhoods was important to the parents who attended Reading Rocks Junior. The parents enjoyed that it was in their children’s school and sometimes classroom, that it didn’t take long to get to, and that they could walk when they didn’t have access to a car or transportation. Megan said:

“I like that you’re in the schools!” and “I think because there’s different locations and people can arrange to get to whatever’s closest to them. There aren’t people from Niagara Falls trying to drive to St. Catharines on a tight schedule. I mean, I have a six-, Harrison’s six and my daughter Carley’s four, so life is busy, and my kids are both 12 hour sleepers, so they go to bed at 7, so if I had to drive to the Falls or Welland or anywhere else it might not have been so doable.”

Melissa also explained that going to the program might not have been possible had it been held in a different or further location. “I think I would have tried, but it definitely made it easier knowing that I could walk here...because I don’t always have use of a car.” She further explained when discussing the factors that contributed to her participation in the program “The location was good because it didn’t take long to get there.” Silvia agreed that the location was important. “It was definitely a bonus that it was just held up the street from us. If it was further away we probably wouldn’t have been able to do it, because we are a busy family and have an early bed time.” Chantelle indicated that “Many of our families are able to access the program because it is walking distance. Because we are located in lower income neighbourhoods, many families do not have a vehicle or, if they do, another family member may be using it at the same time the program is running.” Rick also indicated that being close to home is important for the families who access the majority of their programs.

“From what we hear from people, it’s hugely important. Number 1, there’s the dollars and cents side of it, then there’s the logistics of it. If you have little kids at home, and you have the 8 year old you want to go to the program, how do you leave the little ones to get the 8 year old, he might not get to go. You might not have transportation at all. And people are more comfortable with things in their own neighbourhood.”

The interviewees all expressed the importance of location when discussing the Reading Rocks Junior program. While many programs exist that are designed for low-income families, they might not be in a location that is accessible to the participating families. As such, it is recommended that program coordinators consider providing programs within neighbourhood schools. As Rick points out:

“I think they [community and school partnerships] are really important, because that’s part of the work I’m doing as the convener. I’m trying to bring and encourage collaboration and partnerships between groups that might not naturally be meeting. I’ll use schools as an example; they are all paid for by the taxpayers. The school board doesn’t own them. So tax payers pay for them. They use them September to June, well public schools, and let’s say 9 – 3. And then they sit empty. Why shouldn’t they be open to the public and to the neighbourhood? And I think there is encouragement from the government to recognize that, and they are opening them up. And what we’ve heard from people is it’s great to have a new Y on the other side of town, but if I can’t afford it and I can’t get to it, then what good is it. But if the school is right next door and it has a gym, then why shouldn’t I use it?”

In order to serve families in low-SES neighbourhoods, community agencies, researchers and coordinators should keep in mind transportation in the area. Otherwise, as indicated by the parents who accessed Reading Rocks Junior “It might not have been so doable”.

Overall, accessibility is an important factor to consider when designing and implementing emergent literacy programs for young vulnerable readers. For the parents who accessed Reading Rocks Junior, the low-cost and neighbourhood location were integral to their participation. At the community level, these supports are cheaper to implement and more effective in reducing the achievement-gap between poor and strong readers, than waiting until grade 3 when the discrepancy is often too large to remediate. Finally, at the regional level, supporting children who live in low-SES families can change the likelihood of experiencing later negative outcomes, such as increased drop-out rates, unemployment, crime, and dependence on social welfare: thus creating more economic and social stability. There are many factors that influence poverty, and poverty influences many life choices and outcomes. The convener of the Niagara Prosperity Initiative ended our interview by saying:

“How do we change attitudes about poverty? They think it’s their fault that they are in this situation. A lot of people think, just get a job, stop drinking and everything will be fine. It’s not that simple. Poverty is a complex set of circumstances that people find themselves in. And therefore, it’s a complex set of solutions to help alleviate it.”

CHAPTER SIX: DISCUSSION AND CONCLUSION

The past two decades of research on vulnerable readers has led the field to think hard about innovative approaches to *prevent* reading difficulties rather than waiting until children fall behind in their reading. The premise behind such initiatives holds that by supporting vulnerable children early, a whole host of later academic and social difficulties can be prevented. The field has responded to this call, by designing and implementing various programs and approaches to support children before they begin school. Recently, the Learning Disabilities Association of Niagara Region, with support from the Niagara Prosperity Initiative, developed and implemented Reading Rocks Junior – an emergent literacy program aimed at supporting young vulnerable readers and their families. In addition to the emergent literacy skills associated with the program, the LDANR and Niagara Prosperity Initiative were also interested in addressing the notion of accessibility. That is, they were interested in designing a program that was accessible to families who were particularly in need of support. Research has pointed to the notion that socioeconomic status is an important factor correlated with reading achievement (Duncan & Brooks-Gunn, 2000; Raudenbush, 2004). Children from low socioeconomic status backgrounds often demonstrate that they do not have the requisite emergent literacy skills to become skilled readers compared to children from middle-income backgrounds (Entwisle & Alexander, 1993; Hart & Risley, 1995). However, a number of large-scale studies have demonstrated the efficacy of early intervention in supporting literacy development of vulnerable readers (Moore & Hammond, 2011; Simmons et al., 2007). The current study built on these frameworks and explored the efficacy and accessibility

of Reading Rocks Junior -- an emergent literacy program designed to support young vulnerable readers in low socioeconomic status communities.

The mixed-methodological approach adopted in this study provided a multi-lens analysis of not only the achievement associated with program participation, but also an exploration of the contextual factors associated with program design and delivery. The results of this study were encouraging. The results of the quantitative analyses revealed that participating children experienced both statistically and clinically significant gains in their emergent literacy achievement. These results suggest that prevention programs such as Reading Rocks Junior are successful at the fundamental level of reading achievement. However, the results of the qualitative analyses point to the notion that contextual factors may play an important contributing role to the quantitative results. In general, the results of the qualitative data suggest that prevention programs such as Reading Rocks Junior need to consider factors such as program location and issues of accessibility. These ideas are discussed further in the following section.

First, it is important to explore the reasons behind the success of Reading Rocks Junior. These reasons may be couched in the actual design of the program. The Reading Rocks Junior program was designed based on current empirically-driven evidence of effective pedagogical approaches to emergent literacy intervention. More specifically, a combination of embedded and explicit learning approaches were used as research suggests that when instruction is embedded (through informal, naturalistic and contextualized interactions with literacy using a whole language approach) and explicit (includes practices that emphasize the direct teaching of discrete emergent literacy skills through teacher-led instructional practices) children are able to scaffold upon early

literacy concepts to maximize student learning and potential (Justice & Kaderavek, 2004). Furthermore, Reading Rocks Junior incorporated one-on-one and small group instruction. Previous research indicates that small-group instruction is more effective than individual and whole class instruction (Ehri et al., 2001) and is more efficient in terms of time and resources (Hatcher et al., 2006). One-on-one instruction is important for children who are falling behind, as it allows for the instructor to work independently to master difficult concepts. The combination allows for opportunities for multiple interactions between teacher and students and for meaningful interactions between the students themselves. Finally, the program included shared storybook reading. Research indicates that engaging in open-ended questioning throughout the reading results in vocabulary enhancement in young vulnerable readers (Beck & McKeown, 2001; Whitehurst et al., 1994).

A second important consideration around the success of the program is the developmental stage at which time such intervention is provided. The Reading Rocks Junior program was offered to four- to six-year old children who were referred to the program as a result of demonstrating needs in their emergent literacy skills. Snow, Burns and Griffin (1998) suggest that young children demonstrating weak emergent literacy skills should be supported before they begin formal literacy training. The notion of emergent literacy suggests that literacy begins prior to formal schooling, more specifically, from birth onwards. Research has clearly elucidated the effects of not providing early intervention to struggling emergent readers. These effects are perhaps captured best by the idea of the Matthew Effect proposed by Stanovich (1986). The Matthew Effect posits that children who demonstrate early difficulties in phonological

awareness are slower in their word-level decoding and as a result experience less exposure to vocabulary and have fewer opportunities to engage in reading practice. In turn, these children experience a decrease in motivation, compounding the effects of their cognitive delay. In essence, cognitive delays interact with motivational factors to produce conditions whereby children with poor phonological awareness begin their trajectory throughout formal schooling at a significant disadvantage compared to their peers. Subsequently, as these children progress through their primary schools years, the gap in reading achievement scores between themselves and their grade-level reading peers increases exponentially thus leading to a situation where struggling readers continue to fall further behind. This leads to a cycle of academic failure and frustration that is difficult to remediate. To address this cycle of failure, program designers and stakeholders in general should begin to consider programs that are couched within the developmental period of birth through age six. The potential results of such programs will offset the devastating effects of beginning school on a trajectory of reading failure and general academic frustration.

Also, there are program-specific issues that may have directly impacted the results of the study. The program specifically targeted the development of letter recognition, letter-sound association, print and phonological awareness. Research has consistently demonstrated that these four emergent literacy skills are paramount to supporting young vulnerable readers (de Lemos, 2005; Lonigan, 2006). The current study supports this previous research, as Reading Rocks Junior produced significant gains in all four areas. The largest achievement gains were seen in letter recognition. Research suggests that letter-recognition is the most statistically significant predictor of reading ability in grade

two (Catts et al, 2001). By producing large improvements in this skill area, it is presumed that children will build upon the foundation for later reading success.

Exploring the contextual variables associated with the success of the program revealed an increase in motivation of participating children to engage with reading. One of the challenges associated with the Matthew effect is that poor readers tend not to engage with reading-based tasks. That is, children are not motivated to engage with tasks that they perceive they are not successful with. The results of the qualitative analysis revealed that as children improved in their reading ability, they also experienced increased confidence when reading, and began to use reading strategies learned at the program in other contexts. In addition to this, as a result of participating in the program and experiencing their own success with reading, children enjoyed the program and were excited to return to Reading Rocks Junior for the next session. The changes in reading enjoyment and motivation were consistent in the parent interviews suggesting that early literacy intervention creates not only academic improvements in emergent literacy, but also improvement in motivation and engagement. For example, one parent said “Ever since he started the program he’s way more confident in sounding things out, and even trying when he doesn’t know. When before, it wasn’t a common thing at all. The program has made a big difference!” The hope from here is that this skill development and motivation to engage will be transferred to other contexts, such as the home and at school as well as general increase in self-esteem that can be engaged in tasks outside of academics.

Another contextual factor deserving attention is the importance of program accessibility. While many emergent literacy programs are said to target vulnerable

readers, they have not necessarily been accessible. The Reading Rocks Junior program was offered at no-cost, within eight schools in targeted low-SES neighbourhoods.

Previous research on early learning has indicated the importance of considering these factors when designing and implementing early literacy intervention (McCain, Mustard, McCuiag, 2011). Following this, the current study aimed to provide a program that was accessible to low-income families, and to collect data to support these factors for future program initiatives. The funding agency's convener, the program coordinator and the parents of participating children indicated the necessity of offering programs that alleviate barriers such as cost and location. Specifically, Rick stated that "15% of the children who live in Niagara are living in a household below the poverty line, and [when speaking with these individuals] they needed programming, mainly parents worried about kids, they needed programming for their kids and it needed to be affordable, ie. free and in their neighbourhood." Therefore, the current study provided evidence for the factors that compound the success of regular emergent literacy programming for at-risk children. Future programs should consider accessibility and cost when designing programs aimed at supporting vulnerable children and families.

Finally, it is important to understand that Reading Rocks Junior was successful in part because it was created in partnership with the community, the school board, and the region. While the program was designed by the Learning Disabilities Association of Niagara Region, it would not have been possible to implement it at no-cost without the regions support and the Niagara Prosperity Initiative. By funding the program, families in low-SES communities were able to access programming without financial barriers. By using neighbourhood schools as program sites the program was provided in a literacy rich

environment and the families were able to access the program without transportation difficulties. Teachers within these schools recruited children who were great candidates for early intervention, providing the participating families with information about Reading Rocks Junior. Finally, Brock University was responsible for collecting pre- and posttest data as evidence for the efficacy of the program. Previous research has suggested the importance of community and school partnerships, however, this collaboration is often absent in research endeavors. Reading Rocks Junior is one example of how effective and successful a program can be by collaborating with various educators, community agencies and stakeholders in young children's education; providing support that these individuals should stop working in isolation of one another, and combine efforts for the best results.

Limitations and Future Research

The current study had a number of limitations that are important to consider. First, this study had a relatively small sample size of 37 participants. By limiting the sample size, the research team was able to provide small group and individual attention to each participating child – an important tenet of effective remedial instruction. Ideally, future studies should consider a larger sample size of participants to create more generalizable results. Furthermore, the number of participants who were interviewed was limited, and therefore, the current study might not have reached saturation. Results cannot be generalized to all families living in low-SES homes, but should inform the implementation of emergent literacy programming in low-SES neighbourhoods. As this population is particularly at risk for deficient emergent literacy skills and subsequently, future reading failure.

The second limitation was the lack of control group. An age- and gender-matched control group who received no intervention should have been established to ensure that achievement gains were a result of the program and not natural maturation or developmental growth. However, because of our commitment to serving as many children as possible, a control group design was not used. To address this issue, the current study adopted a research design whereby achievement scores were converted to percentile rank scores and compared to normative benchmarks indicated in the TOPEL technical data. As such, we were able to determine whether the gains in emergent literacy were large enough to put them within achievement levels of typically-achieving children of the same age. If the intervention was ineffective, we would have expected little to no change in percentile rank scores over the course of the program. However, large improvements were made, putting participating children on the trajectory to typical reading development. Furthermore, the sustainability of the achievement gains was not measured. It would be important to study the long-term impact of similar programs.

A third limitation of the current study was the use of multiple tests to analyze the data. The study only had one group of participants who participated in the program who were tested on four measures of emergent literacy prior to and after the program's completion. As such, four paired-samples *t*-tests were chosen to analyze achievement gains. Multiple testing potentially results in an inflated type one error rate, and as such the significance of each effect should be interpreted with caution. Related to this methodological limitation, it is also important to acknowledge that to determine the effect size of each of the emergent literacy measures, the current study used the pooled standard deviation of pre- and post-test results. This method is suggested by some researchers as it

takes into account that the same participants were tested at two time periods (Morris & DeShon, 2002). However, it should be noted that using pooled standard deviation in calculating effect size has been contested as the effect size might be overestimated (Dunlop et al., 1996). Also, this method of testing does not take into account theoretical and empirical associations among the dependent variables. Future researchers might conduct a MANOVA to take-into account the correlation between dependent variables, permitted the sample size is large.

Reading Rocks Junior was offered twice a year (October – December and February – April) for two years (October 2011 – April 2013). Further, the program was offered in multiple sites, and data was collected from different sites each time the program was held. In other words, the data that was collected and analyzed came from different locations and sessions over the course of the two-year time period. This issue was addressed by ensuring consistency with all other factors in program design, delivery, and data collection protocols. However, this may have slightly affected the reliability of the study.

A final limitation centers around the notion that although this program was found to be statistically and clinically significant, it should be noted that further controlled studies are required before assumptions can be made about the success of this intervention over others. Although the program elements were derived from evidence-based approaches for at-risk emergent learners, there is no evidence that the materials, techniques or activities used are better than other combinations of activities in other interventions.

Conclusion

The study described here was designed to test the efficacy and accessibility of an emergent literacy intervention for at-risk readers. The results of the study are consistent with existing evidence that early intervention is important to support the development of emergent literacy at a critical period in a child's journey to literacy. However, this study also moved beyond many existing studies of emergent literacy and examined the Reading Rocks Junior program through three lenses that provided a more complete picture of the achievement and contextual factors associated with effective emergent literacy programs. Reading Rocks Junior was designed, delivered, and supported by a partnership between the Learning Disabilities Association of Niagara Region, the Niagara Prosperity Initiative, Brock University, and the Niagara School Board. It was this collaboration that allowed particularly vulnerable families from Niagara to access the Reading Rocks Junior program without many of the barriers standing in the way of traditional programs. The results of the study indicate that children experienced statistically and clinically significant achievement gains in all four measures of emergent literacy, placing them within achievement levels of typically-achieving children of the same age. In addition to this, children also experienced increases in motivation and self-efficacy such that with continued and ongoing support, these children who were once at-risk for future reading failure will develop into skilled and proficient readers.

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Appendix A. Consent Forms
NPI Consent Form

Date: **March 25, 2013**

Project Title: **Reading Rocks Junior: An exploratory study of an emergent literacy program for children at-risk for reading difficulties.**

Principal Investigator: **Sierra Holtzheuser**
Child and Youth Studies, Brock University
Tel: **905.688.5550 ext 5541**

Co-Principal Investigator: **Ashley Short**
Learning Disabilities Association of Niagara
Tel: **905.641.1021**

Principal Investigator and Faculty Supervisor:
John McNamara
Child and Youth Studies, Brock University
Tel: **905.688.5550 ext 3835**

INVITATION

You are invited to participate in a study that involves research. The purpose of this study is to determine what factors make Reading Rocks Junior successful. The research will be conducted by Sierra Holtzheuser and Dr. John McNamara from Brock University in partnership with Ashley Short, the Director of The Learning Disabilities Association of Niagara Region. The research is aimed at measuring the effectiveness of this emergent literacy program including the program's accessibility.

WHAT'S INVOLVED

As a participant, you will be interviewed for approximately one hour. The interview will take place at your earliest convenience at the Niagara Prosperity Initiative offices (located on Church St.). Keep in mind that being interviewed on site may have implications for confidentiality. As such, alternative locations may be discussed. Overall, we are interested in the importance of program accessibility, and the funding initiative, NPI. The interview will be audio recorded. The audio-tape and transcription of the interview will be kept anonymous, and only the principal investigator and interviewer (Sierra Holtzheuser) will be aware of who was interviewed. The LDANR will have no knowledge of your participation, however, Ashley Short will have access to the final thesis and the transcriptions (with no identifying features) if requested. Ashley Short and the LDANR will not have copies of the data. Interview questions will include, but are not limited to: What is your role within the Niagara Prosperity Initiative? What is it? How does it choose programs to fund?

POTENTIAL RISKS

There are no known or anticipated risks associated with participation in this study. Your decision to participate or not is totally up to you and you may discontinue at any point during the interview.

CONFIDENTIALITY

All information you provide is considered confidential; your name will not be included or, in any other way, associated with the data collected in the study. Furthermore, you will not be identified individually in any way in written reports of this research. Data collected during this study will be stored at Brock University with the principal investigator. Data pertaining to the research study will be kept for 10 years after which time it will be destroyed. Access to this research data will be restricted to the research team consisting of Dr. John McNamara, Ashley Short (Director of the LDANR), and the Research Assistants working on the research project.

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you wish, you may decline to answer any questions or participate in any component of the study. Further, you may decide to withdraw from this study at any time and may do so without any penalty or loss of benefits to which you are entitled. If you choose to withdraw from the study, all of the data collected from you will be destroyed.

PUBLICATION OF RESULTS

Results of this study may be published in professional journals and presented at conferences. Feedback about this study will be available by contacting the principal investigator at the above address.

CONTACT INFORMATION AND ETHICS CLEARANCE

If you have any questions about this study or require further information, please contact the Principal Investigator using the contact information provided above. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University (file # 12-113).

Thank you for your assistance in this project. Please keep a copy of this form for your records.

CONSENT FORM

I agree to participate in this study described above. I have made this decision based on the information I have read in the Information-Consent Letter. I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future. I understand that I may withdraw this consent at any time.

Name: _____

Signature: _____ Date: _____

Program Coordinator Consent Form

Date: **March 25, 2013**

Project Title: **Reading Rocks Junior: An exploratory study of an emergent literacy program for children at-risk for reading difficulties.**

Principal Investigator: **Sierra Holtzheuser**
Child and Youth Studies, Brock University
Tel: **905.688.5550 ext 5541**

Co-Principal Investigator: **Ashley Short**
Learning Disabilities Association of Niagara
Tel: **905.641.1021**

Principal Investigator and Faculty Supervisor:
John McNamara
Child and Youth Studies, Brock University
Tel: **905.688.5550 ext 3835**

INVITATION

You are invited to participate in a study that involves research. The purpose of this study is to determine what factors make Reading Rocks Junior successful. The research will be conducted by Sierra Holtzheuser and Dr. John McNamara from Brock University in partnership with Ashley Short, the Director of The Learning Disabilities Association of Niagara Region. The research is aimed at measuring the effectiveness of this emergent literacy program including the program's accessibility.

WHAT'S INVOLVED

As a participant, you will be interviewed for approximately one hour. The interview will take place at your earliest convenience at the Learning Disabilities Association of Niagara offices (located on St. Paul St.). Keep in mind that being interviewed on site may have implications for confidentiality. As such, alternative locations may be discussed. Overall, we are interested in the importance of program accessibility, and the design of Reading Rocks Junior. The interview will be audio recorded. The audio-tape and transcription of the interview will be kept anonymous, and only the principal investigator and interviewer (Sierra Holtzheuser) will be aware of who was interviewed. The LDANR will have no knowledge of your participation, however, Ashley Short will have access to the final thesis and the transcriptions (with no identifying features) if requested. Ashley Short and the LDANR will not have copies of the data.

Interview questions will include, but are not limited to: What is your role within the LDANR? What are important aspects of the design and implementation of Reading Rocks Junior? How important is it that the program is free of cost and offered within neighbourhood schools?

POTENTIAL RISKS

There are no known or anticipated risks associated with participation in this study. Your decision to participate or not is totally up to you and you may discontinue at any point during the interview.

CONFIDENTIALITY

All information you provide is considered confidential; your name will not be included or, in any other way, associated with the data collected in the study. Furthermore, you will not be identified individually in any way in written reports of this research. Data collected during this study will be stored at Brock University with the principal investigator. Data pertaining to the research study will be kept for 10 years after which time it will be destroyed. Access to this research data will be restricted to the research team consisting of Dr. John McNamara, Ashley Short (Director of the LDANR), and the Research Assistants working on the research project.

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you wish, you may decline to answer any questions or participate in any component of the study. Further, you may decide to withdraw from this study at any time and may do so without any penalty or loss of benefits to which you are entitled. If you choose to withdraw from the study, all of the data collected from you will be destroyed.

PUBLICATION OF RESULTS

Results of this study may be published in professional journals and presented at conferences. Feedback about this study will be available by contacting the principal investigator at the above address.

CONTACT INFORMATION AND ETHICS CLEARANCE

If you have any questions about this study or require further information, please contact the Principal Investigator using the contact information provided above. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University (file # 12-113). Thank you for your assistance in this project. Please keep a copy of this form for your records.

CONSENT FORM

I agree to participate in this study described above. I have made this decision based on the information I have read in the Information-Consent Letter. I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future. I understand that I may withdraw this consent at any time.

Name: _____

Signature: _____ Date: _____

Parent Consent Form

Date: **December 6, 2012**

Project Title: **Reading Rocks Junior: An exploratory study of an emergent literacy program for children at-risk for reading difficulties.**

Principal Investigator: **Sierra Holtzheuser**
Child and Youth Studies, Brock University
 Tel: **905.688.5550 ext 5541**

Co-Principal Investigator: **Ashley Short**
Learning Disabilities Association of Niagara
 Tel: **905.641.1021**

Principal Investigator and Faculty Supervisor:
John McNamara
Child and Youth Studies, Brock University
 Tel: **905.688.5550 ext 3835**

INVITATION

You are invited to participate in a study that involves research. The purpose of this study is to develop and measure the effects of an emergent literacy program designed to support children who have been identified as having reading-based needs. The research will be conducted by Sierra Holtzheuser and Dr. John McNamara from Brock University in partnership with Ashley Short, the Director of The Learning Disabilities Association of Niagara Region. The research is aimed at measuring the effectiveness of this emergent literacy program including the program's accessibility.

WHAT'S INVOLVED

As a participant, you will be interviewed for one hour. The interview will take place during the program (6:00-7:00pm on Tuesday or Thursday night at Ferndale Elementary School in St. Catharines). If this time does not work for you, we can schedule an alternate time and location. Keep in mind that being interviewed on site may have implications for confidentiality. As such, alternative locations may be discussed. Overall, we are interested in the importance of program accessibility, and general barriers that exist when accessing programs in your community. The interview will be audio recorded. The audio-tape and transcription of the interview will be kept anonymous, and only the principal investigator and interviewer (Sierra Holtzheuser) will be aware of who was interviewed. The LDANR will have no knowledge of your participation, however, Ashley Short will have access to the final thesis and the transcriptions (with no identifying features) if requested. Ashley Short and the LDANR will not have copies of the data. Interview questions will include, but are not limited to: Did the accessibility of the program (location or cost) contribute to your decision to participate in RRJ? Would you have attended the program had it been held elsewhere, like Brock for example? What are some of the barriers to accessing programs for your children?

POTENTIAL RISKS

There are no known or anticipated risks associated with participation in this study. Your decision to participate or not is totally up to you and you may discontinue at any point during the interview.

CONFIDENTIALITY

All information you provide is considered confidential; your name will not be included or, in any other way, associated with the data collected in the study. Furthermore, you will not be identified individually in any way in written reports of this research. Data collected during this study will be stored at Brock University with the principal investigator. Data pertaining to the research study will be kept for 10 years after which time it will be destroyed. Access to this research data will be restricted to the research team consisting of Dr. John McNamara, Ashley Short (Director of the LDANR), and the Research Assistants working on the research project.

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you wish, you may decline to answer any questions or participate in any component of the study. Further, you may decide to withdraw from this study at any time and may do so without any penalty or loss of benefits to which you are entitled. Participation or withdrawal at any time from the study will have no bearing on your child's participation in the Reading Rocks Junior Program. If you choose to withdraw from the study, all of the data collected from you will be destroyed.

PUBLICATION OF RESULTS

Results of this study may be published in professional journals and presented at conferences. Feedback about this study will be available by contacting the principal investigator at the above address.

CONTACT INFORMATION AND ETHICS CLEARANCE

If you have any questions about this study or require further information, please contact the Principal Investigator using the contact information provided above. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University (file # 12-113). Thank you for your assistance in this project. Please keep a copy of this form for your records.

CONSENT FORM

I agree to participate in this study described above. I have made this decision based on the information I have read in the Information-Consent Letter. I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future. I understand that I may withdraw this consent at any time.

Name: _____

Signature: _____ Date: _____

Appendix B. Interview Questions

Niagara Prosperity Initiative Interview

1. Can you speak about the importance of addressing poverty in Niagara?
2. Which populations are particularly vulnerable in the Niagara region? And what factors make them vulnerable to poverty?
3. How does poverty influence other factors? Literacy for example.
4. How important are partnerships between the community and various agencies? Schools? Etc.
5. Can you discuss the regional mandate for supporting vulnerable families?
6. Can you talk specifically about how the mandate addresses poverty?
7. Can you talk about the Niagara Prosperity Initiative? (What is it? How was it formed? How does it support the region?)
8. What's your role within NPI?
9. What types of programs are supported by the NPI?
10. How do you see programs like RRJ fulfilling the mandate you just described?
11. You are aware of the LDAN and their numerous literacy programs. Can you explain the importance of these programs for vulnerable communities?
12. You are aware of the LDAN and their increasing support for vulnerable families and communities. How important is it that these programs are provided at no cost within these vulnerable communities?
13. How important is it to provide these programs within the neighbourhoods where these vulnerable families live?
14. The two Niagara school boards support LDANR programming such as Reading Rocks Junior by sending program brochures home and speaking to families about the program being offered at their school. LDANR rents school classrooms and libraries to implement the Reading Rocks Junior program within the community. How important do you think it is for community agencies to work with local school boards to offer support to vulnerable families?

Learning Disabilities Association of Niagara Interview with Program Coordinator

General Questions:

1. Can you tell me a little bit about your role in the LDAN?
2. What is Reading Rocks Junior?
3. What are some important factors in the design and implementation of RRJ?
4. What does a typical evening in the program look like?
5. What elements make RRJ a success?
6. What are the eligibility criteria for participating?

Funding:

1. Is the program funded? And By whom?
2. Why is funding important?
3. Do the families who participate have to pay for the program?
4. Do you believe that the cost plays a role in the families' participation in the program?

Location:

1. Where does the program take place? (neighbourhoods and schools)
2. Why have you chosen these locations?
3. Why do you think it is important to place the programs within the neighbourhoods of the participating families?
4. Do you believe that the location plays a role in families' participation in the program?

Achievement gains:

1. Do children who participate in the program improve?
2. Is there a certain skill that is most-improved after participating?
3. What type of feedback do you receive from the families? Volunteers? Facilitators?

Parent Interview Questions

Accessibility Questions:

1. Do you live in the neighbourhood?
2. How did you get to the program each evening?
3. How did you find out about LDANR's Reading Rocks Junior program?
4. What made you sign your child up for RRJ?
5. Did the cost of the program contribute to your decision to participate in RRJ?
6. Did the location of the program contribute to your decision to participate in RRJ?
7. Would you have attended the program had it been held elsewhere, like Brock for example?

Reading Before Participation in Reading Rocks:

1. Can you describe a typical school day in your child's life?
2. Does your child enjoy school? What does he/she like best? If not, what is it he/she doesn't like about school?
3. Did (s)he read at home? Ask to be read to?
4. Would (s)he employ strategies to avoid reading or doing homework?

During Participation in Reading Rocks:

1. Since beginning Reading Rocks Junior, have you seen any changes in motivation or engagement in reading? Please explain.
2. How does your child perceive the Reading Rocks Junior program? Do they get excited before coming? Can you explain a typical day where Reading Rocks Junior took place?
3. Did the Reading Rocks Junior program benefit your child? If so, in what ways?
4. What were key elements of the program (specific examples) that contributed to your child's success or appreciation of the program?
5. Were there components of the program that you felt were particularly beneficial? The location, the tutors, the one-to-one instruction, the activities, or anything else?
6. Did you attend any of the parent sessions? If so, did you find them helpful?

After Participation in Reading Rocks:

1. What would you say are key elements that contribute to Reading Rocks Junior's success?
2. What are some of the barriers to accessing programs for your children?
3. The LDAN tries to offer programs within the communities of the families that will access them. Has this helped you?
4. The LDAN has a grant that enables them to offer programs at little cost. How important is this to you?
5. Would you recommend this program to other families?